Colorado Natural Resources, Energy & Environmental Law Review

Volume 28, Number 1 Winter 2017

Colorado Natural Resources,
Energy & Environmental Law Review
logo by Bill Foehring

ISSN: 2327-0683

Subscriptions

	Personal	Institutional
Single Issue	$20.00	$25.00
Entire Volume	$40.00	$50.00

Payable in U.S. currency or equivalent only. Check should accompany order. Please add $5 per single issue for postage and $15 per volume for overseas postage. All correspondence regarding subscriptions should be addressed to:

Managing Editor
Colorado Natural Resources, Energy & Environmental Law Review
University of Colorado Law School
Campus Box 401
Boulder, CO 80309-0401 - USA

Manuscripts

The *Environmental Law Review* invites submission of manuscripts to be considered for publication. Manuscripts may be mailed to the address below or e-mailed directly to elr.articles@colorado.edu. Unsolicited manuscripts can be returned if accompanied by postage and handling fees of $3.00 for third class or $5.00 for first class mail. Manuscripts can be sent to:

Lead Articles Editor
Colorado Natural Resources, Energy & Environmental Law Review
University of Colorado Law School
Campus Box 401
Boulder, CO 80309-0401 - USA

E-mail: envtl.law.review@colorado.edu
Internet Site: www.colorado.edu/law/EnvironmentalLawReview

Statement of Purpose and Editorial Policy

The *Colorado Natural Resources, Energy & Environmental Law Review* is a student edited academic legal journal dedicated to natural resources, energy, and environmental law and policy at the local, regional, and global scales. The Journal was formerly known as the *Colorado Journal of International Environmental Law & Policy* and we continue to publish articles that fall within the scope of our former title. We aim to publish at least one feature article that discusses an aspect of international environmental law and/or policy in each issue.

The *Environmental Law Review* is interested in articles submitted by authors that fall within this stated purpose. Authors uncertain whether their article is suitable for publication are encouraged to contact the Editor-in-Chief to discuss the subject matter of their article.

Articles or other materials from authors may be accepted for publication prior to undergoing any editorial modifications. Such materials may also be conditionally accepted with the understanding that the author will undertake major modifications prior to publication. Where appropriate, papers may be reviewed by experts within the relevant field to aid the *Environmental Law Review*'s publication decisions and editing processes. Editors will work with authors to refine the written product throughout the publication process, with the overall objective being to enhance the effectiveness of written communication.

Views expressed in the *Environmental Law Review* are those of the authors and do not necessarily reflect the views of the *Environmental Law Review*'s Editors or Staff.

Published twice annually by the
Colorado Natural Resources, Energy & Environmental Law Review
University of Colorado Law School
320 Wolf Law Building, Campus Box 401, Boulder, CO 80309-0401,
an association of students sponsored by
UNIVERSITY OF COLORADO LAW SCHOOL STUDENT FUNDS

Cite as: 28 COLO. NAT. RESOURCES, ENERGY & ENVTL. L. REV. ___ (2017).

Colorado Natural Resources, Energy & Environmental Law Review

Volume 28, Number 1 Winter 2017

The University of Colorado Law School

Law School Faculty, 2016–2017

Deans

S. JAMES ANAYA, *Dean, Charles Inglis Thompson Professor of Law,* B.A., University of New Mexico; J.D., Harvard Law School.

ERIK GERDING, *Associate Dean for Academic Affairs and Professor of Law.* A.B., Duke University; J.D., Harvard Law School.

MARK LOWENSTEIN, *Associate Dean for Faculty Development and Monfort Professor of Commercial Law*. A.B., University of Illinois; J.D., University of Illinois.

AMY GRIFFIN, *Associate Dean for Faculty Development.* B.A., Boston College; J.D., University of California, Berkeley.

WHITING LEARY, *Senior Assistant Dean of Students*. B.A., Williams College; J.D., University of Colorado.

MARCI FULTON, *Assistant Dean for Outreach, Engagement, and Alumni Relations*. B.A., University of Colorado; J.D., University of Colorado.

KRISTINE M. JACKSON, *Assistant Dean for Admissions and Financial Aid*. B.S., University of North Carolina; J.D., George Mason University.

TODD ROGERS, *Assistant Dean for Career Development.* B.S., Trinity University; J.D., University of Texas.

Emeritus Faculty

NORMAN AARONSON, *Professor Emeritus*. B.A., Brandeis University; J.D., Boston University School of Law.

HAROLD H. BRUFF, *Nicholas Rosenbaum Professor of Law*, B.A., Williams College; J.D., Harvard Law School.

EMILY M. CALHOUN, *Professor Emeritus*. B.A., M.A., Texas Tech University; J.D., University of Texas.

JAMES N. CORBRIDGE, JR., *Professor Emeritus*. A.B., Brown University; LL.B., Yale University.

TED J. FIFLIS, *Professor Emeritus*. B.S., Northwestern University; LL.B., Harvard University.

H. PATRICK FURMAN, *Clinical Professor Emeritus, Legal Aid and Defender Program, and Director of Clinical Programs*. B.A., J.D., University of Colorado.

WAYNE M. GAZUR, *Professor Emeritus*. B.S., University of Wyoming; J.D., University of Denver College of Law.

DAVID S. HILL, *Professor Emeritus*. B.S., J.D., University of Nebraska.

J. DENNIS HYNES, *Professor Emeritus*. B.A., LL.B., University of Colorado.

HOWARD C. KLEMME, *Professor Emeritus*. B.A., LL.B., University of Colorado; LL.M., Yale University.

WILLIAM T. PIZZI, *Professor Emeritus.* A.B., Holy Cross College; J.D. Harvard University; M.A. University of Massachusetts.

ARTHUR H. TRAVERS, JR., *Professor Emeritus*. B.A., Grinnell College; LL.B., Harvard University.

MICHAEL J. WAGGONER, *Professor Emeritus.* A.B., Stanford University; LL.B. Harvard University.

MARIANNE WESSON, *Professor Emeritus.* A.B., Vassar College; J.D. University of Texas.

Tenured and Tenure-Track Faculty

J. BRAD BERNTHAL, *Associate Professor of Law, Faculty Director of the Silicon Flatirons Entrepreneurship Initiative, and Director of LL.M Program in Entrepreneurial Law*. B.A., University of Kansas; J.D., University of Colorado.

FREDERIC BLOOM, *Associate Professor of Law.* B.A. Washington University in St. Louis; J.D., Stanford University.

WILLIAM BOYD, *Associate Professor of Law and Director of the Governor's Climate and Forests Task Force Project*. B.A., University of North Carolina, Chapel Hill; J.D., Stanford University; Ph.D., University of California, Berkeley.

ALEXIA BRUNET MARKS, *Associate Professor of Law*. B.A., Colgate University; M.S., Purdue University; Ph.D., Purdue University; J.D., Northwestern University.

PAUL F. CAMPOS, *Professor of Law*. A.B., M.A., J.D., University of Michigan.

DEBORAH J. CANTRELL, *Associate Professor of Law and Director of Clinical Programs*. B.A., Smith College; M.A., University of California, Los Angeles; J.D., University of Southern California.

KRISTEN A. CARPENTER, *Associate Dean for Research and Professor of Law.* B.A., Dartmouth College; J.D., Harvard Law School.

MING CHEN, *Associate Professor of Law*. B.A., Harvard University; J.D., New York University; Ph.D., University of California, Berkley.

RICHARD B. COLLINS, *Professor of Law*. B.A., Yale College; LL.B., Harvard University.

JUSTIN DESAUTELS-STEIN, *Associate Professor of Law*. B.A., University of North Carolina, Ashville; J.D., University of North Carolina, Chapel Hill; LL.M., Harvard University.

KRISTELIA GARCIA, *Associate Professor of Law and Faculty Director of the Content Initiative at the Silicon Flatirons Center for Law*. B.A., Columbia University; J.D., Yale University.

ERIK GERDING, *Associate Professor of Law.* A.B., Duke University; J.D., Harvard University.

AYA GRUBER, *Professor of Law*. B.A., University of California at Berkeley; J.D., Harvard University.

LAKSHMAN D. GURUSWAMY, *Nicholas Doman Professor of International Environmental Law*. LL.B., Sri Lanka; Ph.D., University of Durham, U.K.

MELISSA HART, *Professor of Law and Director of the Byron R. White Center for the Study of American Constitutional Law*. B.A., Harvard-Radcliffe College; J.D., Harvard University.

DAVID HASEN, *Associate Professor of Law.* B.A., Reed College; Ph.D. Harvard University; J.D. Yale University.

JENNIFER S. HENDRICKS, *Associate Professor of Law and Co-Director of the Juvenile and Family Law Program.* B.A., Swarthmore College; J.D., Harvard University.

PETER HUANG, *Professor of Law and DeMuth Chair.* A.B., Princeton University; S.M., Harvard University; J.D., Stanford University; Ph.D., Harvard University.

SHARON JACOBS, *Associate Professor of Law.* B.M. Cleveland Institute of Music, M.M. Julliard/Columbia University Exchange Program; J.D. Harvard Law School.

SARAH A. KRAKOFF, *Professor of Law and Schaden Chair in Experiential Learning*. B.A., Yale University; LL.B, University of California, Berkeley.

DAYNA BOWEN MATTHEW, *Professor of Law*. A.B., Harvard-Radcliffe College; J.D., University of Virginia.

SCOTT A. MOSS, *Associate Professor of Law*. B.A., M.A., Stanford University; J.D., Harvard University.

CHRISTOPHER B. MUELLER, *Henry S. Lindsley Professor of Procedure and Advocacy*. A.B., Haverford College; J.D., University of California, Berkeley.

ROBERT F. NAGEL, *Ira C. Rothgerber Professor of Constitutional Law*. B.A., Swarthmore College; J.D., Yale University.

HELEN NORTON, *Associate Professor of Law*. B.A., Stanford University; J.D., University of California, Berkeley.

SCOTT R. PEPPET, *Professor of Law*. B.A., Cornell University; J.D., Harvard University.

CAROLYN B. RAMSEY, *Professor of Law*. B.A., University of California, Irvine; A.M., J.D., Stanford University.

PIERRE J. SCHLAG, *University's Distinguished Professor and Byron White Professor of Constitutional Law*. B.A., Yale University; J.D., University of California, Los Angeles.

ANDREW SCHWARTZ, *Associate Professor of Law.* Sc.B., Brown University; J.D., Columbia University.

ANNA SPAIN, *Associate Professor of Law*. B.A., Denison University; J.D., Harvard University.

SLOAN SPECK, *Associate Professor of Law*. B.A., Rice University; J.D., University of Chicago.

MARK SQUILLACE, *Professor of Law*. B.S., Michigan State University; J.D., University of Utah.

HARRY SURDEN, *Associate Professor of Law.* B.A., Cornell University; J.D., Stanford University.

PHILIP J. WEISER, *Hatfield Professor of Law & Telecommunications, Dean Emeritus, Executive Director of the Silicon Flatirons Center for Law*. B.A., Swarthmore College; J.D., New York University.

AHMED WHITE, *Professor of Law*. B.A., Southern University and A&M College; J.D., Yale University.

CHARLES F. WILKINSON, *University's Distinguished Professor and Moses Lasky Professor of Law*. B.A., Denison University; LL.B., Stanford University.

Clinical Faculty

DEBORAH J. CANTRELL, *Associate Professor of Law and Director of Clinical Programs*. B.A., Smith College; M.A., University of California, Los Angeles; J.D., University of Southern California.

VIOLETA CHAPIN, *Associate Clinical Professor of Law*. B.A., Columbia College; J.D., New York University.

ANN ENGLAND, *Clinical Professor*, *Legal Aid and Defender Program*. B.A., University of Michigan; J.D., University of Denver.

CARLA FREDERICKS, *Associate Clinical Professor and Co-Director of the American Indian Law Program*. B.A., University of Colorado; J.D., Columbia Law School.

AUDREY HUANG, *Associate Professor of Law and Director of the Getches-Green Natural Resources, Energy and Environmental Law Clinic.* B.A. Johns Hopkins University; J.D. University of Southern California.

BLAKE REID, *Assistant Clinical Professor*. B.A., University of Colorado; J.D., University of Colorado.

COLENE ROBINSON, *Clinical Professor, Juvenile and Family Law*. B.A., Valparaiso University; J.D., Loyola University School of Law, Chicago.

Legal Writing and Appellate Advocacy Faculty

AMY BAUER, *Legal Writing Professor*. B.A., Duke University; J.D. William & Marry School of Law.

DEREK H. KIERNAN-JOHNSON, *Legal Writing Professor*. A.B., Princeton University; J.D., University of Michigan.

NATALIE MACK, *Legal Writing Professor*. B.S., University of South Carolina; J.D., University of Colorado.

GABRIELLE M. STAFFORD, *Legal Writing Professor*. B.A., University of Pennsylvania; J.D., Boston University.

TODD M. STAFFORD, *Legal Writing Professor*. B.A., Southern Methodist University; J.D., Duke University.

Law Library Faculty

ERIK BECK, *Digital Services Librarian*. B.A., University of Wisconsin; M.S.I.S., University of Texas.

GEORGIA K. BRISCOE, *Associate Director and Head of Technical Services*. B.S., Washington State University; M.A., University of San Diego; M.L.S., University of Michigan.

NICKHOLAS HARRELL, *Student Services and Outreach Librarian*. B.B.A. Temple University; J.D. Lewis & Clark; M.L.I.S. University of Washington.

ROBERT LINZ, *Head of Public Services and Associate Director of Law Library.* B.A., Wake Forest University; J.D., University of Florida; M.L.I.S., Florida State University.

SUSAN NEVELOW MART*, Associate Professor and Director of the Law Library*. B.A., University of California, Santa Cruz; J.D., Boalt Hall; M.L.I.S., San Jose State University.

JOAN POLICASTRI, *Collection Services and Research Librarian*. B.A., University of Colorado, Denver; M.A. University of Colorado, Denver; M.A. University of Denver; Certificate, Denver Paralegal Institute.

LISA SCHULTZ, *Instructional Services Librarian*. B.A., University of Nebraska-Lincoln; J.D., University of Nebraska-Lincoln; M.L.S., University of Missouri-Columbia.

KAREN SELDEN, *Catalog Librarian*. B.S., Pennsylvania State University; M.L.S., Simmons College.

JANE E. THOMPSON, *Head of Faculty Services*. B.A., University of Missouri; M.A., J.D., University of Denver.

Colorado Natural Resources, Energy & Environmental Law Review

Volume 28, Number 1 Winter 2017

Table of Contents

Articles

Speeches

Notes & Comments

Articles

Areas of Critical Environmental Concern: FLPMA's Unfulfilled Conservation Mandate[1]

Karin P. Sheldon∗ and Pamela Baldwin†

Authors' note: The analysis and citations in this article to "current" Bureau of Land Management (BLM) planning regulations are to the regulations in effect in 2015, when the article was initially prepared. In 2016, BLM issued new planning regulations, to be effective in January of 2017. However, on March 7, 2017, Congress voted to rescind these regulations pursuant to the Congressional Review Act. As of this writing, the President has not signed the bill into law, but there is little doubt that he will. When he does, the references in this article to the "current" regulations will continue to be to those in effect in 2015 and will be correct. Even if the President does not sign the bill, and the 2016 regulations stand, this article still provides a valuable history and examination of the enactment and current implementation of the ACEC provisions in FLPMA.

---

[1] This article is adapted from a report prepared by the authors in 2015 for the Pew Charitable Trusts. The authors thank Trevor Pellerite, Attorney and President of the Colorado Prairie Initiative, for his able assistance in the research for the report.

∗ President of Four Echoes Strategies, Senior Fellow, Getches-Wilkinson Center for Natural Resources, Energy and the Environment, University of Colorado School of Law, Adjunct Professor, University of Colorado School of Law.

† Federal lands consultant, formerly natural resources attorney, Congressional Research Service, Library of Congress, Washington, D.C.

ABSTRACT

The Federal Land Policy and Management Act of 1976 (FLPMA) directs the Secretary of the Interior, and by delegation the Bureau of Land Management (BLM), to provide special protection for Areas of Critical Environmental Concern (ACECs) on the public lands by according ACECs priority over other land uses in the agency's inventory, land designation, and planning activities. ACECs are a unique land and resource protection designation not found in any other federal land management statute. BLM was a partner in the establishment of FLPMA's statutory provisions on ACECs and initially promulgated robust regulations and guidance to implement them. Yet today, despite the clear mandate of Congress to give special attention to ACECs, references to them are virtually non-existent in BLM's regulations and administrative materials. The absence of strong regulations and guidance, coupled with the decentralized organization of BLM and certain of its management traditions, has hobbled the agency's use of this potent conservation tool to respond to the increasing pressures on the public lands from energy development, recreation demands, habitat fragmentation, and climate change.

This Article examines the legislative history of the ACEC provisions in FLPMA, reviews the ACEC regulations and guidance, and appraises BLM's on- the- ground management of ACECs. It also offers recommendations for improvements in the regulations and guidance to assure compliance with the requirements of FLPMA and enable BLM to make better use of ACECs to conserve and protect the remarkable and varied lands and resources under its care.

Table of Contents

I. INTRODUCTION

Ask almost anyone familiar with the lands managed by the Bureau of Land Management (BLM) about "Areas of Critical Environmental Concern," ACECs for short, and the response is likely to be either a puzzled look or a scoff. Although prominently featured in the declarations of policy, definition, and planning sections of the Federal Land Policy and Management Act (FLPMA), BLM's organic act, ACECs are largely ignored in agency regulations and guidance, and frequently overlooked or disparaged by land managers, scholars, and even environmental lawyers as an important tool for conservation. This is unfortunate. ACECs are a gem hidden in plain sight, a unique land and resource protection designation not found in any other federal land management statute. FLPMA gives BLM managers broad and flexible management authority. ACECs can be used to safeguard specific sites or resources, or large natural areas and processes on a landscape scale. They can also provide special management to assure preservation of fish and wildlife, cultural, historic, and scenic treasures.

The legislative history of FLPMA establishes Congress' clear intent to provide for special protection of ACECs and to direct BLM to accord priority for that protection over other multiple uses in the agency's inventory, land designation and planning activities. ACECs were an important aspect of Congress' effort to give BLM a modern land management mission that would assure conservation of valuable resources under the agency's administration. BLM was an early and enthusiastic partner in this effort and played an important role in the enactment of FLPMA in general, and the ACEC provisions in particular. The agency initially promulgated robust regulations and guidance to implement FLPMA's directives. During the Reagan Administration and the tenure of Interior Secretary James Watt, however, many FLPMA regulations and guidance directives—including nearly all those addressing ACECs—were significantly altered or eliminated as "burdensome" or "policy statements." Today, there are virtually no references to ACECs in BLM's administrative materials. No current regulation expressly sets out the statutory priorities to be given ACECs; no agency guidance defines "priority" or interprets how it is to be accorded, and ACECs are not a recognized agency program.

The absence of strong regulations and uniform guidance, coupled with the decentralized organization of BLM and certain of its management traditions, has resulted in a collection of ACEC designations without coherent administration. The BLM national office has no accurate database of ACECs and there is no standard format for reporting information about ACECs either within the agency or to the public. There is

no prescribed approach for discussion of ACECs in Resource Management Plans (RMPs), creating disparities in how ACECs are treated in planning and management. BLM managers deal with ACECs inconsistently, often considering their protection as simply one possible management choice—the basic approach for multiple use decisions in general, but one that ignores the special priority status Congress directed be given to them.

The weakness of BLM's administration of ACECs leads to impaired enforceability, loss of resources and values Congress intended to protect, and probably fewer ACEC designations and reduced funding for them. Most importantly, BLM's administration of ACECs hobbles the agency's use of this remarkable tool for landscape-level planning and management, and its ability to respond to the increasing pressures on the public lands from recreation demands, habitat fragmentation, and climate change.

How did the extraordinary ACEC provisions come to be included in FLPMA? Why did BLM's implementation go from enthusiastic engagement to the virtual absence of ACEC guidance today? How are ACECs currently being managed on the ground and how might the current deficiencies be addressed to more fully realize the potential of ACECs to contribute to public land conservation?

This article provides some answers to these questions through an examination of the legislative history of FLPMA, a review of BLM's ACEC regulations and guidance, and observations about BLM's management of ACECs on the ground. The article offers recommendations for improvements in BLM's ACEC regulations and guidance that would restore their original vigor and enable BLM to use ACECs to protect and preserve worthy lands and natural resources. The article is organized as follows:

II. The ACEC Provisions of the Federal Land Policy and Management Act

The article begins with a summary of some key features of FLPMA and its four directives concerning Areas of Critical Environmental Concern.

III. The Bureau of Land Management: History and Efforts to Define a Modern Management Mission

This section offers a brief account of the establishment of BLM and its early efforts to create a conservation agenda to balance its traditional role as the agency in charge of land disposal and commodity production.

IV. ACECs: From Concept to Enactment

This section traces the ACEC concept from its appearance in early BLM regulations and the report of the Public Land Law Review Commission (PLLRC), to the first use of the actual term in a model land use code, through its adoption in a number of congressional bills, to the final passage of FLPMA.

V. Agency Interpretation of ACECs: Disappearance of Statutory Priorities

BLM's treatment of ACECs changed markedly from the initial robust regulations and guidelines promulgated soon after the enactment of FLPMA to the limited administrative requirements and guidance of today. This section describes the decline that occurred after 1981, when the majority of ACEC provisions were weakened or removed from the regulations, erased from most of the agency's Manual, scattered among Handbooks, and ultimately deleted altogether.

VI. Observations from the Field: On-the-Ground Management of ACECs

In order to assess how BLM is managing ACECs on the ground, the authors reviewed a representative sample of 111 individual ACECs identified in 36 BLM Resource Management Plans (RMPs) in 11 Western states. This section summarizes the review, which showed extensive gaps in the information about ACEC resources and values in the RMPs examined, inconsistent treatment of the same or similar resources among field offices and RMPs, and a dearth of the special management prescriptions necessary to protect and prevent irreparable harm to the resources and values for which the ACECs were designated.

VII. Recommendations for Change in ACEC Interpretation and Management

The information collected from the field review, along with the assessment of the shortcomings in BLM's ACEC regulations and guidance, formed the basis for recommendations for improvements in the regulations, guidance, and on-the-ground management of ACECs. These recommendations include, *inter alia*, managing ACECs as an agency program, providing agency-wide guidance on the statutory requirements of FLPMA, and consistent procedures for planning for, designating, and managing ACECs.

II. THE ACEC PROVISIONS OF FLPMA

The Federal Land Policy and Management Act of 1976 (FLPMA)[2] is the organic management act for the Bureau of Land Management (BLM) in the United States Department of the Interior. The policy section of FLPMA calls for protection of the many resources and values of the public lands by demanding that:

> the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.[3]

FLPMA requires BLM to establish a planning process to guide the agency's management decisions, and directs that the public lands be managed under multiple use–sustained yield principles. The definition of multiple use–sustained yield specifies that the use of some lands for less than all of the resources is permitted, and that consideration should be given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output. The definition further states that the lands and their resource values should be utilized in the combination that will best meet the present and future needs of the American people. [4] FLPMA also requires the Secretary of the Interior to "take any action necessary to prevent unnecessary or undue degradation of the lands."[5]

In addition to this general protective mandate, FLPMA includes four distinctive provisions on "areas of critical environmental concern" (ACECs). These provisions call for special attention to be paid to the protection of such areas and require priority to be given to them in the inventorying, designation, and protection aspects of planning. ACECs appear only in FLPMA—there is no counterpart in any other federal land legislation. This singularity is particularly significant since the National Forest Management Act[6] (NFMA), which modernized planning and

---

[2] Act of October 21, 1976, Pub. L. No. 94-579, 90 Stat. 2744, 43 U.S.C. §§1701 *et seq*.

[3] FLPMA § 102(a)(8), 43 U.S.C. § 1701(a)(8).

[4] FLPMA § 103(c), 43 U.S.C. § 1702(c). Sustained yield means "the achievement and maintenance in perpetuity of a high-level annual or periodic output of the various renewable resources of the public lands consistent with multiple use." FLPMA § 103(h), 43 U.S.C. § 1702(h).

[5] FLPMA § 302(b), 43 U.S.C. § 1732(b).

[6] Act of October 22, 1976, Pub. L. No. 94-588, 90 Stat. 2949, 16 U.S.C. §§ 1601 *et seq*.

management of the national forests, was passed in the same year as FLPMA, but does not include ACEC language. Other federal land statutes, including those for the national parks, national wildlife refuges, and wilderness areas, designate lands to protect natural resources and values ranging from wildlife to wildness, but none contain the ACEC formulation found in FLPMA.

ACECs are distinguished from other land designations, as well, by their expansive scope. They may be used to provide special management of biological, cultural, historic, scenic, geological, and natural systems or processes.

The four provisions of FLPMA on ACECS are:

1)The definition of ACECs as:

> areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.[7]

2)The requirement in the FLPMA policy section that "regulations and plans for the protection of public land areas of critical environmental concern be promptly developed."[8]

3)The direction to the Secretary to "prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values (including, but not limited to outdoor recreation and scenic values), *giving priority to areas of critical environmental concern.* This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values."[9]

4)The mandate to the Secretary to "*give priority to the designation and protection of areas of critical environmental concern*" in developing and revising land use plans.[10]

The congressional insistence on priority for ACECs is unique for a multiple use land management statute. Both the Multiple Use–Sustained Yield Act of 1960 (MUSY), for the national forests, and FLPMA list var-

---

[7] FLPMA § 103(a), 43 U.S.C. § 1702(a).
[8] FLPMA § 102(a)(11), 43 U.S.C. § 1701(a)(11).
[9] FLPMA § 201(a), 43 U.S.C. § 1711 (emphasis added).
[10] FLPMA § 202(c)(3), 43 U.S.C. § 1712(c)(3) (emphasis added).

ious surface and subsurface resources on the federal lands and direct the agencies to determine the management of "the combination [of these resources] that will best meet the present and future needs of the American people . . . ."[11] The goal of the planning process in both statutes is to find an appropriate balance among the possible multiple uses. Yet, remarkably, in FLPMA Congress insisted that priority protection be accorded to areas of critical environmental concern, both in general and through inventory, designation, and protection in the planning process.

FLPMA gives the Secretary of the Interior, and by delegation BLM, cohesive and modern land management authority. The ACEC provisions not only afford BLM the opportunity to implement conservation measures, but *direct* that the agency do so in its planning for and administration of these special areas of the public lands.

III. THE BUREAU OF LAND MANAGEMENT: HISTORY AND EFFORTS TO DEFINE A MODERN MANAGEMENT MISSION

BLM manages approximately 255.8 million acres of land, predominantly in the West, as well as most of the federal government's mineral estate. These vast lands vary greatly, and include arctic, desert, range, and timber lands—lands prized for resources such as oil, coal, and other minerals, and for scenic, wildlife, wilderness, historic, recreational, and open space values.

Almost from its beginnings BLM has vacillated between two opposing philosophies of land and resource management: disposal or development on the one hand, and retention and conservation on the other. Conservation policies appeared early in the history of federal land management, but were initially outweighed by demands for resource production, and only gradually came to be acknowledged as important components of public land management. In recent years, BLM has been given significant responsibilities for conservation activities and policies.[12] Yet despite statutory changes that establish conservation requirements, priorities, and processes, the agency still has difficulty integrating these obligations into its traditional resource extraction and development

---

[11] Act of June 12, 1960, Pub. L. No. 86-517, 74 Stat. 215, 16 U.S.C. § 531(a); FLPMA § 103(c), 43 U.S.C. § 1702(c).

[12] In 2000, then Secretary of the Interior Bruce Babbitt established the National Landscape Conservation System (NLCS) that encompassed a number of newly designated National Monuments on BLM lands, monuments that were notable for historic, cultural, and outstanding natural resource values.

agenda. This fundamental conflict in philosophy is exacerbated by the BLM's decentralized management structure and some aspects of agency culture, which resist outside involvement in agency decisionmaking and management choices. The story of ACECs reveals these ongoing tensions in BLM's policy and approach.

A. Origins of the Agency

The early history of the BLM and one of its predecessor agencies, the General Land Office, shows almost a presumption that conservation-oriented land management would be provided by other agencies. And when concern for environmental protection, multiple use–sustained yield management, and land use planning policies arose in the 1960s and 1970s, BLM and the public lands were initially left out of the responsive legislation. Nonetheless, BLM accomplished important conservation results administratively until "catch up" legislation was enacted for the public lands. The agency's efforts were so successful that when the Public Land Law Review Commission (PLLRC) recommended in its 1970 report that Congress provide federal land management agencies with modernized land use planning authority, the Commission expressly pointed to the "sophisticated" land classification criteria and planning approaches taken by BLM as a good starting point for Congress to consider.[13]

How did BLM, well before FLPMA, develop such sophisticated planning processes and regulations that anticipated the ACEC priorities and protections?

The BLM was created administratively in Reorganization Plan No. 3 (1946)[14] from the merger of the General Land Office (GLO) and the Grazing Service. No new statutory mandate was provided; rather BLM was to continue to administer the approximately 3,500 laws enacted during the previous 150 years.[15]

The GLO was established in 1812 and originally located in the Treasury Department. It was tasked with raising money to finance the federal government by disposing of the government's vast land holdings and encouraging various types of development on those lands remaining in federal ownership. Many of the disposal statutes were patterned on the Jeffersonian ideal of family farms. Lands that could not sustain a family

---

[13] ONE THIRD OF THE NATION'S LAND: A REPORT TO THE PRESIDENT AND TO THE CONGRESS BY THE PUBLIC LAND LAW REVIEW Commission (hereafter PLLRC REPORT) at 9, 45-46, and 52 (June 1970).

[14] Reorganization Plan No. 3 of 1946, 60 Stat. 1097, 11 Fed. Reg, 7875, 60 Stat. 1097 (May 16, 1946).

[15] JAMES MUHN, OPPORTUNITY AND CHALLENGE – THE STORY OF BLM, USDOI at 54 (1988).

(primarily those in the arid West) came to be known as "the lands nobody wanted" and continued to be managed by GLO, and later the Grazing Service and BLM, under a potpourri of laws.

Despite the strong emphasis on conveying land out of federal ownership, the beginnings of American conservation policies were discernible by the end of the nineteenth century; *e.g*., with the creation of national parks, starting with Yellowstone in 1872, the enactment of the Antiq-Antiquities Act in 1906, which authorized the designation of national monuments by the President, and the establishment of the first wildlife refuge property by Presidential Proclamation on March 14, 1903. However, the GLO was so identified with land disposal and development that more conservation-oriented management was taken away from that agency.[16] BLM's administration of the residual "lands nobody wanted" continued to emphasize extraction and production, so much so that BLM was referred to as the "Bureau of Livestock and Mining." The emblem of the agency in the 1950s featured a logger, a cowboy, an oil driller, and a surveyor—in contrast to the current badge which features a winding river, a tree, and a mountain.

By the end of the 1950s there was a growing awareness of the value—economic and otherwise—of the federal lands. As our country became increasingly urbanized, the worth of these lands for recreation, wildlife, history, and just plain open space began to be appreciated. The concepts of "multiple use" provided for the recognition and protection of non-extractive and "natural" resources, and "sustained yield" embodied the conservation of commodity resources in perpetuity. Both the BLM and the Forest Service were made multiple use–sustained yield agencies by law—under the Multiple Use–Sustained Yield Act of 1960[17] for the Forest Service, and the Classification and Multiple Use Act of 1964[18]

---

[16] For example, for a time the Army managed Yellowstone, Yosemite, and Sequoia National Parks (*see* HARVEY MEYERSON, NATURE'S ARMY – WHEN SOLDIERS FOUGHT FOR YOSEMITE (2001). Early national monuments were removed from GLO management, primarily to the National Park Service when that entity was created in 1916, and management of early wildlife refuges went to the Bureau of Biological Survey in the Department of Agriculture (*see* ROBERT L. FISCHMAN, THE WILDLIFE REFUGES – COORDINATING A CONSERVATION SYSTEM THROUGH LAW, at 40 (Island Press 2003)). Similarly, although GLO had established a division to manage the new forests reserves authorized in 1891 and 1897, management of the federal forests was transferred to the Division of Forestry (now the Forest Service) in the Department of Agriculture (*see* PAUL W. GATES, HISTORY OF PUBLIC LAND LAW DEVELOPMENT, prepared for the PLLRC (1968) at 578-579). Scandals relating to GLO forest management and the professional forest management efforts of Gifford Pinchot in the Department of Agriculture prompted the transfer. A preference for the less conservation-oriented management of GLO played a role in Congress' decision to place management of the revested "O & C" lands in Interior in 1937.

[17] Act of June 12, 1960, Pub. L. No. 86-517, 74 Stat. 215, 16 U.S.C. §§ 528 – 531.

[18] Pub. L. No 88-607, 78 Stat. 986.

(CMUA) for BLM. Legislation for these management changes for BLM was temporary, not permanent. The CMUA was set to expire six months after the Public Land Law Review Commission submitted its report to Congress. (See discussion of the CMUA in the following section.) Similarly, the Wilderness Act of 1964, which created the system of congressionally designated wilderness areas and directed the study of federal natural areas that could be designated in the future, did not include BLM lands. Twelve years later, FLPMA authorized formal studies of BLM roadless areas with wilderness characteristics.

Despite the lack of a legislative mandate, BLM provided administrative protection for natural and primitive areas well before FLPMA, broke significant new ground in management planning in the mid-1960s, and developed the concept and use of environmental assessments before the Council on Environmental Quality regulations required them.

B. Early Legislation: The Classification and Multiple Use Act

On September 19, 1964, Congress enacted three statutes in sequence that had far-reaching impacts on the BLM lands. The first established the Public Land Law Review Commission (PLLRC), charged with studying land use policy in general and the management of the federal lands in particular, and making recommendations to Congress.[19] The second was the Classification and Multiple Use Act (CMUA), which addressed the BLM lands specifically.[20] The third was a land sales act to guide the disposal of public lands classified as available for transfer out of federal ownership under regulations implementing the CMUA.[21]

After 1964, the PLLRC and BLM began *simultaneously* to study BLM management of the public lands and consider changes. BLM quickly developed classification criteria and land use planning processes, circulated proposed regulations, involved the states and the public in its considerations, and promulgated regulations beginning in 1965.

Passage of the CMUA, and BLM's response to it, marked a sea change in BLM's management of the public lands. The CMUA was a bridge from the previous practice of cobbling together management under the huge number of lands-related statutes that had accumulated over the years to the cohesive system that was accomplished with FLPMA in 1976.[22] The 1964 congressional enactments and the significance of BLM's response to them cannot be overstated.

---

[19] Pub. L. No. 88-606, 78 Stat. 982.
[20] Pub. L. No. 88-607, 78 Stat. 986.
[21] Pub. L. No. 88-608, 78 Stat. 988.
[22] *See* the pages of repealed statutes listed in uncodified Title Seven of FLPMA.

The CMUA contained language and direction[23] that both presaged and affected subsequent events. It included language on multiple use–sustained yield very similar to language that appeared twelve years later in FLPMA. The CMUA also ordered the Secretary of the Interior to develop classification regulations and criteria to determine which BLM lands should be disposed of and which should be retained—at least during the period the CMUA was in effect. Retained lands would be managed for many purposes, including domestic livestock grazing, fish and wildlife development and utilization, industrial development, mineral production, occupancy, outdoor recreation, timber production, watershed protection, wilderness preservation, or for preservation of public values that would be lost if the land passed from federal ownership.

In making the classification determinations, the Secretary was to "give due consideration to all pertinent factors, including, but not limited to, *ecology, priorities of use*, and the relative values of the various resources in particular areas" (emphasis added). The reference to considering "ecology" was cited favorably in the PLLRC report,[24] and the concept of establishing "priorities of use" was repeated in pre-FLPMA BLM regulations and later in the ACEC language of FLPMA. Classification of lands for retention or disposal is still part of BLM's planning process.

The CMUA was a "temporary" statute—the statute and regulations implementing it were to expire six months after the submittal of the final PLLRC report.[25] BLM began immediately to design a system to classify the public lands for retention or disposal, and to address management of those lands retained in federal ownership. BLM interacted with states and localities regarding the classification criteria and the directions expressed in the CMUA. To implement the required multiple use-sustained yield management and to consider ecological needs and establish "priorities of use," the agency created a system of land use planning for the lands retained by the federal government, including the initial "Unit Re-

---

[23] Section 5(b) of the CMUA defined "multiple use" as "the management of the various surface and subsurface resources so that they are utilized in the combination that will best meet the present and future needs of the American people; the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing need and conditions; the use of some land for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output."

[24] PLLRC REPORT at 46.

[25] The CMUA was to expire six months after the final report of the PLLRC; the deadline for that report was extended to December 31, 1970. However, BLM also cited R.S. 2478 as continuing authority to regulate the public lands.

source Analysis" and later "Management Framework Plans" (MFPs). The 1970 PLLRC report expressly praised the "sophisticated" BLM planning processes and opined that they were a good starting point for Congress to develop similar planning guidance for all federal land management agencies.[26]

It is important to note that because BLM considered planning to be an integral part of how it performed its duties, the development and implementation of MFPs was carried out in-house with management guidance contained in agency manuals and other materials, rather than in regulations, even though regulations were issued to implement other aspects of the CMUA. MFPs remained in effect for years after the enactment of FLPMA. It was not until post-FLPMA regulations were promulgated that Resource Management Plans (RMPs) were developed and published in the now customary manner.

C. Pre-FLPMA Regulations

Significantly, the first CMUA regulations proposed by BLM in 1965 noted that, because the statute *did not assign overall priority for any specific use*, "the Secretary or his delegate will authorize that use or combination of uses which will best achieve the objectives of multiple use" and "the lands will be managed for optimum production of the various products and uses for which they are physically and economically suited."[27] The 1965 regulations did recommend a system of classifying "recreation lands" that included wilderness and roadless areas. This approach – of retaining and protecting "recreation lands" – was broadened in subsequent regulations that increasingly approximated the enacted ACEC language.[28]

---

[26] PLLRC REPORT at 46.

[27] 30 Fed. Reg. 2384-2385 (Feb. 20, 1965) (emphasis added).

[28] The 1965 regulations expressly proposed retaining and protecting lands to provide for "enjoyment of scenery, water, primitive or natural landscape (including roadless areas), wildlife, natural phenomena *(i.e.,* petrified wood), and archeological and historical sites … to further a national program for the provision of necessary recreational, conservation and scenic areas and open space (42 U.S.C. § 1500), and for the assurance of outdoor recreation resources for present and future generations of Americans." (16 U.S.C. § 460:1-3), 30 Fed. Reg. 2384, 2388 (Feb. 20, 1965). Wilderness protection was also addressed at 2389. 1966 regulations authorized the designation of areas, some of which could be quite large, including: scenic, habitat, roadless and primitive areas, and historic and cultural sites. Lands could be classified as one or more of the six classes adopted by the Bureau of Outdoor Recreation and would be identified and described at the time of designation. Some of the areas, *e.g.,* Class IV – outstanding natural areas, and Class V – primitive undeveloped areas, clearly could be large. (43 C.F.R. Part 1720 – Programs and Objectives; Subpart 1720 – Designation of Areas and Sites, § 1727.1, 31 Fed. Reg. 13914 (Oct. 29, 1966). Still later regulations moved closer to ACEC language in several respects. They addressed the identification of "circumstances under which *use of such*

BLM regulations were reconfigured in 1970. These regulations retained the classes of recreation lands from the 1969 publication and added a fourth.[29] Most significantly, the 1969 Part 6000 regulations on "outdoor recreation" (the catch-all term for many non-extractive values) were included in a section on management policy that stipulated giving priority to the *"preservation and protection of natural and cultural resources, including but not limited to scientific, scenic, historic, and archeological values, and primitive environment…."*[30] This language is clearly a forerunner of the FLPMA provisions on ACECs.

To summarize: well before FLPMA, and by the time of the 1970 PLLRC report, BLM had developed a system of land management planning and had promulgated regulations requiring that priority be given to the preservation and protection of natural and cultural resources on what were referred to as the "National Resource Lands."[31] In FLPMA, the ACEC provisions broadened these BLM denominations beyond "recreation" lands, and expressly applied the principles of designation, protection, and priority to many other resource values and land categories. FLPMA language directs the agency to inventory lands and "values (including, but not limited to outdoor recreation and scenic values), giving priority to areas of critical environmental concern."[32] This parenthetical language appears to be a nod to the 1970 BLM regulations that couched protection of many lands and values under the heading of recreation and scenic values.

IV. ACECs: FROM CONCEPT TO ENACTMENT

The ACEC concept – recognition of the compelling need to identify and protect public lands areas containing special ecological, aesthetic, historic and cultural resources and values – represents the confluence of

---

lands may be restricted in order to protect the public health and safety, and natural resources and values." They authorized additional rules and temporary closures to protect health and safety, prevent erosion, unnecessary destruction of plant life and wildlife habitat, the natural environment, areas having cultural or historical value, or to protect scientific studies or preserve scientific values. Most importantly, the regulations directed that priority be given to recreation development and enhancement and to the *preservation and protection of* natural and cultural resources, including but not limited to scientific, scenic, historic, and archaeological values, and primitive environments. 34 Fed. Reg. 857-858 (Jan. 18, 1969) (emphasis added).

[29] 35 Fed. Reg. Part 2, 9533-9534, 9560, 9793-9795 (June 13, 1970).

[30] *Id*. at 9793-9794 (emphasis added).

[31] 43 C.F.R. § 2071.1(b)(5), 35 Fed. Reg. Part 2, 9533-9534 (June 13, 1970).

[32] FLPMA § 201(a), 43 U.S.C. § 1711.

a number of sources and influences that arose simultaneously in the decade and a half from 1964 to the passage of FLPMA in 1976. This was a time of growing public concern about the quality of the environment, a realization that the degradation of air, water and landscapes was no longer a local problem but required a national response. It was an era in which a bi-partisan Congress produced the Clean Water and Clean Air Acts, the National Environmental Policy Act (NEPA), and the Endangered Species Act, among others. Federal lands received congressional attention, as well, in the Multiple Use-Sustained Yield Act of 1960 for national forests, the National Forest Management Act of 1976, the Wilderness Act of 1964, and the National Wildlife Refuge System Act of 1966.

As discussed in the preceding section, BLM, alone among the land managing agencies, was without an organic act or a modern mission and management authority. The agency was charged with the implementation of "an archaic and often conflicting conglomeration" of more than 3,000 laws, many of which focused on the disposal of public lands and the disposition of commodity resources. A primary source for its land managing authority was the Taylor Grazing Act of 1934 which authorized the Secretary of the Interior to establish grazing districts on BLM lands "in order to promote the highest use of the public lands pending its (sic) final disposal."[33]

This untenable situation was recognized by members of Congress, among them Rep. Wayne Aspinall of Colorado, Chair of the House Committee on Interior and Insular Affairs, who called for the creation of a congressional commission to review all lands remaining in federal ownership, with the goal of deciding how best to manage them in the future. On September 19, 1964, Congress established the Public Land Law Review Commission (PLLRC)[34] with Rep. Aspinall as its Chair.

A. The Public Land Law Review Commission

In substantial measure, FLPMA, including the ACEC provisions, is the ultimate legislative outcome of the recommendations provided to Congress by the PLLRC and efforts within BLM itself.[35] The Commis-

---

[33] Taylor Grazing Act, Act of June 28, 1934, ch. 865, 43 U.S.C. § 315 (1934). Because the grazing districts were to be created from lands "chiefly valuable for grazing and raising forage crops," most public lands were withdrawn for classification after enactment. R.S. 2478, now codified as 43 U.S.C. § 1201 (1946), also gave BLM general authority to regulate the public lands.

[34] Pub. L. No. 88-606, 78 Stat. 982.

[35] As evidenced by BLM regulations promulgated by 1970, BLM had already put in place language and protections that were precedents for the ACEC provisions and concept. BLM, the PLLRC, CEQ, and others were all working on land use reform in general and protection of special areas in particular.

sion's report *One Third of the Nation's Land* (PLLRC Report) noted "the ever growing concern of the American people about the deterioration of the environment"[36] and the public's "almost desperate need to determine the best purposes to which their public lands and the wealth and opportunities of those lands should be dedicated." [37] The Commission regarded its work and recommendations as a "rare opportunity" to respond to those concerns.[38]

Two fundamental themes were expressed in the PLLRC Report and its recommendations. The first was the need to reverse the policy in many of the statutes implemented by BLM of wide-spread disposal of unappropriated public lands, *i.e.*, areas not reserved or designated for specific uses. The Report recommended that "[t]he policy of large-scale disposal of public lands reflected in the majority of statutes in force today be revised and that future disposal should be of only those lands that will achieve maximum benefit for the general public in non-Federal ownership, while retaining in Federal ownership those whose values must be preserved so that they may be used and enjoyed by all Americans."[39] The PLLRC added that it supported the concepts embodied in the establishment and maintenance of the national forests, the National Park System, the National Wildlife Refuge System and other named conservation designations.[40]

The second theme in the PLLRC Report was the valuable role of land use planning in responding to public concerns about the environment and determining the most appropriate management for the lands retained in federal ownership.[41]

To address both these matters the Commission recommended review of all lands not previously designated for specific purposes, in order to identify the types of uses and activities that would provide the maximum benefit to the public. The Commission called for national goals and standards for land management to assure that public lands would be administered in a manner that "not only will not endanger the quality of the environment, but will, where feasible, enhance the quality of the environment…."[42]

The Commission proposed that all public agencies be required to formulate long range, comprehensive land use plans for each state or re-

---

[36] PLLRC REPORT at 3.
[37] *Id.* at 1.
[38] *Id.*
[39] *Id.*
[40] PLLRC REPORT at 1.
[41] *Id.* at 1, 9.
[42] *Id.* at 3.

gion, relating such plans to internal agency programs and to the plans and programs of other agencies.[43] To assure that plans achieved environmental protection, the PLLRC advocated that "environmental quality be recognized by law as an important public objective of public land management, and public land policy should be designed to enhance and maintain a high quality environment both on and off the public lands."[44]

Although the PLLRC did not use the term ACEC, the importance of identifying and protecting land areas with special resources and values is manifest throughout its Report. One of the clearest illustrations of the significance of such a policy is the Report's table of a "possible classification system for environmental management" on the public lands.[45] The section of the table called "Quality of Experience" lists four categories of environmental attributes: "visual and esthetic environments," "cultural, historical, and informational values," "personal and social experiences" and "natural biological and physical features" to be monitored and managed to preserve, protect, enhance and/or restore these resources and values. The table describes the types of agency actions necessary to accomplish the management goals, including prohibiting, limiting, or avoiding conflicting activities. [46] Much of the language that was ultimately included in FLPMA and in the ACEC provisions is used in the table. Even without the ACEC label, therefore, classification and protection of areas with special characteristics is explicit in the Commission's recommendations for a public land management system.

The PLLRC's Report contains other specific recommendations to address what the Commission saw as the inadequacies in public land policy and management at the time. While not all of these were adopted by the Congress, many of the Commission's fundamental policy ideas are expressed in FLPMA. Of particular relevance to the ACEC concept are the following:

> Number 4—"Management of public lands should recognize the highest and best use of particular land areas as dominant over other authorized uses."[47]
>
> Number18—"Congress should require classification of the public lands for environmental quality enhancement and maintenance" and recognize the need "to provide for different degrees of environmental quality" on the federal landscape. [48] The envi-

[43] *Id.* at 9, 52.
[44] *Id*., Recommendation 16 at 68.
[45] PLLRC REPORT, Quality of Experience Table at 78-79.
[46] *Id.*
[47] *Id*., Recommendation 4 at 48.
[48] *Id.,* Recommendation 18 at 10, 73.

ronmental factors to be considered in land use plans should include "topography, geology, soil, hydrology, vegetation, wildlife, climate, and visual and spatial form . . . ."[49]

Number 64—"Public lands should be reviewed and key fish and wildlife habitat zones identified and formally designated for such dominant use." [50] This recommendation states that "[f]ormal commitment of specific areas where wildlife values will consistently receive dominant treatment in all resource decisions is (sic) an essential step in converting stated policy goals to operational form in the field." Various classifications are suggested, including big game wintering and summering areas, bird nesting and feeding habitats, cover zones for migratory birds, and fish zones, which could be stream systems or perhaps whole watersheds. [51]

Number 78—"An immediate effort should be undertaken to identify and protect those unique areas of national significance that exist on public lands." "[A] comprehensive inventory …to identify all such areas should be conducted as soon as possible, and . . . they should be assigned a priority for protection pending designation under established procedures."[52] While this recommendation was intended to place nationally significant areas in a holding pattern pending their designation as a National Park or Wilderness, the emphasis on their identification as a planning priority in order to protect values and resources from damage or loss is repeated in FLPMA for the designation of ACECs.

---

[49] PLLRC REPORT, Recommendation 18 at 73-74.

[50] *Id.*, Recommendation 64 at 168.

[51] *Id.* at 12, 168. Recommendations 64 and 4 call for the commitment of certain public land areas to limited "dominant uses." The term "dominant use" appears in the PLLRC report with respect to timber, mining and other activities, as well as to non-commodity uses. The PLLRC regarded multiple use as of "little practical meaning as a planning concept or principle" and preferred more of a zoning approach to the classification of lands. *Id.* at 45. In FLPMA, Congress adopted multiple use-sustained yield as the overall management paradigm for the public lands, but retained the idea, even in the definition of multiple use, that some land uses will take precedence over others and some land areas will be restricted in the activities that may occur on them.

The BLM worked to replace its previous single use emphasis with the new multiple use-sustained yield system, and to develop comprehensive planning to implement it. *See* Charles H. Stoddard, *A Director's Perspective: 1963-1966* in MUHN, *supra* note 15, at 119.

[52] PLLRC REPORT at 13, 198-199.

B. Legislative Precursors to FLPMA

1. 91st Congress: Response to the PLLRC

Beginning with the 91st Congress in 1970, Congress and the Administration responded to the Public Land Law Review Commission's Report with a series of legislative efforts to address public land policy. Over the next five years, more than a dozen bills were introduced and considered in committee and by both House and Senate.[53] The legislation took two basic approaches: bills that authorized nationwide land use planning – on state as well as federal lands- and bills that focused on planning provisions for the BLM and other federal agencies. Both types of bills included some form of ACEC language. The bills that emphasized national land use planning were not enacted; those that dealt with federal land policy, particularly for lands under the management of the Bureau of land Management, ultimately resulted in FLPMA, passed by the 94th Congress in 1976.

2. 92nd Congress: Appearance of the Term "Areas of Critical Environmental Concern"

The term "Areas of Critical Environmental Concern" first appeared in 1971 in the National Land Use Policy Act and the National Resource Land Management Act. Both were Administration proposals and part of President Nixon's Program for the Environment.[54] Both were introduced in both houses of Congress in 1971 and combined for consideration in committee. Neither was enacted.

a. The National Land Use Policy Act

The National Land Use Policy Act was drafted by the President's Council on Environmental Quality (CEQ), then under the direction of Russell Train. The Act declared that state and local institutional arrangements for planning and regulating land uses with greater than local impact were "inadequate," with the result that "important ecological, cultural, historic and aesthetic values in areas of critical environmental con-

---

[53] SEN. COMM. ON INTERIOR AND INSULAR AFFAIRS, National Resource Lands Management Act of 1975, S. REP. NO. 94-583, at 36 (Dec. 18, 1975), LEGISLATIVE HISTORY OF THE FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976 (PUBLIC LAW 94-579), US Government Printing Office Publication 95-99, April 1978 (hereafter FLPMA LEGIS. HISTORY) 101.

[54] Charles Callison, *Areas of Critical Environmental Concern on the Public Lands: Part I. Origins of the Concept and Legislative History (hereafter* Callison Report*)* A Report for the Wild Wings Foundation, The Public Lands Institute, Washington, D.C. ((1984) at 3.

cern which are essential to the well-being of all citizens are being irretrievably damaged or lost." [55]

According to William K. Reilly, senior staff member of the CEQ, the ACEC concept and language in the Land Use Policy Act were "adapted, and to a substantial extent simply lifted" from the Model Land Use Code developed by the American Land Use Institute in the late 1960's, the same time the PLLRC carried out its studies and drafted its report.[56] The Model Land Use Code called for designation and protection of "areas of critical state concern" which it defined as areas "containing or having a significant impact upon historical, natural or environmental resources of regional or statewide importance."[57]

In the proposed National Land Use Policy Act, ACECs were defined as "areas where uncontrolled development could result in irreversible damage to important historic, cultural, or aesthetic values, or natural systems or processes, which are of more than local significance; or life or safety as a result of natural hazards of more than local significance."[58] As examples of areas qualifying for ACEC protection the Act listed coastal zones and estuaries, shorelands and flood plains, rare or valuable ecosystems, scenic or historic areas, and "areas of familiar, valuable or hazardous characteristics which a State determines to be of critical environmental concern." [59]

The goal of the National Land Use Policy Act was not to create a system of land use planning for the federal lands, but rather to "[encourage] the States to exercise their full authority over the planning and management of non-federal lands by assisting the States, in cooperation with local governments, in developing land use programs…for dealing with land use decisions of more than local significance."[60]

The National Land Use Policy Act never became law. Real estate associations and other groups opposed it out of concern that it would lead to federal zoning controls on the states.[61] However, the coastal zone sections of the proposal survived in the Coastal Zone Management Act of 1972.[62]

---

[55] *Id.* at 4.
[56] *Id*.
[57] *Id.* at 2.
[58] Callison Report, *supra* note 54, at 4.
[59] *Id.*
[60] *Id*.
[61] *Id*.
[62] Callison Report, *supra* note 54, at 5.

b. The National Resource Land Management Act

The ACEC concept, and much of the language in the National Land Use Policy Act, was adopted for federal land management in the National Resource Land Management Act of 1971.[63] This Administration proposal was drafted by Mike Harvey, Counsel for the Senate Committee on Interior and Insular Affairs (and formerly a BLM employee), and Irving Senzel, Assistant Director of BLM for Legislation and Planning,[64] and introduced "by request" by Senators Jackson and Allott in August of 1971 as S. 2401.[65] The bill defined ACECs as "areas where uncontrolled use or development could result in irreversible damage to: important historic, cultural, or aesthetic values, or natural systems or processes, or life or safety as a result of natural hazards."[66] Specific examples of such areas included coastal zones and estuaries, shorelands and flood plains, "*rare and valuable ecosystems*," (emphasis added) scenic or historic areas; and "such additional areas of similar valuable or hazardous characteristics which the Secretary determines to be of critical environmental concern."[67]

The bill called for "priority" consideration of ACECs in the required inventory of "national resource lands and their resources," the designation of ACECs in land use plans, and the prompt development of regulations for ACEC protection, all provisions that appear in FLPMA.[68]

In a July 20, 1971 letter to Vice President Agnew explaining the National Resource Land Management Act, Secretary of the Interior Rogers C.B. Morton noted that the legislation directed the Secretary of the Interior to inventory and develop comprehensive land use plans for the national resource lands, "giving priority to lands in critical environmental areas," including flood plains, coastal zones and scenic or historic areas. The letter continued, "The identification of the most critical environmen-

---

[63] S. 2401, The National Resource Land Management Act of 1971 (Aug. 3, 1971), *reprinted in* FLPMA LEGIS. HISTORY 1111.

[64] Callison Report, *supra* note 54, at 3.

[65] *Id.* at 5.

[66] S. 2401 at 3, *reprinted in* FLPMA LEGIS. HISTORY 1113.

[67] *Id.* Although the CMUA directed consideration of "ecology," the inclusion of the term "ecosystem" in both the National Land Use Policy Act and the National Resource Land Management Act is unusual for 1971. It indicates that the drafters of the legislation contemplated the use of ACECs for large land areas, possibly even landscape-scale designations. Although the list of examples of types of ACECs was dropped from the final definition of ACEC adopted in FLPMA, there is nothing in the legislative history to suggest that Congress intended to restrict the designation of ACECs to small plots. Indeed, the current group of designated ACECs includes many areas of significant acreage, for example, the 84,108 acre San Rafael Reef ACEC in Utah, the 51,197 acre Beaver Dam Slope ACEC in Arizona, and the 44,521 acre Trickle Mountain ACEC in Colorado.

[68] S. 2401 at 4-6, *reprinted in* FLPMA LEGIS. HISTORY 1114-1116.

tal areas will be given a high priority by this Department so that those areas may be given the protection they so urgently need."[69]

The Senate Committee on Interior and Insular Affairs favorably reported on S. 2401 and recommended its passage on September 18, 1972. The Committee's Report stated that the purpose of the bill was to provide

> The first comprehensive statement of congressional goals, objectives, and management guidelines for the use and management of 450 million acres of Federally-owned lands administered by the Bureau of Land Management. . . .The bill establishes as national policy the need to preserve and protect the quality of the national resource lands and their numerous values to assure their continued enjoyment by present and future generations. S. 2401 emphasizes the importance of non-quantifiable as well as quantifiable values to the national interest by providing numerous assurances that scientific, scenic, recreational, historical, and archeological values; natural areas, and fish and wildlife habitats will be afforded ample protection and significant consideration in the national resource land management process.[70]

3. 93rd Congress: The Definition of ACECs Is Refined

S. 2401 never made it to the Senate floor. Senator Jackson introduced a similar bill on January 18, 1973 as S. 424, the National Resource Lands Management Act of 1973.[71] The definition of ACECs in S. 424 closely resembled the definition set out in S. 2401, but eliminated the list of specific examples included in the previous bill. In S. 424, ACECs were defined as "areas within the national resource lands where uncontrolled use or development could result in irreversible damage to important historic, cultural, or scenic values, or natural systems or processes, or life and safety as a result of natural hazards."[72] The bill emphasized the priority to be given to ACECs in the inventory and land use planning processes.[73]

---

[69] Letter concerning the National Resource Land Management Act of 1972 from Sec. of Int. Morton to Vice Pres. Agnew, SEN. COMM. ON INTERIOR AND INSULAR AFFAIRS, S. REP. NO. 92-1163, at 23 (Sept. 18, 1972), *reprinted in* FLPMA LEGIS. HISTORY 1174.

[70] SEN. COMM. ON INTERIOR AND INSULAR AFFAIRS, National Resource Lands Management Act of 1972, S. REP. NO. 92-1163, at 5, *reprinted in* FLPMA LEGIS. HISTORY 1156.

[71] FLPMA LEGIS. HISTORY 1475.

[72] National Resource Lands Management Act of 1973, S. 424 at 3, *reprinted in* FLPMA LEGIS. HISTORY 1477.

[73] *Id*. at 4-7, FLPMA LEGIS. HISTORY 1478-1479.

The Report of the Senate Interior and Insular Affairs Committee accompanying S. 424 noted that this was a "new definition [of ACECs] so far as the public lands are concerned; however it also appears in a longer form in the Land Use Policy and Planning Assistance Act" of 1973.[74]

S. 424 was passed by the Senate on July 8, 1974, but no action was taken on it by the House of Representatives during the 93rd Congress.[75]

The Administration also submitted a bill in 1973. The National Resource Lands Management Act, S. 1041, was introduced on February 28, 1973, at the request of the Administration, by Senators Jackson and Fannin.[76] It, too, stressed the importance of ACEC designation and protection, and included a similar definition of the term.

> [ACECs are] those national resource lands as designated by the Secretary where uncontrolled development could result in irreversible damage to important historic, cultural, or aesthetic values, or natural systems or processes, or could unreasonably endanger life and property as a result of natural hazards.[77]

S. 1041 included a kitchen sink list of potential candidate areas: "coastal wetlands, marshes, and other lands inundated by the tides; beaches and dunes; significant estuaries, shorelands, and flood plains; rivers, lakes, and streams; areas of unstable soils and high seismic activity, rare or valuable ecosystems; significant agricultural, grazing, and watershed lands; forests and related land [requiring] long stability for continuing renewal; scenic or historic areas; and such other areas as the Secretary determines to be of critical environmental concern, including lands with wilderness qualities.[78] Neither the Senate nor the House acted on this bill.[79]

---

[74] S. REP. 93-873 (MAY 22, 1974), at 31, *reprinted in* FLPMA LEGIS. HISTORY 1563. This explanation of the origin of the definition of ACECs was repeated in the Report of the Senate Committee on Interior and Insular Affairs accompanying S. 507, the bill that actually became the Federal Land Policy and Management Act. SEN. COMM. ON INTERIOR AND INSULAR AFFAIRS, National Resource Lands Management Act of 1975, S. REP. 94-583 (Dec. 15, 1975), at 43, *reprinted in* FLPMA LEGIS. HISTORY 108. *See* note 87 *infra.*

[75] *Memorandum on the Legislative History of FLPMA by the Chairman of the Senate Committee on Energy and Natural Resources*, FLPMA LEGIS. History v.

[76] For the text of S. 1041, the National Resource Lands Management Act of 1973 (Feb. 28, 1973), *see* FLPMA LEGIS. HISTORY 1491.

[77] National Resource Lands Management Act, S. 1041, at 3, FLPMA LEGIS. HISTORY 1493.

[78] *Id.*

[79] *Memorandum of the Chairman of the Senate Committee on Energy and Natural Resources*, FLPMA LEGIS. HISTORY v.

Between 1973 and 1975 the House "worked fruitlessly" on public land management bills,[80] primarily because of wrangling over a complex proposal from Rep. Aspinall to establish planning and management policy for all public lands, including both Forest Service and BLM lands.[81] As with the Senate bills, officials of the Department of the Interior consistently recommended ACEC provisions be incorporated in House bills.[82] The House did report a bill in 1974 which was subsequently revised a number of times.[83] The final version was favorably reported on May 13, 1976 as HR 13777.[84]

4. 94th Congress: FLPMA is Enacted

In 1975, Sen. Jackson tried again to move the National Resource Land Management Act through the Congress. On January 30, he and Sen. Haskell reintroduced S. 424, with "minor modifications" as S. 507.[85] According to Sen. Jackson, the title "National Resource Land Management" Act was "a symbolic gesture of respect" to lands neglected, damaged and degraded. Once more the Senator stressed that the legislation fulfilled the tremendous need for BLM to have organic authority and a clear set of goals and objectives for management and use of the public lands "to give focus and direction to the planning process" and correct "the appalling absence of enforcement authority so necessary for any land management agency."[86]

S. 507 contained a concise definition of ACECs: "areas within the national resource lands where special management attention is required to protect important historic, cultural, or scenic values, or natural systems or processes, or life and safety as a result of natural hazards."[87] This definition would have eliminated the necessity of finding irreparable harm to trigger special protective management of an ACEC, a position similar to that ultimately enacted.

As noted earlier, the Report of the Senate Committee on Interior and Insular Affairs on S.507 explained the genesis of ACECs in this way.

---

[80] Callison Report, *supra* note 54, at 8.
[81] *Id.* at 5.
[82] *Id*. at 8.
[83] *Id*.
[84] Callison Report, *supra* note 54 at 8.
[85] SEN. COMM. ON INTERIOR AND INSULAR AFFAIRS, National Resource Land Management Act of 1975, S. REP. 94-583, at 37 (Dec. 18, 1975), *reprinted in* FLPMA LEGIS. HISTORY 102. For the text of S. 507 *see*, VOL. 21, PART 2, CONG. REC. S. 1847 (daily ed. Jan. 30, 1975), *reprinted in* FLPMA LEGIS. HISTORY 54.
[86] VOL. 21, PART 2, CONG. REC. S. at 1857, FLPMA LEGIS. HISTORY 64.
[87] SEN. COMM. ON INTERIOR AND INSULAR AFFAIRS, National Resource Lands Management Act of 1975, S. REP. 94-583, at 2 (DEC. 15, 1975), *reprinted in* FLPMA LEGIS. HISTORY 67.

"'Areas of Critical Environmental Concern' is a new term in relation to the national resource lands, but a term familiar to the Congress. It is found in the Land Resource Planning Assistance Act (S. 984), passed by the Senate in 1972 and 73, and in Clean Air Act amendments under consideration by the Senate Public Works Committee." [88]

The Committee Report confirmed the recommendations of the Public Land Law Review Commission as a source for the concepts embodied in the term ACEC. The Report pointed to three recommendations in particular: Number 27 which calls for the creation and preservation of a natural area system for scientific and educational purposes, Number 78 which urges an "immediate effort . . . to identify and protect those unique areas of national significance that exist on the public lands," and Number 18 which would require "classification of the public lands for environmental quality enhancement and maintenance."[89]

The Committee Report again stressed the importance of ACECs in the BLM planning process, particularly the priority to be given to their identification and protection. "This directive insures that the most environmentally important and fragile lands will be given special, early attention and protection." [90] The Report noted that other uses might be allowed in ACECs, but without "unduly risking" life, safety or permanent damage to the resources and values[91]—i.e., with a margin of safety.

S. 507 passed the Senate on February 25, 1976. The House Interior and Insular Affairs Committee reported a counterpart proposal to S. 507 on May 13, 1976. This bill, H.R. 13777, was called "The Federal Land Policy and Management Act."[92] It mandated that both the Forest Service and BLM inventory the lands under their jurisdictions and develop land use plans.[93] These requirements drew strong objections from both agencies. The Department of Agriculture called the addition of the Forest Service to the legislation unnecessary, given that the agency already had

---

[88] *Id.* at 43, FLPMA LEGIS. HISTORY 108.

[89] *Id.*

[90] *Id.*

[91] *Id.* The Committee emphasized that, unlike wilderness areas, ACECs were not necessarily areas where no development could occur. "[L]imited development, when wisely planned and properly managed can take place in these areas without unduly risking life or safety or permanent damage to historic, cultural or scenic values or natural systems or processes."

[92] Federal Land Policy and Management Act, H.R. 13777, *reprinted in* FLPMA LEGIS. HISTORY 223.

[93] Federal Land Policy and Management Act § 202(a), at 11, *reprinted in* FLPMA LEGIS. HISTORY 233; H. R. COMM. ON INTERIOR AND INSULAR AFFAIRS REP. 94-1163, at 5 (May 15, 1976), *reprinted in* FLPMA LEGIS. HISTORY 435.

sufficient statutory authority to manage its lands. [94] The Department of the Interior stated that the organic act so badly needed by BLM "should not be cluttered by inclusion of authority for other agencies, such as the Forest Service, with different management responsibilities established by separate statutes."[95]

H.R. 13777 offered another variation on the ACEC definition. ACECs were described as "areas within the national resource lands where special management attention is required when such areas are developed or used to protect, or where no development is required to prevent irreparable damage to important historic, cultural, or scenic values, or natural systems or processes, or life and safety as a result of natural hazards."[96]

When the bill reached the floor on July 22 1976, Rep. Melcher proposed an amendment to this ACEC language to insert "fish and wildlife resources" after the word "values" in order to "make clear that protection of fish and wildlife resources may be a basis for designating lands as an 'area of critical environmental concern' deserving special management attention." There was no objection to the amendment and it was approved by a voice vote.[97] The House passed the Federal Land Policy and Management Act on July 22, 1976.

On August 30, a House Senate conference committee convened to reconcile the differences between the two measures, including the title of the act, the inclusion of the Forest Service in the land use planning requirements, and the differences in the definition of ACECs. The conference committee adopted the title "Federal Land Policy and Management Act" instead of "National Resource Lands Management Act," and substituted the term "public lands" for "national resource lands" throughout the bill.[98] The Forest Service was dropped from the planning provisions, except for the direction to the Secretary of Agriculture to "coordinate land

---

[94] Letter concerning H.R. 13777, Federal Land Policy and Management Act of 1975, from Under Secretary of Agriculture Campbell to Rep. James Haley, Chair of the H. Comm. on Interior and Insular Affairs (Oct. 21, 1975), at 37, *reprinted in* FLPMA LEGIS. HISTORY 467.

[95] Letter concerning H.R. 13777, Federal Land Policy and Management Act of 1975, from Asst. Secretary of the Interior Horton to Rep. James Haley, Chair of the H. Comm. on Interior and Insular Affairs (Nov. 21, 1975), at 42, *reprinted in* FLPMA LEGIS. HISTORY 472.

[96] H.R. COMM. ON INTERIOR AND INSULAR AFFAIRS, Federal Land Policy and Management Act of 1976, H.R. REP. NO. 94-1163, at 6 (May 15, 1976), *reprinted in* FLPMA LEGIS. HISTORY 330.

[97] Callison Report, *supra* note 54, at 8.

[98] Joint Statement of the Conference Committee, CONF. REP. NO. 94-1724, at 57 (Sept. 29, 1976), *reprinted in* FLPMA LEGIS. HISTORY 927.

use plans for lands in the National Forest System with the land use planning and management programs of and for Indian tribes."[99]

The Committee relied on the definition of ACECs in H.R. 13777, with two important additions. The words "protect and" were added before the phrase "prevent irreparable harm," making it clear that Congress intended priority to be given to designating areas where special management attention was required to both protect their special attributes and prevent irreparable harm. In addition, parentheses were placed around the phrase "when such areas are developed or used or where no development is required."[100] In many earlier definitions of ACECs, the reference to preventing "irreparable damage" (or irreversible damage) was consistently linked to areas where no development was allowed – as though the possibility of prohibiting development was only appropriate when necessary to prevent irreparable harm. The final language in FLPMA eliminated this linkage, and imposed the duties to both protect *and* prevent irreparable harm to all ACECs, whether they "are developed or used or where no development is required."

With these, and other issues of dispute not relevant to ACECs or planning, resolved, the conference report was accepted in the House on September 30 and in the Senate on October 1, 1976. President Ford signed FLPMA into law on October 21, 1976.[101]

The final definition of ACECs in FLPMA is: "Areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards."

C. Lessons from the Legislative History

The history of FLPMA shows the engagement of the Department of the Interior, particularly BLM, throughout the development of the statute. The Department provided concepts, language and process recommendations to the crafting of organic authority that ended the general policy of disposal of public lands and put in place a framework for retaining, managing and protecting the marvelous array of lands and resources under its jurisdiction. Areas of Critical Environmental Concern were strongly promoted by the Department, and embraced by the Congress, as a vital statutory tool in that effort.

---

[99] *Id.* at 929; FLPMA § 202(b) (43 U.S.C. § 1712(b)).

[100] CONF. REP. NO. 94-1724, at 4, *reprinted in* FLPMA LEGIS. HISTORY 874.

[101] *Memorandum of the Chairman of the Senate Committee on Energy and Natural Resources*, FLPMA LEGIS. HISTORY v.

Although the term ACEC had a number of definitions as the concept worked its way through the legislative proposals that ultimately became FLPMA, several principles remained constant, and are embedded in the meaning and intent of the statute today. The purpose and goal for ACECs is to "insure[] that the most environmentally important and fragile lands will be given special, early attention and protection."[102] It is evident from the increasingly protective language that evolved through three Congresses that Congress intended to accord ACEC designation and protection temporal, procedural and substantive precedence in BLM's planning and management. The agency was directed to identify areas that might qualify for ACEC designation as a first order of business in the inventory process. As a substantive matter, although other uses might be allowed in ACECs, BLM was to determine appropriate management prescriptions "to protect *and* prevent irreparable damage"[103] to the resources and values for which the ACEC designated (emphasis added). Congress changed the wording specifically to eliminate the previous linkage between protecting areas only if necessary to avoid irreparable harm. The enacted language authorizes special management to restrict or eliminate development both to avoid irreparable damage and to protect ACECs, thereby imposing two management standards on BLM: a special duty to protect ACECs, even in the absence of activities that might cause irreparable harm, and the duty to actually prevent such harm from occurring.

V. AGENCY INTERPRETATION OF ACECs

There are so many Departmental directives and guidance and BLM documents interpreting FLPMA[104] that attempting to determine exactly which BLM planning and management provisions apply to an ACEC can feel like assembling a 500 piece puzzle without an overall picture to go by. The consequences of the agency's decentralization and fragmentation will be discussed in the "Observations from the Field" and "Recommendations" sections of this article. This section examines only the agency regulations and guidance affecting ACECs, and reviews the extent to

---

[102] SEN. COMM. ON INTERIOR AND INSULAR AFFAIRS, National Resource Lands Management Act of 1975, S. REP. 94-583, at 43 (Dec. 15, 1975), *reprinted in* FLPMA LEGIS. HISTORY 108.

[103] FLPMA § 1702(a), 43 U.S.C. § 1702(a) (1976).

[104] *See e.g.*, Departmental Strategic Plan, Secretarial Orders, Departmental Manual, BLM Strategic Plan, Guidance and Direction from the BLM Director and from State Directors, Regulations, BLM Manual, BLM Handbooks, other Guidance, and Instructional Memoranda.

which they comport with the language of FLPMA and its legislative intent.

A. The Disappearance of Statutory Requirements

The first post-FLPMA regulations were proposed during the Carter Administration on December 15, 1978[105] and finalized on August 7, 1979. [106] In between these dates, draft policy and guidance on the designation and management of ACECs was issued.[107] Final ACEC Guidelines were published on August 27, 1980.[108] The Guidelines addressed many crucial aspects of ACECs, including definitions of "protect" and "priority" and provisions to implement them. BLM described the Guidelines as "a good start in carrying out a potentially significant mandate of the Federal Land Policy and Management Act."[109] It is not clear whether these Guidelines are still in effect, or, if not, when they were rescinded. In either event, they are neither referred to nor applied in any current agency materials. New regulations were issued on December 16, 1980,[110] but never finalized.

Administrations changed in January, 1981.[111] The Reagan Administration proposed new FLPMA regulations on November 23, 1981, seeking to "to delete burdensome, outdated and unneeded regulations"– including almost all of those relating to ACECs.[112] Final FLPMA regulations were published on May 5, 1983,[113] and basically remain in effect today. An ACEC "Handbook," BLM Manual § 1613, was issued on September 29, 1988.

The treatment of ACECs changed markedly from the regulations, policies, and guidance promulgated soon after the enactment of FLPMA to the regulations and guidance currently in effect. The first FLPMA regulations in 1979 and the Guidelines of 1980 included more substantive requirements for ACECs. These strong provisions were to have been put into the new regulations, but were not. Nor were they incorporated in the

---

[105] 43 Fed. Reg. 58764 (proposed Dec. 15, 1978).
[106] 44 Fed. Reg. 46386 (Aug. 7, 1979).
[107] 44 Fed. Reg. 32590 (proposed June 6, 1979).
[108] 45 Fed. Reg. 57318 (Aug. 27, 1980).
[109] 45 Fed. Reg. 57320.
[110] 45 Fed. Reg. 82679 (proposed Dec. 16, 1980).
[111] Implementation of FLPMA occurred during the transition from President Jimmy Carter to President Ronald Reagan and from Interior Secretary Cecil B. Andrus (1977-1981) to Interior Secretary James G. Watt (1/23/1981 – 11/8/1983). These political changes resulted in changes to post-FLPMA regulations in general, and to ACECs in particular. The 1983 regulations are generally in effect today, supplemented twice in 2005, primarily to add provisions related to environmental documentation and processes.
[112] 46 Fed. Reg. 57448 (proposed Nov. 23, 1981).
[113] 48 Fed. Reg. 20368 (May 5, 1983).

last regulations proposed during the Carter Administration in December, 1980. As noted, the Reagan Administration issued different regulations when it took office. After 1981, the 1980 Guidelines disappeared and ACEC provisions were either weakened or removed from the regulations, scattered among sections of the BLM Manual which were later relocated (except for BLM Manual § 1613 – the ACEC "Handbook") to Appendix C of the Planning Handbook (BLM Manual § 1601-1), and later deleted from that document as well. Currently, the term "ACEC" does not even appear in the BLM Glossary of Terms.

As explained in the frontnote on page one of this article, unless otherwise stated, the analysis and citations in this article to "current" BLM planning regulations are to the regulations in effect in 2015. In 2014, BLM began to revise its land use planning regulations, a process the agency dubbed the "Planning 2.0 Initiative." This effort included a review of the regulations and guidance for ACECs. New planning regulations were proposed early in 2016.[114] A final version of these new planning regulations was issued in December of 2016 and became effective January 11, 2017.[115] However, on March 7, 2017, Congress voted to rescind these regulations,[116] pursuant to the Congressional Review Act.[117] Although the President has not yet signed this Joint Resolution into law, there is little doubt that he will. Consequently, all references to the current regulations remain correct. Even If the President does not sign the Joint Resolution and the 2016 regulations stand, this article still provides valuable history on the enactment and current implementation of the ACEC provisions in FLPMA.

The regulations in effect in 2015 and BLM's land use plans reflect an agency preference for discretionary management choices over enforceable regulatory requirements. In the ACEC context BLM frequently avoids designating ACECs in favor of other administrative classifications. [118] The reasons offered by agency planners for this preference in-

---

[114] 81 Fed. Reg. 9674 (proposed Feb. 25, 2016).

[115] 81 Fed. Reg. 89580 (Dec. 12, 2016), effective January 11, 2017. (Rescinded on March 7, 2017 by H.R.J. 44. *See* text above and notes 116 and 117).

[116] H.R.J. Res. 44, 115th Cong. (2017).

[117] 5 U.S.C, §§ 801-808 (1996). Congressional disapproval procedures are set forth in § 802.

[118] BLM has used various labels to identify priority habitat areas or movement corridors for wildlife protection. The 2007 RMP for the Lake Havasu Field Office in Arizona refers to "Wildlife Habitat Areas" and "Wildlife Movement Corridors" (pp 18-21 and Map 9). A more recent designation is "Crucial Habitat" for areas necessary for the survival of sensitive species. This term is derived from the "Crucial Habitat Assessment Tool (CHAT), an initiative of the Western Governors Association. The plans for the Greater Sage Grouse rely on "Priority Habitat" areas. None of these administrative classifications are called for by FLPMA or any other statute and many are areas that appear

clude the difficulty of changing an ACEC once it is designated, and political opposition among the agency's constituents to the label "area of critical environmental concern."

B. Deficiencies in Current Regulations and Guidance

The 2015 regulations and administrative guidance for ACECs suffer from the following shortcomings: 1) lack of visibility; 2) failure to require inventory and data collection; 3) abridged treatment in planning criteria; 4) absence of consistent information in Resource Management Plans; 5) omission of statutory priorities; 6) and misconstrued protection obligations. The current regulations and guidance also 7) miss the opportunity to deal effectively with FLPMA's consistency provisions, and 8) to support a significant role for ACECs in landscape level planning and management.

1. Lack of Visibility of ACECs

ACECs have gone from being an exceptional part of FLPMA, and a prominent feature of early FLPMA regulations and guidelines, to being nearly absent from BLM's administrative materials. Only one current regulation specifically relates to ACECs, and their statutory priorities are not expressly stated at all. Aside from BLM Manual § 1613, ACECs are barely mentioned in other agency documents, and information on ACECs is now obtainable primarily by reading the statute itself.

ACECs are also conspicuously missing from BLM's budget requests. To secure funding for its operations, BLM prepares a budget justification as part of the Department of the Interior's request to the Congress for financial support. BLM's budget document, like those of other Interior Department agencies, is primarily organized by "goals and activities," which are described under "program" headings. Section 311 of FLPMA[119] requires an annual report to be submitted to Congress to assist in its responsibilities for oversight of the public lands. This report is to include information, evaluations, and budgetary information on public land *programs*.

Because BLM does not currently consider ACECs to be a program, there is no description of them in the agency's budget justification, and no mention of the funds needed for the priority ACEC activities of inventorying, designation, planning or protection. Indeed, in the Department of the Interior's more than 400 page 2016 budget justification, ACECs are

---

suitable for ACEC designation. Although BLM may use different terms, perhaps because of cooperation with state or federal wildlife agencies, ACEC protection is not precluded and may provide additional desired management.

[119] FLPMA, 43 U.S.C. § 1741.

mentioned only once—when funds were requested for land acquisitions for particular ACECs.[120]

BLM Manual §§ 1613.22 and 1613.3 require that management prescriptions for a potential ACEC be developed and discussed in detail in draft RMPs or amendments. Our review of RMPs showed that there is considerable variation in the amount and clarity of information provided in both plans and Records of Decision (RODs). State office websites differ widely, as well, in whether and how they provide information on ACECs to the public. In addition, BLM Manual § 1613.65 requires each BLM state Director to submit an Annual Report on all ACECs within a state to the Director of BLM. These Annual Reports are not uniformly being prepared or sent to the Director, leaving the national office of BLM without an accurate, centralized ACEC data base.

As a result, it is difficult to determine how ACECs were intended to be, and actually are being managed. The lack of visibility of ACECs in BLM regulations, the BLM Manual, the budget justification, and online sites likely translates into fewer ACEC designations, reduced funding for ACEC data collection and management, and a greater probability that ACECs will not receive the priority Congress intended in the inventorying, designation and protection phases of planning.

2. Failure to Require Inventory Data Collection and Identification of ACECs

FLPMA directs that priority be given to ACECs in the inventory of public land resources and values.[121] Designation of a potential ACEC[122] is based on inventory data demonstrating that an area meets the criteria necessary for designation; yet there is currently no requirement that inventory data on ACEC values in potential areas actually *be* collected.

The BLM Manual states that "[A]ll areas which meet the relevance and importance criteria must be identified as potential ACECs and fully considered for designation and management in resource management

---

[120] Available through the DOI website, or at www.doi.gov/budget/appropriations/2016/upload/FY2016_BLM_Greenbook.pdf. Last accessed June 27, 2015.

[121] FLPMA § 201(a), 43 U.S.C. § 1711(a) and BLM Manual § 1613.33 (1988) require a detailed description of the resources and values of potential ACECs.

[122] 43 C.F.R. § 1610.7-2(a)(1), (2) (2015). Potential areas must meet two criteria. They must be "relevant" – have a "significant historic, cultural, or scenic value; a fish or wildlife resource or other natural system or process; or natural hazard." They must also have "importance" – have "substantial significance and values. This generally requires qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern. A natural hazard can be important if it is a significant threat to human life or property."

planning. Information and data on the criteria will usually be obtained from inventory and data collection… [and other sources]."[123] This circular statement falls short of requiring that collection of appropriate inventory data on ACEC resources and values be carried out, and on a priority basis.[124]

The absence of an express mandate to inventory and collect data on areas with possible ACEC resources and values is significant because those activities may be conducted by non-BLM personnel who need to be aware of the FLPMA duties. And the adequacy of inventory data relates directly to the place of ACECs in planning. Together, the two concepts complete a circle: to be included in planning an area must meet the criteria for possible designation as an ACEC, a determination that rests on whether there is inventory data indicating that an area qualifies—data that might not be collected. This circularity occurs throughout all categories of agency documents.[125]

3. Abridged Role of ACECs in Planning

The current (1983) regulations significantly changed the former planning regulations, especially as to ACECs. Although some of the general features of planning remained the same, the specific directions regarding potential ACECs were removed or modified.[126] The permissive language about "considering" ACECs, rather than according them priority throughout planning, was retained. All express statements of the priorities to be given ACECs were omitted. The omission was justified in part as making the planning process more streamlined and responsive to program needs.[127] The separate requirement for public comment on the planning criteria (which included guidance on ACEC designation) was eliminated. Some planning criteria were deleted and relegated to "guidance for the program involved," but details on ACECs were removed from these documents as well. Other provisions were excised as being operational in nature and more appropriate for inclusion in the BLM

[123] BLM Manual § 1613.21.

[124] Ironically, several of the RMPs reviewed for this report mentioned that inventorying cultural resources in the planning area was a priority under the National Historic Preservation Act, but did not mention the priority for inventorying ACEC resources under FLPMA.

[125] The 1979 regulations at 43 C.F.R. § 1601.5-4(b) stated that "*In all cases,* the inventory data shall be analyzed to determine whether there are areas containing resources, values, systems or process or hazards eligible for further consideration for designation as an ACEC…." (emphasis added). This language came close to establishing a priority for ACECs in the inventory process, but was removed in 1983.

[126] *Compare* 44 Fed. Reg. 46386, 46398 (Aug. 7, 1979) *with* proposed regulations at 46 Fed. Reg. 57448, 57449 (Nov. 23, 1981) *and* final regulations at 48 Fed. Reg. 20364, 20367 (May 5, 1983).

[127] 46 Fed. Reg. 57448 (Nov. 23, 1981).

Manual or other directives. The regulation on analysis of the management situation was modified "to ensure that this process does not generate analysis beyond that needed to address management issues." [128]

The current planning regulations do not describe the statutory priorities for the designation and protection of ACECs, but simply cross-reference the principles of § 202 of FLPMA.[129] Similarly, BLM Manual § 1601-1 notes that FLPMA statutory mandates "will influence agency priorities," and sets out several examples, but does not mention the ACEC priorities.[130] Thus, although the ACEC priorities are alluded to indirectly, they are out of sight.

The current regulations call for areas having potential for ACEC designation to be "identified and *considered* throughout … [planning],"[131] but do not state that designation is a priority and, therefore, should always be a "planning issue." Determination of the relevant planning issues is the first step on which subsequent planning processes depend.[132] Although issues may be modified, and a potential ACEC may be nominated and identified for consideration at any time if inventory data gathering or other evidence indicates an area may meet the criteria,[133] subsequent planning usually builds on the issues identified in the first step. And in practice, issues are initially derived from a "pre-planning preparation plan" developed by BLM staff.

The failure to specify that ACECs are always a planning issue is important, because the next step in the planning process is for the Field Manager to *tailor planning to issues previously identified,* and avoid *unnecessary data collection and analyses*.[134] Again, a circularity is set up –

---

[128] *Id*.

[129] 43 C.F.R. § 1601.0-8 (2015).

[130] BLM Manual § 1601-1 IV. E. 2a 2 (2005) (This portion of the Manual is known as the Land Use Planning Handbook).

[131] 43 C.F.R. § 1610.7-2 (2015) (emphasis added).

[132] Under 43 C.F.R. § 1610.4-1 (2015) the public, other agencies, and groups may suggest topics or concerns for the planning process. Manual §§ 1613.21 and .41 provide that anyone can nominate an area for consideration as a potential ACEC and such recommendations "are actively solicited at the beginning of a planning effort." There are no formal procedures associated with nominations or recommendations and no special forms or other submission requirements for identifying potential ACEC's. However, the public "should be advised that nominations should be accompanied by descriptive materials, maps, and evidence of the relevance and importance of the resources or hazards in order to facilitate a timely evaluation."

[133] 43 C.F. R § 1610.1(c) (2015), BLM Manual § 1613.21C. The initial evaluation of each resource or hazard to determine if it meets ACEC criteria is done by an interdisciplinary team with skills appropriate to the values involved and the issues identified. In practice, this interdisciplinary team usually will evaluate a group of potential ACECs as part of the planning process.

[134] 43 C.F.R § 1610.4-2 (2015) (emphasis added).

all subsequent planning rests on a matter being identified as an issue, yet ACECs need not be noted as such. Similarly, new information and inventory data collection "will emphasize significant issues and decisions with the greatest potential impact" and be conducted "in a manner that aids application in the planning process, including subsequent monitoring requirements." [135] Therefore, unless it is clear that ACEC are a required planning issue, and a priority one, they are unlikely to receive the priority treatment in planning directed by FLPMA.

The Field Manager is to analyze the inventory data and other available information to determine the capability of a resource area to respond to *identified issues and opportunities*. This "analysis of the management situation" provides the basis for formulating reasonable alternatives for further planning and for compliance with NEPA.[136] Although uses and protection authorized by FLPMA and other relevant legislation may be "considered,"[137] once again there is no mention in the planning regulations of the *priority* that FLPMA directs be given to ACECs.[138]

If a proposed ACEC designation is included in an approved draft resource management plan, revision, or amendment, the State Director must publish a notice in the Federal Register listing each proposed ACEC and "specifying the *resource use limitations*, if any, which would occur if it were formally designated"[139] (emphasis added). There is no similar requirement to describe the special *resource values* of the proposed ACEC. Although a 60-day public comment period must be offered, it is not clear how the public can understand the decisions to be made if the notice discusses only the restrictions and not the values of the area that might be lost. According to the BLM Manual § 1613, publication of a proposed plan containing similar information may satisfy the notice requirement.[140] Our review of RMPs showed that adequate information on ACEC values and management is not uniformly provided.

A State Director's approval of a plan, revision, or amendment containing an ACEC constitutes formal designation of the ACEC.[141] By implication, de-designation, or a decision "not to carry forward" an existing ACEC must also be done through plan revision or amendment. Existing ACECs are reconsidered in new or revised RMPs, and BLM Manual §

---

[135] 43 C.F.R § 1610.4-3 (2015).

[136] 43 C.F.R. § 1610.4-4 (2015); National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852, 42 U.S.C. § 4332(C) (Jan. 1, 1970).

[137] 43 C.F.R § 1610.4-4 (2015).

[138] *Compare* 43 U.S.C. § 1712(c)(3), (5) *and* (6) (2012).

[139] 43 C.F.R. § 1610.7-2(b) (2015). Additional requirements for these special notices are stated in BLM Manual § 1613.32.

[140] *See* BLM Manual § 1613.33.

[141] 43 C.F.R. § 1610.7-2 (b) (2015).

1613.32 states that RMPs or amendments "should" also identify potential ACECs that are not proposed for designation and explain why. "Maintenance" (minor) decisions can be made to adjust activities to conform to plan requirements, but expansion of the scope of resource uses or restrictions, or a change in the terms and conditions of an approved RMP may only be accomplished through plan amendments or revisions.[142]

An RMP must establish intervals and standards for monitoring and evaluation of the plan, based on the sensitivity of the resource to the decisions involved. It must also provide for an assessment to determine whether mitigation measures are satisfactory, whether there have been significant changes in the related plans of other federal agencies, state or local governments, or Indian tribes, and whether there is new data of significance to the plan. The Field Manager is responsible for this monitoring and evaluation, in accordance with the established intervals and standards, or at other times as appropriate.[143]

In sum, the current planning regulations contain no express statement of the statutory priorities for ACECs, and no explicit requirement that ACECs always be a planning issue and receive priority in inventorying and data collection. Rather, the regulations rely solely on a cross reference to § 202 of FLPMA to incorporate the priority principles for ACEC planning. This failure to provide explicit and visible priority for ACECs in planning may result in a lack of adequate funding for ACEC data collection and management, a failure to adequately consider some areas with ACEC potential, and a failure to designate and protect them.

4. Absence of Consistent Information in Resource Management Plans

The current regulations do not require uniform, consistent information on ACEC values and management prescriptions to be presented in Resource Management Plans. Finding information on the management of an ACEC may be a challenge. As discussed in detail in Section VI, Observations from the Field, our review of RMPs showed substantial variation in how much information on ACECs is offered and where it is located in an RMP. Moreover, although proposed RMPs and the Records of Decision (RODs) that finalize them are generally available online, amendments to RMPs may not be published, so the information in a posted RMP may not be up to date. Significant pieces of the management picture may not be in the Plan.

---

[142] 43 C.F.R. §§ 1610-5, § 1610.5-6 (2015).
[143] 43 C.F.R. § 1610.4-9 (2015).

5. Omission of Statutory Priorities for ACECs

As discussed in Section III B, the *Classification and Multiple Use Act*, the first regulations implementing the CMUA noted that the Act did not call for giving priority to any particular uses of the public lands and, therefore, none would be given priority.[144] By contrast, FLPMA expressly set out priorities for inventorying, designating, and protecting ACECs, but these priorities have not been implemented.

BLM's current regulations and guidance do not define "priority." "Priority" can mean either procedural priority—*i.e.,* certain and early consideration, or substantive priority—*i.e.,* greater weight in decision-making processes, or both.[145] The 1980 ACEC Guidelines defined priority as "[a] preferential rating or ranking, or prior attention in terms of time and precedence, for allocation of services or resources in limited supply."[146] The call for a preferential ranking for "allocation of resources in limited supply" indicates that priority was meant to have a substantive, as well as procedural meaning. This interpretation comports with BLM's regulatory efforts from 1965-1970 which moved toward specifying priority for environmentally sensitive areas, and with congressional intent to provide substantive, as well as procedural priority.

Present regulations are nearly silent on the ACEC statutory priorities, in contrast to the early regulations and agency guidance.[147] Some current BLM guidance treats ACECs favorably. For example, BLM Manual § 1613.06 states that the ACEC

> is the principal BLM designation for public lands where special management is required to protect important natural, cultural, and scenic resources or to identify natural hazards. Therefore, BLM managers will give precedence to the identification, evaluation, and designation of areas which require special management attention during resource management planning.

---

[144] 30 Fed. Reg. 2384-2385 (Feb. 20, 1965).

[145] Webster's New World Dictionary, Third College Edition (1988) defines priority as: **1)** the fact or condition of being prior; precedence in time, order, importance, etc. **2)** (a) a right to precedence over others in obtaining, buying, or doing something, (b) an order granting this, as in an emergency **3)** something to be given prior attention. *Priority*, YOURDICTIONARY.COM, http://www.yourdictionary.com/priority#websters (last visited Sept. 30, 20016).

[146] 45 Fed. Reg. 57323 (Aug. 27, 1980).

[147] The 1980 Guidelines expressly required priority attention be given to the identification of important environmental resources and natural hazards on BLM lands during the identification of planning issues, development of planning criteria, and inventory data and information collection phases of the resource management planning processes. The Guidelines also concluded that ACEC designation was not merely a way of recognizing or "highlighting" areas, but required management restrictions as well.

However, other sections of BLM Manual § 1613 repeatedly refer to "highlighting" ACEC areas through designation, or to overriding their designation. BLM Manual § 1613 states that one of the questions to ask when evaluating a potential ACEC is whether "the values of other resources outweigh the need for protection of important values." If a planning choice "would necessitate the sacrifice of the potential ACEC values to achieve other purposes" then an area will not be designated. Neither of these provisions mentions the priority to be given the designation and protection of ACECs, or indicates that priority was taken into account in the decision. Rather, protecting a potential ACEC seems to be considered as just one multiple use among many.

The 1980 Guidelines attempted to come to grips with the crucial issue of how to accord priority to ACECs in decisionmaking, and reasoned that ACEC designations had to be made on "the basis of a determination as to which of the alternative possible uses for the important environmental resources involved will best serve the public interest…."[148] In evaluating the impacts of other uses on a qualifying ACEC, the Guidelines stated that actions and uses inconsistent with ACEC protection could be allowed if "the public benefits of such an action outweigh the public benefits of continuing the ACEC protection, and that there is no feasible alternative to the proposed inconsistent action ….," a decision with which the State Director had to concur.

> No use or action that would be inconsistent with an ACEC's special management requirements or that would adversely impact an ACEC-protected resource shall be permitted unless the District Manager, after considering all pertinent factors, including the results of environmental analysis and public comment, makes the following findings: (1) The public benefits of the proposed incompatible action clearly outweight [sic] the public benefits of continuing protection of the ACEC-protected resource; (2) There is a clear public need for the proposed action and such action is clearly in the public interest; (3) There is no feasible alternative to, or alternative location for, the proposed action, and (4) Such action includes all feasible planning and management requirements to prevent, minimize, mitigate, or restore the effect of adverse impacts. [149]

---

[148] 45 Fed. Reg. 57322 (Aug. 27, 1980).

[149] *Id.* This language is similar to the requirements in 23 U.S.C. § 138 for a decision to route a road through a national park.

The failure of the current regulations to accord ACECs their statutory priorities makes it difficult to enforce their status, and the failure to define "priority" as having both substantive and procedural aspects weakens ACECs significantly. There is evidence in both the agency and legislative records that the term priority was intended to be procedural *and* substantive. Given the number of factors BLM must consider and balance in planning and management decisions, a vague or limited concept of priority for ACECs is likely to result in ACEC designations and protections being outweighed by other factors, to their detriment and contrary to congressional intent.

6. Misconstrued Protection Obligations

ACEC designations are more than an honorary status. They are, by definition, areas where special management attention is required to both "protect *and* prevent irreparable damage" of the area's resources and values.

FLPMA provides generally for the protection of the public lands. It is the policy of the United States:

> to manage the public lands in a manner that will "*protect* the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values that, where appropriate, will preserve and *protect* certain public lands in their natural condition, that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use…."[150]

FLPMA also directs that all public lands be managed to "prevent unnecessary or undue degradation of the lands."[151]

These duties clearly relate to the protection of ACECs. Given that FLPMA imposes general duties to protect the public lands, the inclusion of *particularized* language directing the protection of the distinct values of ACECs through "special management attention" indicates that Congress meant that heightened protection was to be given to them. While some RMPs do provide an increased level of protection for ACECs, several of the plans reviewed for this article expressed the view that "protect" with reference to ACECs means simply the same duty owed the public lands in general, and, therefore, the ACEC designation is called

[150] FLPMA, § 102(a)(8), 43 U.S.C. § 1701(a)(8) (2012) (emphasis added).
[151] FLPMA, § 302(b), 43 U.S.C. § 1732(b).

for only when necessary to prevent irreparable damage. Congress rejected this constrained interpretation in the final version of FLPMA.[152]

At times, BLM Manual § 1613 uses protective language for ACECs: *e.g.,* management actions "near or within an ACEC" must accommodate their special values; designation may support a funding priority;[153] and management prescriptions "should" receive priority for implementation.[154] BLM Manual § 1613 also describes monitoring as "essential for ensuring the protection of ACEC values and resources,"[155] and "given the FLPMA priority for ACECs, an ACEC implementation schedule must be prepared for each ACEC that identifies the priority, sequence, and costs of implementing activities to protect the ACEC resources or values, including monitoring."[156] Monitoring should be based on the sensitivity of the resource in question. Since ACECs "are assumed to be sensitive" careful monitoring is critical.[157]

Other BLM Manual provisions fail to accord ACECs protection and priority, especially in decisionmaking. Some refer to "highlighting" ACECs, which may connote a non-substantive, recognition status. Several relate to analyzing the management situation, developing planning criteria to evaluate potential ACECs, and making decisions. Some provisions impose dubious constraints. For example, a potential ACEC must be considered in relation to other resources or activities – a reasonable approach under multiple use-sustained yield principles, but questionable given that ACECs are to take precedence. Planners are to consider what uses are compatible with a potential ACEC, and under what conditions, as well as what uses are not compatible with ACEC values, even when conditioned. But then the planner is directed to decide "considering the objectives of the RMP alternative, do the values of other resources outweigh the need for protection of the important and relevant values [of the ACEC]?" Further, the planner is asked to determine what measures can be taken to protect and/or restore potential ACEC values "without restricting other resource uses" and whether it is "feasible to protect the resource value(s)."[158] "Feasible" is not defined, nor is there any elaboration

---

[152] *See, e.g.,* the 2008 Monticello, Utah Record of Decision and RMP at 16 and 31-32 stating that ACECs are designated where special management attention is required to "prevent irreparable harm," and noting that since standard management protects the relevant and important values in the planning area, only seven ACECs were designated where special management is necessary to avoid such irreparable harm.

[153] BLM Manual § 1613.02.

[154] BLM Manual § 1613.12.

[155] BLM Manual § 1613.6.

[156] BLM Manual § 1613.61.

[157] BLM Manual § 1613.63.

[158] BLM Manual § 1613.22A.3.

on how "feasible" relates to weighing the potential ACEC designation against limitations on other uses.

The ACEC priorities are not mentioned in these decision-making provisions. And there is no definition of "protect" in current agency regulations or guidance. The 1980 Guidelines defined "protect" as meaning:

> To defend or guard against damage or loss to the important environmental resources of a potential or designated ACEC. This includes both damage that can be restored over time and that which is irreparable….[159]

The 1980 Guidelines also provided that no use or action that would be inconsistent with an ACEC's special management requirements, or that would adversely impact an ACEC-protected resource, would be permitted unless the manager made certain findings.[160] See the "Priority" section, *supra*.

The legislative history of FLPMA sheds light on what was meant by the duties to "protect and prevent irreparable damage." Early FLPMA bills consistently linked "prevention of irreparable damage" to those ACECs in which no development was to be allowed – as though development could be prohibited only if necessary to prevent irreparable harm. FLPMA eliminated this linkage and stated that ACEC-related protective duties applied not only to areas where no development was allowed, but also to areas where some development could be approved. The enacted language allows a 'no development' approach where necessary to protect ACEC values, imposes broader duties, and provides stronger management options than did previous iterations.

The effects of ACEC designation on particular land uses will vary depending on the particular proposed uses, the values for which the ACEC was designated, and the special management provisions necessary to protect them, but clearly some other uses and activities may be allowed. The Senate Report on S. 507 stated:

> The Committee wishes to emphasize that unlike wilderness areas to be designated pursuant to section 103(d) 'areas of critical environmental concern' are not necessarily areas in which no development can occur. Quite often, limited development, when wisely planned and properly managed, can take place in these areas *without unduly risking life or safety or permanent damage* to his-

---

[159] 45 Fed. Reg. 57318, 57323 (August 27, 1980).
[160] *Id.* at 57328.

> toric, cultural, or scenic values or natural system or processes.[161]

Even this 1975 language – written before the final language of FLPMA expressly decoupled management restrictions from a necessity to prevent irreparable harm – contemplated that a margin of safety should be built into the protection of ACECs. It is evident from the repeated provisions with which Congress addressed ACECs that "protect" in the ACEC context means to give greater protections than otherwise might be the case for public lands in general. "Special management" is required to safeguard the important resources and values of an ACEC. Many of these resources are rare or fragile, represent an aspect of history, or play a pivotal role in an ecosystem. By creating the ACEC designation, by specifically directing that the important resources and values of ACECs be defended, and by affording ACECs priorities in planning, it is evident that Congress intended that proposed uses in them be carefully reviewed and either barred entirely or restricted through "special management" that secures a margin of safety to avoid unduly risking degradation or permanent damage.

7. Unfavorable Response to Consistency Provisions

The "consistency" provisions of § 202(c)(9)[162] of FLPMA may affect the use of ACECs and interact with the priorities that should be accorded them. These provisions require that plans developed by the Secretary be consistent with state, local, and Tribal plans "to the maximum extent he finds consistent with Federal law and the purposes of this Act."[163]

Although land use planning processes for the BLM and the Forest Service were intended to be similar, there are no comparable consistency requirements in the National Forest Management Act. Nor do the Forest

---

[161] SEN. COMM. ON INTERIOR AND INSULAR AFFAIRS, National Resource Lands Management Act of 1975, S. REP. 94-583, at 43 (Dec. 18, 1975), *reprinted in* FLPMA LEGIS. HISTORY 108 (emphasis added).

[162] 43 U.S.C. § 1712(c)(9).

[163] *Id.* The Secretary is to coordinate the land use inventory, planning, and management activities for the public lands with the land use planning and management programs of other federal departments and agencies, state and local governments, and with Tribes. "To the extent practical" the Secretary is to keep apprised of such plans, assure that germane plans are considered, assist in resolving inconsistencies between federal and non-federal plans, and provide for meaningful public involvement of state and local government and Tribal officials, both elected and appointed, in the development of land use programs, regulations, and land use decisions for the public lands. The officials may advise the Secretary on plans, guidelines, rules and regulations, and other land use matters he refers to them. Most importantly, "[l]and use plans … shall be consistent with State and local plans to the maximum extent [the Secretary] finds consistent with Federal law and the purposes of this Act."

Service's regulations allow an equivalent level of input or control over agency decisions from external entities.[164]

BLM regulations implementing the statutory consistency requirements include extensive additional detail and requirements. Among other things, the regulations give outside officials, especially governors of relevant states, considerable authority to challenge BLM management decisions as inconsistent with state purposes, policies, and programs.[165] Such BLM decisions expressly include uses allowed and constraints imposed—topics obviously relevant to ACECs and other conservation areas. However, although BLM guidance and resource management plans and amendments must be "consistent with officially approved or adopted resources related plans, and the policies and programs contained therein, for other Federal agencies, State and local governments and Indian tribes," compliance is only required "so long as the guidance and resource management plan are also consistent with the *purposes, policies and programs of Federal laws and regulations applicable to public lands*…."[166]

These statutory and regulatory consistency provisions can result in significant pressure on BLM planners and managers to avoid discretionary decisions that would curtail or constrain uses of the federal lands. If ACECs were interpreted to better reflect the priorities and protections intended by Congress, and especially if BLM were to consider them to be a land management "program," ACECs could be an especially helpful tool

---

[164] The Forest Service regulations require outreach to other agencies, the public, Tribes, and state and local governments, as well as consultation, coordination, and cooperation under NEPA. But the regulations state that nothing in the outreach section "should be read to indicate that the responsible official will seek to direct or control management of lands outside of the plan area, nor will the responsible official conform management to meet non-Forest Service objectives or policies" – a very different posture from that taken in the BLM regulations. 36 C.F.R. § 219.4(b)(3)) (2015).

[165] BLM regulations provide that State Directors should seek the policy advice of the relevant Governor(s) on many issues, including "the multiple use opportunities and constraints on public lands." (43 C.F.R. § 1610.3-1(c)(2015)). State Directors must ensure that guidance provided to Field Managers is as consistent as possible with existing officially adopted and approved resource related plans, policies or programs… of State agencies, Indian tribes, and local governments that may be affected. . . ." 43 C.F.R. § 1610.3-1(d) (2015). Governors may identify inconsistencies between provisions in a proposed RMP or amendment and state, local, policies or programs, and provide recommendations to a State Director to resolve them, which must be considered under formal procedures, and which the State Director shall accept "if he/she determines that they provide for a reasonable balance between the national interest and the State's interest." 43 C.F.R. § 1610.3-2(e) (2015).

[166] 43 C.F.R. § 1610.3-2(a) (2015).

for managers to *resist* consistency pressures to allow uses that might damage important resources on the public lands.[167]

8. Missed Opportunity for ACECs in Landscape-level Planning

If ACECs are accorded the priorities that FLPMA directs, they could play a more important role in future land use planning. In recent years, both the BLM and the Forest Service have moved toward planning for larger management areas, often referred to as landscape-level or ecosystem planning. BLM historically has managed large land areas, including scenic, natural areas, and primitive areas.[168] Multiple use-sustained yield management under FLPMA may involve expansive areas and natural processes as well. Mixed land ownerships – such as state lands, tribal lands, and private lands – combined with overarching goals such as open space, water allocation, endangered or threatened species habitats, etc., that often necessitate multi-jurisdictional management of resources--have provided additional impetus to engage in broader scale planning.

The Beaver Dam Slope resource area is an example of coordinated planning and management. There are three contiguous ACECs with that name in three states (Nevada, Arizona, and Utah). Management responsibilities for the Beaver Dam Slope area are shared by three Field Offices and involve coordination with three state programs. There are many other examples of landscape agreements and coordinated planning efforts, especially for management of the habitat of threatened or endangered species. Several new approaches and tools are being devised to further these federal/nonfederal coordinated planning efforts.

ACECs have always been important for conservation, and several have been designated by Congress as National Conservation Areas. ACECs can be of any size and can protect a diversity of important resources and values. Because ACECs should be a priority designation, they could lend stability and integrity to a larger area. Furthermore, in many of the RMPs reviewed for this article, ACECs are shown as unavailable for disposal and as high priority for acquisition of inholdings and additions. Large individual ACECs could protect entire ecosystems or groups of resources, while smaller ACECs could safeguard crucial individual resources or areas and provide a framework or backbone for a more expansive landscape-level planning effort.

---

[167] At times BLM refers to designated ACECs as a "program," and at other times denies that they are considered as such. Perhaps now that BLM has undertaken many more "conservation" duties, the character of ACECs and nomenclature applied to them will be reconsidered.

[168] The Classification and Multiple Use Act of 1964, Pub. L. No.88-607, 78 Stat. 986, directed BLM to classify lands, considering ecology, among other things, and BLM responded with classifications that included large and significant areas. *See* note 28, *supra*.

VI. OBSERVATIONS FROM THE FIELD: ON-THE-GROUND ACEC MANAGEMENT

A major objective of the research for this article was to determine the extent to which BLM's on-the-ground administration of ACECs fulfills FLPMA's statutory directive to "give priority in to the designation and protection of areas of critical environmental concern" in the development and revision of land use plans. This analysis is support for our recommendations to BLM for improvement in ACEC designation and management.

A. Field Research Methodology

To assess on-the-ground management of ACECs, the authors reviewed 36 Resource Management Plans (RMPs) and Records of Decision (RODs) from eleven Western states.[169] From these RMPs we selected a sample of 111 individual ACECs. The sample was chosen to represent the various types of ACECs[170] and management prescriptions and to illustrate how BLM is using the designation to protect resources and values of the lands under its administration. In making our selection we relied on the criteria and requirements for ACECs set forth in BLM Manual § 1613, which remains the principal agency authority on these areas.[171]

For our investigation we assumed the role of a member of the public interested in a particular ACEC or in an area of BLM land because of its

---

[169] The states were Alaska, Arizona, California, Idaho, Montana/the Dakotas (treated as one state by BLM), Nevada, New Mexico, Oregon/Washington (treated by BLM as one state), Utah and Wyoming. The information was compiled in a table included with the authors' report to the Pew Charitable Trusts. The table is available from the authors on request.

[170] FLPMA identifies 4 categories of areas where special management is required for "historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards." 43 U.S.C. § 1702(a). *See also* BLM Manual § 1613.1.

[171] BLM Manual § 1613.33 (1988) requires that proposed ACECs and their associated management prescriptions be "identified and fully described" in RMPs and plan amendments. For each proposed ACEC, a plan "shall contain" a name based on the resource or value or particular physical feature of the area (§ 1613.33A), and a description of the "value, resource, system or hazard which warrants special management attention." This description must include sufficient detail to "clearly indicate" why the area qualifies for ACEC designation. (§ 1613.33B). Management activities and future uses considered compatible with purposes of ACEC designation and those considered incompatible must be described when an ACEC is proposed, along with information "unique" to the ACEC. (§ 1613. 33C). The rationale for designating or not designating an ACEC "must be discussed." (1613.33E).

natural beauty, recreational opportunities, interesting geology or other outstanding natural resources or values. Our intent was determine whether information on ACECs was easy to find on BLM websites and/or in RMPs, or was missing or so scattered that it would discourage even an enthusiastic member of the public from pursuing their interest in an area.

Our research procedure involved the following steps:

- Review of the website for each BLM state office to see what information was provided about planning in general, and ACECs in particular;
- Selection of at least 3 field offices in each state, chosen for geographical and resource diversity;
- Review of the RMP and ROD prepared by each of the chosen field offices, as posted on the statewide or field office website; [172]
- Choice of at least 3 or 4 ACECs in each RMP,[173] with the objective of including 2 examples of each of the 4 categories of ACECs prescribed in FLPMA, and
- Identification of the resources and values for which the ACEC was designated and the management prescriptions BLM identified as necessary to "protect and prevent irreparable damage" to them.

B. Research Challenges

The research proved difficult and often frustrating. BLM has no up-to-date central data base or compilation of information on ACECs. The agency's master list of ACECs, which gives the name, field office and state where they are located, is incomplete and inaccurate. Information on ACECs is often spread among a number of different documents, in addition to the RMP and its ROD. Statutes such as the Endangered Species Act, the National Historic Preservation Act and the Energy Policy Act of 2005 may provide additional important information relevant to ACEC management, as may also be the case with administrative documents.[174] These documents are not included with an RMP, and may not

[172] A considerable number of field offices are in the process of revising their RMPs. With a few noted exceptions, we limited our review to RMPs that are not being revised, as these constitute current management in the planning area that is available to the public on agency web pages.

[173] In Alaska, three of the four field offices chosen have designated only a single ACEC each, reducing the sample size for that state.

[174] For example, after 1995, each BLM State Office was required to develop state or regional standards and guidelines for grazing administration on the public lands. These standards and guidelines are set forth in documents separate from RMPs, as are the graz-

even be mentioned in it, so it is not always possible to determine all the management prescriptions or guidance applied to a particular ACEC. Since our purpose was to examine information readily available to the public on the treatment of ACECs under FLPMA, we limited our review to the applicable RMP.

Even something as simple as determining why an area was designated as an ACEC proved daunting, despite the fact that BLM Manual § 1613.3A states that an ACEC will usually be given a name based on the resource or value warranting special management attention or a particular physical feature of an area.[175] The majority of ACECs have quite generic names (for example, Deep Creek) offering no clue as to the values and resources they protect.

1. BLM State Websites

There is no standard format or list of requirements that each BLM state website must follow to display information on planning, in general, or ACECs in particular. As a result, there is significant disparity in the amount of information about ACECs, as well as its quality and level of detail, presented by the state websites. For example, the BLM website for Arizona has no overview information about ACECs at all. A search of the term on the home page produces a list of PDF documents from Records of Decision. The Wyoming homepage includes a "Special Areas" entry with no mention of ACECs. In contrast, the Utah website has a page dedicated to its ACEC program, with information on ACEC designation criteria and process. There is an FAQ section that provides information on public participation, the importance of ACECs and generally permitted activities. The Utah website lists all of the State's ACECs on a page organized by field office. The list includes basic information on the ACECs and additional information can be obtained by clicking on the name of an individual ACEC.

2. Field Office Websites

Most BLM state websites have a map showing the location of field offices and a viewer can open individual pages for each field office.

---

ing prescriptions for individual grazing allotments. Thus, as a general matter, from the RMP alone, a member of the public can ascertain only whether an ACEC is open or closed to grazing and not learn what impacts grazing activity might have on other resources. Similar examples that might apply to individual RMPs include the National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands (USDI-BLM 2001), the National Mountain Bicycling Strategic Action Plan (USDI-BLM 2002), and administrative materials addressing Wind and Solar Development on Public Lands and Statewide Designation of Energy Corridors on Federal Lands in the Eleven Western States.

[175] BLM Manual § 1613.33A.

However, each field office treats information on ACECs differently, making a search burdensome and confusing, and comparisons with other field offices almost impossible. For example, the Southern District of Nevada displays excellent data on ACECs, while the other field offices in the State show virtually nothing.

3. Resource Management Plans

Field offices roughly follow the format for RMPs contained in Appendix F of BLM Manual § 1601 on Planning, but there is a great deal of variation in the content and presentation within that general framework. For example, the Fairbanks, Alaska Field Office prepares its RMPs in a completely different way from the Anchorage Field Office. As detailed in Section V above, there is no prescribed approach for discussion of ACECs, and thus there is considerable inconsistency in how field offices treat ACECs in their RMPs. Some plans include a separate section on ACECs or Special Areas which describes the designations and their resources and proposed management. Even when this is case, however, an interested person must read the entire RMP to determine whether ACEC management of a particular resource or area is discussed elsewhere in the plan. Many RMPs have little or no separate coverage of ACECs, necessitating reading an entire plan and ROD (which can easily total hundreds of pages) to find the references to ACECs.

C. Conclusions from the RMP Sample

1. Inadequate Identification of Resources and Values Represented in ACECs

BLM has designated over a thousand ACECs --- an assemblage that protects areas of astonishing beauty, rare and unusual plant communities, habitat for imperiled species, geologic records of our planet's history, and sites that are visible memories of the native peoples who came before.

The preponderance of ACECs across all the states were designated for multiple resources and values. They may have scenic qualities and also contain crucial wildlife habitat or cultural properties; they may include a wetland ecosystem, popular hiking trails and a historic settlement. Our sample showed a preference in ACEC designations for often unspecified "scenic values" and for big game species and species listed under the ESA. Not surprisingly, many ACECs in the Southwest were chosen for their archeological and cultural resources. A number of riparian and wetland ecosystems are ACECs, as are areas of paleontological interest.

Unfortunately, many RMPs gave little or no information about the resources and values that warranted ACEC designation. Indeed, it is fair

to say that BLM Manual § 1613.33B requirement for a description of ACEC resources and values was almost entirely ignored. For example, the Salem, Oregon FO RMP did not identify *any* resources and values or management prescriptions for the Williams Lake, Soosap Meadows or White Rock Fen ACECs. Many plans failed to name the species of wildlife or plants for which the ACEC was designated, making it impossible to evaluate, or even ascertain, the applicable management prescriptions. For example, the Spokane, Washington FO RMP did not identify the ESA listed species that the Rock Island ACEC was intended to protect, or give any management prescriptions or information on potentially conflicting activities in the area. Similarly, the Yakima and Columbia River Islands ACEC is said to contain "crucial nesting habitat," but the species were not identified. This ACEC is open to oil and gas leasing, but the RMP is otherwise silent on management. It is possible that information on rare species is available in an ESA recovery plan or other agency document, or has been omitted from the RMP to protect the species' security. However, this raises the question of the utility and relevance of the RMP as a planning instrument if agency managers must refer to numerous other documents to obtain information not included in the RMP as they implement these plans.

Often RMPs used one or two generic words to note the resources and values of ACECs, without further detail. For example, the Monticello, Utah FO 2008 RMP simply stated the San Juan River ACEC listed "scenic, cultural, fish and wildlife, natural systems and processes, and geologic features" as the area's values and resources, with no elaboration. The Coeur d'Alene, Idaho Field Office 2007 RMP describes the Pulaski Tunnel ACEC only as "historic," without any further detail.[176]

The most difficult ACECs to find were Natural Hazards. The 1998 RMP for the Las Vegas, Nevada Field Office identifies the Devil's Throat Sinkhole ACEC as a natural hazard. (The sinkhole is 100 feet wide and 100 feet deep and expanding.) Interestingly, this ACEC is open to oil and gas exploration and development and grazing. No management prescriptions are given for recreational activities or fish and wildlife, which one would assume could be impacted by the hazard. The other natural hazard in the sample is the Four Dances ACEC named in the

[176] Coeur d'Alene, Idaho Field Office 2007 RMP at 61. The Pulaski Tunnel was named for Ed Pulaski, who saved his crew of firefighters by ordering them into a mining tunnel during the wildfire that swept through the national forests of Washington, Idaho and Montana in 1910. The riveting story is chronicled in THE BIG BURN by Tim Egan. TIMOTHY EGAN, THE BIG BURN: TEDDY ROOSEVELT AND THE FIRE THAT SAVED AMERICA (2010).

2013 RMP from the Billings, Montana Field Office. The RMP gives no information on what the hazard is or how it is to be managed.

2. Incomplete Information on Management Prescriptions

Overall, the single most significant shortcoming in RMP treatment of ACECs was the failure to identify and describe the special management prescriptions necessary to protect them. This is clearly contrary to BLM Manual § 1613 which requires an RMP or plan amendment to identify and fully describe the special management prescriptions necessary to "protect and prevent irreparable damage"[177] to ACEC resources and values.[178] Without this information there is no way to determine whether and/or how agency managers are actually protecting ACEC resources and values on the ground.

A few examples will illustrate the magnitude of the information gaps in the sampled RMPs. The East Pryor Mountains ACEC, identified in the 2013 Billings, Montana Field Office RMP, was designated to protect a herd of wild horses, yet the plan contains no information on the herd or management prescriptions necessary to manage it. The Raised Bog in the Winnemucca, Nevada planning area is noted as a "rare example of a quaking bog," but the RMP is devoid of management prescriptions to address recreation, vehicle use, or other activities that may damage the Bog.

RMPs exhibited considerable differences in the management approach to two of the most important resource categories for ACEC designation: historic and cultural properties and wildlife, including Threatened and Endangered Species. Some RMPs contain extensive prescriptions for such properties or species. Others are vague, at best, about how these resources will be managed. Frequently, RMPs noted that certain management prescriptions "should," "would," or "will" be used, but whether they were actually instituted is unclear. Examples include the Virgin River Corridor ACEC in the Arizona Strip, Arizona FO 2008 RMP which is almost entirely prospective in how the area's cultural, historic, and scenic resources and endangered fish populations may be safeguarded. The Fairview RNA/ACEC in the Uncompahgre, Colorado FO 1989 RMP states that plant monitoring studies for the area's endangered plants "will be developed and actions designed to improve habitat conditions initiated," but whether this has occurred is unknown.

Since an ACEC will not be designated unless "special management attention is required . . . to protect and prevent irreparable damage" to re-

[177] BLM Manual § 1613.02.
[178] BLM Manual § 1613.33.

sources and values, the absence of information and the equivocation on management prescriptions contravenes BLM Manual § 1613. As noted earlier, one possible explanation is that information relevant to ACEC management is contained in documents prepared pursuant to other statutory or administrative directives. However, not having useful data at hand for the planning process makes RMPs potentially less effective as planning tools and makes public participation more difficult. More vigorous requirements for the inclusion of better information on ACECs in RMPs and in the annual reports could be helpful

The other explanation, and one which is supported by our review of RMPs, is that ACECs often receive short shrift in the planning process. In spite of the clear statutory direction of FLPMA, ACEC designation does not appear to be a priority for BLM field managers. Rather than being used as the starting point in the planning process, ACECs are regarded merely as one of a number of possible categories of designations available for multiple use/sustained yield management in the planning area. The RMPs we examined did not explain the reasons for the management choices made, for example, why an area with the resources and values that qualified it as an ACEC was instead relegated to a wildlife habitat area or some other classification. Perhaps BLM managers are reluctant to designate ACECs *because* they are statutory and, therefore, limit managers' discretion. However, the very fact that ACECs have several statutory priorities could be helpful to BLM managers, not only for protecting important resources and values on public lands, but for defending agency management decisions from political and other interference.

3. Lack of Correlation between Authorized Activities and Protection of ACEC Resources and Values

The field study showed that the majority of ACECs sampled are open to mineral entry under the Mining Law of 1872, generally with plans of operation required. [179] They are also open to oil and gas leasing,

---

[179] Approximately 2/3 of the ACECs reviewed are currently open to mineral entry, in part or all of the area. This percentage may be higher because not all RMPs included this information in the description of activities in ACECs. For example, the 229,000 acre Neacola Mountains ACEC in the Anchorage, Alaska FO RMP does not indicate whether the ACEC is open to mining (or oil and gas activity either). The Sleeping Giant ACEC in the Butte, Montana FO 2009 RMP has no information on whether the area is legally available for mineral entry or oil and gas leasing. This is an ACEC with an unusual rock formation, "significant" scenic and watershed values and important historic resources, all of which could be compromised by mining or oil and gas development activities.

A number of RMPs propose withdrawal of parts or all of an ACEC from mining, so in the future the level of this activity may be reduced. Examples include the Hualapai Mountain Research Natural Area ACEC in the Kingman Arizona FO 1993 RMP, the

frequently with restrictive conditions, including the No Surface Occupancy (NSO) stipulation.[180] Many ACECs allow grazing, sometimes with restrictions provided by the applicable Grazing Allotment Plan or individual grazing permit.[181]

There was often little correlation in the RMPs sampled between authorized activities, such as mining or oil and gas development, that can damage ACEC resources and values, and the management prescriptions provided to protect them. Many RMPs did not discuss whether the management activities and uses allowed were compatible with the purposes of ACEC designation, although this matter is supposed to be fully described when an ACEC is proposed.[182] Without an evaluation of the selection of appropriate management prescriptions it is questionable whether the RMP is an adequate planning tool.

One example of the disconnect between resource protection and management prescriptions was the Las Cruces, New Mexico FO 1993 RMP treatment of the Old Town ACEC. This ACEC was closed to vehicles and its cultural sites fenced to protect them from damage from pothunters, yet the ACEC was open to mineral entry. Mineral entry could create the very damage the other measures were designed to prevent. Similarly, although the Pueblos ACEC in the Taos, New Mexico FO RMP had several measures in place to conceal the location of the pueblos, vehicles were allowed without restrictions –such as day use only— that would facilitate enforcement on designated routes in close proximity to them.

Recreation is a significant and growing use of numerous ACECs, especially for rock climbing, hiking, and camping. Some ACECs have "developed" BLM recreational facilities such as campgrounds within them or very near them, despite the threat such facilities might pose to

---

North Fork Cosumnes River ACEC in the Folsom, California Sierra FO 2008 RMP, the Chama Canyon ACEC in the Taos, New Mexico FO 2012 RMP, and the Twin Creek ACEC in the Lander, Wyoming 2014 RMP.

[180] At least 80% of the ACECs included in the sample are currently open to oil and gas exploration and development, in at least part of the area. Again, this percentage may be higher; the information is missing from RMPs such as the Los Osos ACEC in the Bakersfield, California FO 2014 RMP. Given that the Los Osos ACEC was designated to protect rare endemic plants communities and is off-limits to grazing and camping, a management prescription addressing oil and gas activities would seem to be an appropriate aspect of the RMP, although it is possible that the area has no oil and gas potential.

[181] More than half of the ACECs examined in the study are open to grazing in all or part of the area and during all or part of the year. This percentage may be higher because not all ACECs indicated whether they were open or closed to grazing.

[182] BLM Manual § 1613.33C. RMPs are also required to provide information on the "unique" attributes of the ACEC when it is proposed,

vulnerable features.[183] Given the potential impact of recreational activities on ACEC resources, the extent of the omission of management prescriptions to deal with these effects was startling. Of the more than 100 ACECs examined, 47 made no mention of recreational activities within the area.

Vehicle use in ACECs is generally limited to designated roads and trails. Off-highway vehicle use is similarly restricted or prohibited, particularly when necessary to prevent conflicts with protected species or fragile environments. However, many RMPs acknowledge that enforcement of restrictions on OHV use is a challenge for limited agency personnel. Rights of Way (ROWs) are permitted in many ACECs; some RMPs endeavor to restrict their location to minimize the impact on protected resources. RMPs describe the management of visual resources solely in terms of their Visual Resource Management (VRM) class, without further detail on how this is to be accomplished and maintained.

Numerous RMPs called for the subsequent preparation of activity plans to address particular resource issues, or for specialized ACEC plans to guide management of the ACEC as a whole. Examples include the Nulato Hills ACEC described in the Anchorage, Alaska FO 2008 Ring of Fire RMP and the Virgin River Corridor ACEC in the Arizona Strip, Arizona FO 2008 RMP. The number of RMPs that actually include activity or ACEC plans is not known. As far as we could determine, only one of the ACECs in our sample, the Galena Mountains ACEC in the Central Yukon RMP, had an individual ACEC management plan. While activity plans are not required by BLM regulations or guidance, the promise of such a plan in the future should not take the place of appropriate controls on activities at present.

4. Inadequate Margin of Safety

Acknowledging that other information may be available elsewhere, and that compromises in ACEC management may be allowed in order to provide public access, even to sensitive areas, some RMPs present contradictory values and management prescriptions that may fail to provide the margin of safety Congress contemplated. As discussed above, the Old Town ACEC in the Las Cruces, New Mexico FO and the Pueblos ACEC in the Taos, New Mexico FO had several protective measures in place (pueblos closed to all mineral development; location not shown on maps; protected by fences or barriers; and out of sight of trails and facilities), yet vehicles were allowed on designated routes. Given the damage from

[183] *See, e.g.*, the campground to be installed near Lavender Mesa, UT, an ACEC designated to protect relict vegetation to serve as a control area in studies on the impacts of grazing and other modern uses on other lands.

vehicles and visitors disregarding use restrictions, and the scarcity of personnel to monitor and enforce such rules, it would seem that additional limitations on vehicles, such as closing roads, or allowing day use only would be in order to help insure adequate protection of these special sites.

Many other plans allow potentially damaging uses, and it was not possible to determine whether adequate protection was provided. Many plans allow damaging uses "subject to reconsideration if the resources of the ACEC sustain damage." Yet under 43 C.F.R. § 1610.7-2(b), in order to add restrictions, the plan would have to be amended with publication in the Federal Register and public comment, a time-consuming process. Some of the resources and values in ACECs are rare, fragile, and irreplaceable. Management should take into account the limited availability of agency personnel to monitor and enforce protections, and err on the side of an adequate margin of safety in the first place, because even if interim protections are available, resources may sustain damage or irreparable harm.

5. Inconsistent Coordination of Management Among Field Offices

The trend in land use planning recognizes that, in many circumstances, such planning should be carried out at the landscape-level because ecosystems and their components, particularly wildlife, do not conform to administrative boundaries. To plan effectively at this level will require coordination among field offices within a state, between states, and among different federal and state agencies. BLM's current decentralized model of organization discourages coordination, which sometimes results in inconsistent management of the same resource. Admittedly, multi-office, state or agency coordination can be complicated, but it has the potential to vastly improve conservation on significant land areas.

Several ACECs studied involved two field offices with management duties for parts of the same resource, and the management regimens sometimes varied greatly. The Bullhead Bajada Natural and Cultural ACEC in the Lake Havasu, Arizona FO 2007 RMP is valuable as historic Desert Tortoise habitat and habitat for other sensitive and special species. The RMP expressly stated that the ACEC was designated to "protect [Desert Tortoise] from urban expansion." Although the tortoises would be much safer if they retreated further up slope, they had a proclivity to remain on the lands that were more accessible to the expanding population of the town of Bullhead. The Lake Havasu FO responded by desig-

nating the lands in its planning area as an ACEC, but with management prescriptions that left many other uses in place.[184]

The Kingman FO, which is responsible for planning for the adjacent habitat, took an opposite approach. The FO declined to designate an ACEC on its lands, concluding that it seemed hopeless to protect the area from the impacts of growing Bullhead City. Instead, the Kingman FO opted to make the public lands contiguous to Bullhead City available for disposal, and to mitigate the Desert Tortoise losses with habitat established elsewhere – in part with moneys obtained from selling the habitat near Bullhead City. Although the disposal of the lands did not ultimately take place, the differences between the approaches of the two field offices in dealing with the same habitat is a telling example of the need for field office coordination.

In contrast to the Lake Havasu/Kingman situation, many field offices have worked together to protect resources and values that transcend administrative boundaries. As previously discussed, the Beaver Dam Slope area includes three contiguous ACECs with that name in three field offices in three states. The RMPs from the St. George, Utah FO (1999 Plan; 48,519 acres) and the Ely District Office, Nevada (2008 Plan; 36,800 acres) contain detailed information on the coordinated management of various resources. The Arizona Strip, Arizona FO RMP (2008 Plan, 51,985 acres) is basically prospective, with few decisions and little management framework to analyze, but does address mineral entry, oil and gas leasing, and grazing as do the other two plans.

At least two other sets of ACECs with resources and values managed by more than one field office were reviewed in our study. The Three Rivers Riparian ACECs were designated by the Lake Havasu, Arizona FO (2007 Plan; 2,246 acres) and the Kingman, Arizona FO (1993 Plan; 32,043 acres). Nine-Mile Canyon ACECs were designated by the Vernal, Utah FO (2008 Plan; 44,168 acres) and the Price, Utah FO (2008 Plan; 26,200 acres). The Vernal RMP imposed more constraints on acquired riparian lands than on other lands, but both the Vernal and Price plans contained significant management prescriptions. Both ACECs were open to oil and gas leasing, subject to various levels of stipulations. Although the Vernal RMP closed the acquired riparian area to vehicles, vehicles are otherwise allowed on designated routes. Dust and pollution

[184] The lands were open to oil and gas, subject to a No Surface Occupancy stipulation only in a Special Cultural Resource Management Area. Part of the ACEC was recommended for withdrawal from mineral entry. All motorized vehicles were limited to designated roads and trails. The Desert Tortoise management was Category 2: no net loss of quantity or quality of species or habitat.

from vehicular traffic used in connection with oil and gas activities has caused controversy by damaging the extensive rock art in the Canyon.

Coordinating management of ACECs that span field office boundaries could reveal issues, problems, and potential paths to success in landscape level management. Perhaps a study of the factors that hinder or facilitate inter-office coordination could be undertaken to assist BLM's efforts to transition to this approach in planning.

VII. RECOMMENDATIONS FOR CHANGES IN ACEC INTERPRETATION AND IMPLEMENTATION

The information collected from the field review, along with the assessment of the deficiencies in BLM's ACEC regulations and guidance, formed the basis for the following recommendations for change in BLM's interpretation and implementation of ACECs. All of these changes could be accomplished administratively.

A. Recognize ACECs as a Land Management Program

BLM could significantly improve its administration of ACECs and elevate their visibility and importance by managing them as a program. The agency commonly uses the program concept to coordinate and facilitate management of groups of related resource activities that require uniform management principles and practices. Section 311 of FLPMA[185] requires an annual report of programs to be submitted to Congress to provide information and evaluations to assist the Congress in its oversight activities of the public lands. The report should also provide budget information on past fiscal years and on expenditures and needs for future fiscal years. Obviously, recognizing ACECs as a program would be appropriate for this high priority management authority, and of great benefit in raising its visibility, importance, and funding.

In addition to the obvious benefits of a coordinated and comprehensive ACEC management, administration of ACECs as a program would allow BLM to address gaps in the protection of resources and values in the current group of ACECs to achieve a more complete array of the special places, geological features, wildlife species and cultural and historic resources the agency has in its care.

Furthermore, an ACEC program would enable BLM to better secure funding for ACEC activities and to defend its designations and protective

[185] *Id.*

management decisions in consistency reviews, which, under FLPMA and current regulations are keyed, in part, to whether proposals in RMPs relate to a BLM program.

An ACEC program could be a more significant part of landscape-level or ecosystem planning. It could play a central role in wildlife and habitat management, water supply, and the amelioration of impacts of climate change, either through designating large areas to protect resources and values, or smaller, but crucial areas that could anchor larger areas or corridors. ACECs can be of any size; they can protect a diversity of important resources and values, and because they are a priority designation with separate formalities for designation and de-designation, they could lend stability and integrity to plans for larger areas. ACECs are generally unavailable for disposal, and are a high priority for acquisition of inholdings and additions. Large individual ACECs could protect entire landscapes or resources, while smaller ACECs could protect crucial individual areas and provide a structure for landscape-level planning efforts.

Finally, recognizing ACECs as a program would complement congressionally-designated BLM conservation units. In the past, many ACECs have subsequently become National Conservation Areas or National Monuments. As a program, ACECs could function to link the conservation options available to BLM, knitting together an extraordinary conservation system for the public lands.

An ACEC program could be readily accomplished by administrative action. Development of agency-wide ACEC protocols would better fulfill FLPMA's mandate for giving priority and protection to ACECs and would improve their effectiveness for conservation. Expanded regulations and guidance on the treatment of ACECs in Resource Management Plans would help eliminate the inconsistent, and sometimes conflicting, approaches to ACEC designation and implementation currently taken by individual BLM states and field offices. A comprehensive organization of ACECs, with readily accessible information on BLM national, state and field office websites, would also increase the public's understanding of the agency's decisionmaking and management processes.

Recommendations for specific elements of an ACEC program include:

1. Substantive program elements:

a. Agency-wide guidance that expressly states the statutory requirements of FLPMA and defines the terms "priority" and "protection" of ACECs;

b. Consistent procedures for the planning process, including explicit steps for recognition of the statutory priorities to be given ACECs;

c. Express requirements for data collection on areas that may qualify as ACECs;

d. Standard principles and procedures for designating and managing ACECs, including guidance on according priority to ACECs in inventorying, designation, and protection in multiple use-sustained yield decisionmaking, and tailoring management to regional and local variations in resources and demands for recreational or commodity uses;

e. Harmonized protocols on the treatment of ACECs in RMPs to eliminate the inconsistent, and sometimes conflicting, approaches to ACEC designation and implementation currently taken by individual BLM states and field offices, and to facilitate research and comparisons;

f. Uniform information on ACECs in RMPs, including:

- Identification of the resources and values for which each ACEC is designated;
- Description of the special management prescriptions necessary to protect the resources and values of each ACEC;
- Discussion of the compatible and incompatible uses of each ACEC, and the relationship of those uses to the selected management prescriptions;
- Explanation of the correlation between the activities authorized in the ACEC and protection of ACEC values.

g. Coordinated ACEC management among field offices with similar lands and resources to accomplish protection.

2. Procedural program elements:

a. A central, on-line and searchable ACEC data base maintained by the national office of BLM and updated annually, as appropriate, with information from the yearly reports required to be submitted by State Directors;

b. A standard template for presenting ACEC information on BLM state and field office websites to simplify information gathering by interested parties and enable the

public to better understand the agency's decisionmaking and management processes;

c. A uniform format for discussion of ACECs in RMPs to facilitate inquiries and research and allow for comparisons of management among RMPs (see RMP contents above);

d. Description of opportunities and procedures, listed on all agency websites, for public participation in the identification, evaluation, designation and management of ACECs, including guidance on the timing and content for proposed ACEC nominations.

B. Improve Agency Implementation of ACECs

ACECs have enormous potential to secure the long-term preservation of exceptional public lands and their resources. A number of specific improvements are recommended to resolve the deficiencies in the agency's current administration of ACECs and return this special designation to its statutory priority position in BLM land management. The program elements described above are also appropriate aspects of improved agency implementation of ACECs.

1. Promulgate new regulations and guidance to restore the visibility and effectiveness of ACECs.

As noted, despite the importance of ACECs, they are the subject of only one current BLM regulation, which does not address the priorities directed by Congress. Guidance on the use of ACECs to protect various resources is addressed in BLM Manual § 1613, but otherwise ACECs receive only scant attention in an Appendix to the BLM Manual § 1601 on planning. The purpose and elements of ACECs, the priorities and protection to be given them, and crucial elements of their management could be addressed in new regulations that comport with and implement FLPMA, and a revised BLM Manual § 1613 could elaborate on practical aspects of their designation and management. Regulations have the benefit of enforceability and provide consistency and regularity in management. Guidance can appropriately complement regulations and take account of the need for flexibility and judgment when dealing with the wide variety of circumstances facing land managers in the field.

2. Define and implement the statutory ACEC priorities.

FLPMA mandates that ACECs receive priorities in inventorying, designation, and protection. Protection is to be provided in resource management plans and through "special management." The legislative history of FLPMA, and early agency actions, support the interpretation that these priorities are both procedural (take precedence in considera-

tion) and substantive (given weight in decisionmaking). As discussed above, the 1980 Guidelines defined "priority" and gave priority to ACECs by requiring findings that: (1) The public benefits of a proposed incompatible action clearly outweigh the public benefits of continuing protection of the ACEC resource; (2) There is a clear public need for the proposed action and such action is clearly in the public interest; (3) There is no feasible alternative to, or alternative location for, the proposed action, and (4) Such action includes all feasible planning and management requirements to prevent, minimize, mitigate, or restore the effect of adverse impacts. Current regulations do not mention, much less provide procedures to implement the ACEC priorities. New regulations and guidance could correct these omissions and assure that the priorities are implemented.

3. Provide BLM-wide guidance on ACECs in the planning process.

The absence of BLM-wide guidance combined with the agency's decentralized management structure has led to inconsistent approaches to ACECs. The current lack of adequate national ACEC guidance may well inhibit area managers from making effective use of ACEC authorities, or securing funding for their implementation. National guidance should be provided on topics such as according ACECs priorities in all planning activities and decisions, inventorying and designating ACECs, developing protective management prescriptions, monitoring and adaptive management.

a. Identify potential ACEC designations as a "planning issue."

The first step in BLM's planning process is the identification of what BLM calls "planning issues." All subsequent planning rests on this step, yet no agency regulation or guidance requires that potential ACEC designations always be considered as planning issues, and this omission should be corrected.

b. Require collection of data on the resources and values that may qualify an area as an ACEC.

Although FLPMA mandates that ACECs receive priority in the inventory process, BLM regulations and guidance do not direct that data on potential ACEC resources and values actually be collected. This omission is significant because non-agency personnel often conduct inventories. In the absence of specific instruction to do so, they may not gather information on ACEC values critical to the identification of the planning issues on which the rest of planning depends. BLM should advise both its staff and non-agency personnel that collecting information on areas

that may qualify as ACECs is not optional, but is an important initial aspect of the planning process.

c. Accord ACECs priority in land use planning.

FLPMA directs that ACECs be given priority in the inventory, designation and protection management aspects of BLM's land use planning processes. Current BLM regulations do not implement these priorities, thereby shortchanging a significant aspect of the planning process. Improved regulations and guidance on incorporating the ACEC priorities could remedy these omissions. ACECS should be afforded priority as a planning issue and in the Assessment of the Management Situation and all other steps in the planning process.

d. Include more detailed discussion of ACEC Resources and Values in draft RMPs and in Federal Register notices.

Draft Resource Management Plans and any Federal Register notices of proposed ACECs should describe the resources and values of the area, and the special management protections and restrictions that may apply.

4. Manage ACECs to achieve the heightened level of protection required by FLPMA.

Because of their special character, Congress intended ACECs be given greater protection than is afforded public lands in general under multiple use-sustained yield principles.

a. Provide heightened protection for ACECs

By definition, ACECs are areas where "special management attention" is necessary to protect their values. FLPMA directs that ACECs be managed to both protect *and* prevent irreparable damage to their resources and values. However, some RMPs concluded that "protection" means that which is provided under FLPMA generally and, therefore, ACECs need only be designated when necessary to prevent irreparable harm. The legislative history of FLPMA indicates that this interpretation is in error. New regulations and guidance should indicate that a heightened level of protection for ACECs is the statutory standard.

b. Include a margin of safety.

Some of the resources and values in ACECs are rare, fragile, and irreplaceable, yet many RMPs allow potentially damaging uses and activities to occur. Guidance should acknowledge the limited availability of agency personnel to monitor and enforce protections, and err on the side of an adequate margin of safety when developing protective management prescriptions for ACECs.

c.Foster better coordination of ACEC management among field offices.

The lack of coordination among field offices sometimes results in conflicting management of the same or similar resources and land types, with consequent impacts on protection. A general directive to field offices to collaborate when appropriate, and specific procedures for harmonized management would help address this problem, as would standardized approaches to website and RMP organization and content identified in the recommendations concerning program management.

5. Facilitate public participation in the evaluation, management and nomination of ACECs.

Current regulations provide for public participation in BLM planning processes and BLM Manual § 1613.4 directs agency managers to facilitate public involvement on ACECs. The use of a consistent format for BLM state and field office websites and in RMPs would make it easier to find information on ACECs. Instructions on how the public may nominate an area for consideration as an ACEC would be useful as well.

6. Enforce the annual reporting requirement.

BLM cannot effectively manage ACECs without an accurate, up-to-date central database of information on ACECs. State Directors are supposed to provide this information to the Washington office on an annual basis, but generally fail to do so. Enforcement of this basic requirement would assist the national office in successfully supervising ACEC designation and implementation across the public lands.

7.Explore the greater use of ACECs as part of landscape-level or ecosystem planning.

ACECs could play a greater role in landscape level or ecosystem management for wildlife and habitat, water supply protection, the amelioration of impacts of climate change, and other important matters, either as large individual areas protecting important resources and values, or as smaller but crucial areas that could anchor larger areas or corridors. Landscape level and ecosystem planning and management represent the emerging public lands agenda. An expanded role for ACECs could support BLM's efforts to meet the challenges these new approaches demand. It is notable, and regrettable, that in BLM's largest landscape level planning effort to date—relating to the conservation of the greater sage grouse and its sagebrush habitat—ACEC designations were utilized in draft RMP amendments, but dropped from almost all final plans. The explanation for this decision is an open question, but it is consistent with the agency's preference for retaining discretion in management choices and its aversion to taking actions that engender political opposition.

VIII. CONCLUSION

Since its inception, BLM has faced challenges in establishing a conservation mission and agenda to balance its historic commodity development emphasis. The agency has made progress in this effort by designating more than a thousand ACECs on the lands under its care. However, despite strong directives in FLPMA, BLM has failed to accord ACECs their statutory priorities, has allowed ACECs to virtually disappear from agency administrative materials, and to receive inconsistent management on the ground. BLM has hobbled its ability to make effective use of the remarkable ACEC land designation that Congress gave no other land managing agency. By taking the actions necessary to restore a vigorous approach to ACEC management in its regulations and guidance, BLM would honor FLPMA's unique land protection mandate, enhance what the agency has already achieved, and be better prepared for the future.

Assured Water Supply Laws in the Western States: The Current State of Play

Monica Green and Anne Castle*

* Monica Green is a Legal and Policy Advisor at Boulder County Public Health and a Research Attorney for the Getches-Wilkinson Center for Natural Resources, Energy, and the Environment at the University of Colorado. Anne Castle is a Senior Fellow at the Getches-Wilkinson Center and was formerly the Assistant Secretary for Water and Science at the U.S. Department of the Interior. The authors are grateful for the review and suggestions provided by Doug Kenney, Tony Willardson, and Sarah Bates. The Western States Water Council Executive Committee members from the states addressed in this paper and their colleagues have graciously reviewed each of the state summaries and provided helpful comments. Special thanks to Clint Chandler, Einav Henenson, and Richard Obenshain (Arizona), Jeanine Jones (California), Jerry Rigby (Idaho), Tim Davis and Allison Mouch (Montana), Kelvin Hickenbottom and Jason King (Nevada), John Longstreet, Julie Valdez, and Molly Magnuson (New Mexico), Cindy Smith, Tom Byler, and Racquel Rancier (Oregon), Norm Johnson, Eric Millis, and Walt Baker (Utah), Dave Christensen and Tom Loranger (Washington), and Pat Tyrrell and David Waterstreet (Wyoming).

ABSTRACT

Better integration of water and land use planning has become an almost universal rallying cry in areas of water scarcity. A starting point for this integration is the consideration of the availability of water to serve new development in the process of land use approval by a local government. Requirements for subdividers to demonstrate that an adequate water supply is available for a proposed development are common and are known as "assured water supply" laws. This paper reviews such laws in eleven western states, and compares them based on key characteristics in these laws that influence their scope and effectiveness in meeting the goals of consumer protection, sustainable growth, integrated land and water planning, and wise use. Those characteristics include: universal application; review by an independent state expert; minimum size of development regulated; integration into regional water supply plans; and incorporation of water conservation techniques. The discussion highlights differences among the states and recent trends, while acknowledging the tricky balance between local control of land use decisions and prudent water supply planning.

Table of Contents

I. INTRODUCTION

With water scarcity an ever-present concern in the Western United States, increased scrutiny is being directed to the processes through which governmental entities approve new growth and development, which in turn ratchet up water demand. Various estimates of projected water supplies and demand, factoring in the impacts of climate change and population growth, make it clear that the West simply cannot grow in the future in the same manner as in the past.[1] Local decisions approving development are frequently motivated by the prospect of new jobs and amenities, increased tax base, and improvements to existing infrastructure, with only secondary consideration given to the availability of adequate water supplies and, sometimes, none at all. In a nod to Will Rogers' adage, "if you find yourself in a hole, first thing to do is stop digging," more attention is being paid to the land use review processes that approve the creation of new water demand, and more effort made to ensure thorough and informed consideration of water availability and conservation techniques in those processes.

In recent years, many water policy statements and enactments have called for increased connectivity between land use decisions and water availability. The Western Governors' Association's water sustainability reports, the State of Colorado's new water plan, and the California Sustainable Groundwater Management Act are all examples, and there are many more.[2] There is widespread recognition of, and considerable deference to, local control of land use decision-making, but also awareness that states can and should foster sustainable growth policies, "identify water requirements needed for future growth, and develop integrated growth and water supply impact scenarios that can be presented to local decision makers."[3]

---

[1] *See, e.g.,* U.S. Dep't Interior: Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study (Dec. 2012); Ellen Hanak, *Water for Growth: California's New Frontier,* Public Pol'y Inst. of Cal. (2005); U.S. Dep't Interior: Bureau of Reclamation, SECURE Water Act Section 9503(c)— Reclamation Climate Change and Water 2016 (Mar. 2016), *available at* http://www.usbr.gov/climate/secure/docs/2016secure/2016SECUREReport.pdf; NATURAL RES. DEFENSE COUNCIL, *Climate Change, Water, and Risk: Current Water Demands Are Not Sustainable* (July 2010), *available at* https://www.nrdc.org/sites/default/files/WaterRisk.pdf.

[2] *See* Water Needs and Strategies for a Sustainable Future, W. Governors' Ass'n 4–6 (June 2006) [hereinafter WGA 2006]; Water Needs and Strategies for a Sustainable Future: Next Steps, W. Governors' Ass'n II–III (June 2008) [hereinafter WGA 2008]; Colorado's Water Plan, Colo. Water Conservation Bd.Ch. 6.3.3 (Nov. 2015); California Sustainable Groundwater Management Act of 2014, Cal. Gov't. Code §§ 65350.5, 65352, 65352.5 (2016).

[3] WGA 2006, *supra* note 2, at 5.

As a fundamental first step in this process, many, but not all, western states have enacted statutes requiring a determination at the local government level of the adequacy of available water supplies to support new development. Such statutes recognize that while land use and development approval decisions are matters of local concern, the adequacy of water for new developments is a matter of statewide concern and essential for the preservation of public health, safety, and welfare and the environment.[4] Statewide interests in consumer protection for home buyers, fostering sustainable growth, ensuring some degree of connection between land use and water supply planning, avoiding unreasonable depletion of shared resources, and, in some cases, encouraging the wise use of water are among the broader goals served by assured water supply requirements.

State statutes that require some demonstration of the sufficiency of the water supplies available to serve new or expanded development are lumped together in this article under the moniker "assured water supply" laws. Such enactments are also referred to as water adequacy requirements and "show me the water" edicts. These nicknames all refer to statewide directives that require evidence of an actual and sufficient water source in order to obtain the land use approval necessary to proceed with development. There are numerous forms these directives can take and innumerable exceptions.

The mere existence of state assured water supply requirements does not guarantee effectiveness in achieving the desired goals. The scope of applicability, the depth of the review, and the integration with the land use decision process are each relevant in examining effectiveness. Previous analyses have suggested a framework for evaluating effectiveness of such laws, and this effort updates and refines that framework.[5]

---

[4] *See*, *e.g.*, WGA 2006*, supra* note 2, at 4; COLO. REV. STAT. § 29-20-301(1)(b) (2016).

[5] This work builds on, and the authors are indebted to, the work of Lincoln Davies, Doug Kenney, Bobbie Klein, and Sarah Bates. This is an evolving field, with advances being made continually, necessitating periodic updates. The insight provided by these authors has been invaluable in providing a framework for evaluating the current state of play. *See generally* Lincoln L. Davies, *Just a Big, "Hot Fuss"? Assessing the Value of Connecting Suburban Sprawl, Land Use, and Water Rights Through Assured Supply Laws*, 34 ECOLOGY L.Q. 1217 (2007) [hereinafter Davies 2007]; Lincoln L. Davies, *East Going West?: The Promise of Assured Supply Laws in Modern Real Estate Development*, 43 J. MARSHALL L. REV. 319 (2010) [hereinafter Davies 2010]; Bobbie Klein & Doug Kenney, GETCHES-WILKINSON CTR., *The Land Use Planning, Water Resources and Climate Change Adaptation Connection: Challenges and Opportunities,* UNIV. OF COLO. LAW SCHOOL: COLO. LAW SCHOLARLY COMMONS (2009); Sarah Bates, "SHOW ME THE WATER" AND BEYOND: EMERGING STRATEGIES TO ASSURE ADEQUATE WATER SUPPLY FOR NEW DEVELOPMENT, AND SOME SUGGESTIONS FOR THE FUTURE, UNIV. OF MONT. CTR. FOR NATURAL RES. & ENVTL. POL'Y (2010) at 1, 4; Sarah Bates, *Bridging the Governance*

The continued pressure on water supplies and anticipated growth in the Western United States suggests that states may want to re-examine their own water supply directives and compare them with those of other states to determine whether modification is warranted or desirable. The focus here on state laws is not intended to suggest that local requirements are absent. It is frequently the case that counties and municipalities also have requirements for scrutiny of a developer's proposed water supply. But because states have primary responsibility for water allocation and administration, they have a critical role to play in the related issues of growth and the use of this scarce resource.[6]

This paper examines the assured water supply laws in eleven western states, to provide a comparison among them and an examination of their effectiveness. First is the presentation of a framework for evaluating the effectiveness of such laws, building on and adding to previous similar analyses. Second, a comparison of the laws of the eleven states is provided through the lens of the evaluative framework previously described. Third, a summary of the assured water supply laws in each state is given. Finally, a conclusion presents lessons gleaned from the review of state laws and comparisons among them, with recommendations for consideration by land planners and state legislators seeking to improve or beef up their existing laws and practices.

II. EVALUATION OF WESTERN STATE ASSURED WATER SUPPLY LAWS

In order to present a useful comparison and evaluation of the widely differing assured water supply laws in the western states, it is beneficial to identify key characteristics in these laws that influence their scope and effectiveness in meeting the goals of consumer protection, sustainable growth, integrated land and water planning, and wise use. Five salient attributes of these laws have previously been suggested for this evaluation.[7] Here we present a refinement of that analytical framework to cap-

Gap: Strategies to Integrate Water and Land Use Planning, UNIV. OF MONT. CTR. FOR NATURAL RES. & ENVTL. POL'Y, no. 7 (2011).

[6] WGA 2006, *supra* note 2, at 4. The federal government has traditionally deferred substantially to state law on water allocation and administration. *Cal. Or. Power Co. v. Beaver Portland Cement Co.,* 295 U.S. 142, 163–64 (1935); Reclamation Act of 1902 § 8, 43 U.S.C. § 383 (2016); Clean Water Act § 101(g), 33 U.S.C. § 1251(g) (2012). Because, however, the federal government has historically played a stronger role in consumer protection and the underwriting of mortgage loans for housing, a larger federal role in ensuring adequate water supplies for residential development, at least for homes with federally backed mortgages, could be possible. Such an incursion into state water policy would likely be strongly resisted by the western states.

[7] Davies 2007, *supra* note 5, at 1279–92. The factors suggested by Davies are: compulsoriness, stringency, universality, granularity, and interconnectedness. These five factors are referred to herein as the "Davies factors."

ture the most essential elements of difference in the existing laws in the western states together with recognition and incorporation of recent refinements. The evaluation criteria used here are:

- Universal
- Uniform Expert Review
- Minimum Size
- Integration
- Conservation

Each criterion is discussed in detail below with examples of various state laws that illustrate its application.

A. Universal

A major factor for evaluating and comparing the effectiveness of an assured supply law is whether the water adequacy determination is required for all new development within the state or only in certain specified areas or circumstances.[8] A greater degree of consumer protection is obviously provided when all development is covered. In addition, exceptions to assured water supply requirements can undermine state and regional sustainability goals because exempted areas may approve development that overwhelms progress made elsewhere. Statewide enactments also ensure that developers cannot go jurisdiction shopping for the land use authority least concerned about adequate water.

Some states, like Arizona, have more stringent assured supply laws in areas where groundwater depletion is of greater concern.[9] In New Mexico, areas within municipalities from which irrigation water rights have been severed are examined for water adequacy, but not subdivisions in other parts of the municipality.[10] In Wyoming, unincorporated areas of counties are covered, but not municipalities.[11]

B. Uniform Expert Review[12]

The overall effectiveness of an assured water supply law will be influenced by the level and type of scrutiny and evaluation of the evidence

---

[8] The "minimum size" requirement could be viewed as a component of universality, but is treated here as a separate factor to highlight the different size thresholds in the various states. *See infra* text accompanying notes 16–23.

[9] ARIZ. REV. STAT. § 45-576 (LexisNexis 2016).

[10] N.M. STAT. ANN. § 3-20-9.1 (LexisNexis 2016).

[11] WYO. STAT. ANN. §§ 15-1-510, 18-5-301 (2016).

[12] This factor of "uniform expert review" is similar to the Davies factor of stringency, but is expanded to include the concept of involving a technical expert in the water supply field and providing uniformity to the reviews throughout the state. The Davies "stringency" factor addresses primarily the difference between a review for "paper" water rights or theoretical future supplies versus a water supply determination requiring real proof that physical water will actually be available when the developers say it will be. Davies 2007, *supra* note 5, at 1282.

of water adequacy provided by the developer. A uniform review performed by a technical water expert provides consistent protection of consumers statewide and ensures that developers in different parts of the state and under different jurisdictions are measured with the same yardstick. Uniformity can be enhanced by providing transparent standards or criteria to be used by local governments in the evaluation, such as the examination of the availability of supply during different hydrological cycles, factoring in the potential impacts of climate change and practical assumptions about the length of time that non-renewable supplies will be available. Enlisting the office of the top state water official would seem to be advantageous in terms of providing uniformity, extensive knowledge, and credibility to the decision. The State Engineers or Water Resources agencies in the western states are sometimes engaged to provide this review. On the other side of the spectrum, the local governmental body may make the ultimate water adequacy determination, without a requirement that any technical expert in water resources be consulted.

Several of the states studied enlist state agencies to provide expert review of proposed water supply plans for adequacy, at least in certain circumstances. In Arizona, the Department of Water Resources reviews water supply plans in Active Management Areas based on statutory criteria to issue a Certificate of Assured Water Supply. Nevada similarly engages its Department of Water Resources to review plans for water sufficiency. Colorado counties and all local governments in New Mexico are required to obtain the State Engineer's opinion that a proposed water supply plan is adequate. Montana and Wyoming enlist the assistance of the state Department of Environmental Quality to perform an adequacy review.

Some states have statutory criteria for water adequacy reviews; in others, the responsible state agencies have issued their own guidance. California provides detailed statutory criteria for the review of Urban Water Management plans, looking at the supplies available during normal, single-dry, and multiple-dry years within a 20-year projection, but this review is not required for a development approval.

For ground water supplies, a realistic analysis of the continued availability of water for a particular, relatively lengthy, period of time is prudent and is required in some states. Arizona's law, for instance, demands that there be sufficient water available for 100 years without unduly decreasing the aquifer levels.[13] For non-renewable ground water, Colorado also requires a 100-year supply.[14] In contrast, many states do

[13] ARIZ. ADMIN. CODE §§ R12-15-704(F), -712(E), -716(B)–(C) (2014).

[14] COLO. REV. STAT. §§ 37-90-103(10.5), (10.7), -107(7)(a) (2016); *see* COLO. DEPT. NAT. RESOURCES DIV. WATER RES., *Guide To Colorado Well Permits, Water Rights, and*

not specify any particular time frame. This may reflect assumptions about the likely source of supplies for new development and its renewable or nonrenewable character.

C. Minimum Size[15]

The minimum number of lots in new subdivisions that triggers coverage by water adequacy laws varies from state to state, with a cluster of states regulating developments with a minimum size in the four to six unit range. Obviously, a smaller minimum sweeps in more development and provides consumer protection to a larger suite of potential home purchasers. While the cost to the developer of providing the information and analysis necessary to secure a determination of adequate water supply is a factor, and may be a very significant burden for smaller subdivisions, it would seem that most, if not all, home buyers are entitled to some assurance of a reliable and sufficient water supply. This consumer protection goal dictates in favor of a relatively low minimum size.

Washington may be the most stringent in requiring each applicant of any building requiring potable water to obtain a permit demonstrating adequate water supply,[16] with Montana also requiring such a demonstration for a subdivision of one or more parcels.[17] Colorado counties must ensure an adequate supply for any division of land into two or more parcels, [18] although the requirements applicable to Colorado cities and towns exempt developments of less than fifty units.[19] Oregon regulates subdivisions of four or more units,[20] with Nevada, New Mexico, and Washington having minimums of five.[21] Wyoming law regulates all subdivisions regardless of size, but allows local governments to exempt developments of five or fewer units.[22] California is the outlier in allowing subdivisions smaller than 500 homes to bypass its assured supply law.[23]

Water Administration (Sept. 2012), http://water.state.co.us/DWRIPub/Documents/wellpermitguide.pdf. Some Colorado localities impose even more stringent requirements, such as one county's mandate that water be available for periods as long as 300 years. *See*, *e.g.*, EL PASO CNTY., COLO., LAND DEV. CODE § 8.4.7, (Jan. 2015), http://adm.elpasoco.com/Development%20Services/Documents/Land%20Development%20Code%202016/16%20Chapter%208%20-%201-6-15.pdf.

[15] The minimum size factor is identical to the Davies factor of "granularity," but rephrased in a more universally understood term. Davies 2007, *supra* note 5, at 1286–88.

[16] WASH. REV. CODE § 19.27.097(1) (2016).

[17] MONT. CODE ANN. §§ 76-3-103(14)–(15), -104, -622(1)(e), 76-4-102(16) (2015).

[18] COLO. REV. STAT. §§ 30-28-101(10)(a), -133(3)(d), -133(6).

[19] *Id.* § 29-20-103(1)(b).

[20] OR. REV. STAT. §§ 92.010(16)–(17), 92.090(4) (2016).

[21] NEV. REV. STAT. §§ 278.320(1), .330, .360 (2015); N.M. STAT. ANN. §§ 47-6-2(M), (P)–(T), 47-6-11 (2013); WASH. REV. CODE §§ 58.17.020(1), .060, .170.

[22] WYO. STAT. ANN. § 18-5-306(a).

[23] CAL. GOV'T CODE § 66473.7(a)(1) (2016).

D. Integration[24]

The assurance that adequate water supplies will be available for a particular proposed development, while critically important, is only one component of better integration between water and land use planning. In order to move toward more sustainable supplies in the western states, a broader, regional analysis will be necessary, with local decision-making guided by these regional considerations and goals. Analysis of future population projections, anticipated additional development in the water supplier's service area, depletion of regional surface and ground water resources, comparisons of per capita water use, and climate change impacts on available supplies are all factors relevant to wise land and water planning. These broader considerations are generally not factored into the individual water adequacy determinations.

Recognizing that regional, integrated land and water planning is very difficult, and may be viewed as running counter to the highly valued concept of local control, a good step in the right direction is having a connection between regional planning goals and the assured water supply determination for any particular development. The desired outcomes and recommendations concerning water supplies and use in a county comprehensive plan or a state planning document may be factored into the local land use decision process, including the water adequacy analysis. This is what is meant by integration. The existence of integrated water adequacy and broader water planning laws is currently not widespread, but the trend seems to be in this direction, demonstrating recognition that individual, "one-off" adequacy determinations do not provide a complete answer to concerns about regional sustainability.

Arizona and California have the most advanced integration of the assured water supply analysis with regional or statewide water goals. Arizona's Active Management Areas have each established goals for reduction in groundwater use (for example, achieving "safe yield" by a date certain).[25] The amount of water available to each subdivision undergoing an assured water supply determination is calculated consistently with the

---

[24] This "integration" evaluation criterion overlaps to some extent with the Davies factor of "interconnectedness," but with a slightly different focus. The Davies interconnectedness factor focuses on the connection with the land use jurisdiction's broader planning processes and conservation initiatives. Davies 2007, *supra* note 5, at 1289–91. "Integration" also relates to the connection to other components of the local government's planning, but focuses specifically on whether a more broadly applicable comprehensive plan or equivalent document sets water use goals that are then implemented in the local land use decision process. The term "integration" is more commonly utilized as a characterization of a tighter relationship between water and land use planning.

[25] ARIZ. REV. STAT. § 45-562 (LexisNexis 2016); *Office of Assured & Adequate Water Supply Program*, ARIZ. DEP'T WATER RES., http://www.azwater.gov/AzDWR/WaterManagement/AAWS/default.htm (last updated June 8, 2016).

applicable management goal pursuant to a detailed and precise methodology set forth in the administrative rules.[26] In California, the Urban Water Management plans required of large municipal suppliers are taken into account in the water supply assessment performed for each development project.[27] The Urban Water Management plan is not necessarily a regional plan, but the new development's water source is at least fit into the context of the overall supplies of the relevant municipal provider. In addition, the California Sustainable Groundwater Management Act now requires that the groundwater sustainability plans to be developed by local agencies over the next four to six years be provided to any city or county proposing to adopt or amend its general (comprehensive) plan, together with a report on the anticipated effect of the new or amended plan on groundwater sustainability.[28]

An example of a nascent integrated assured water supply law comes from the state of Washington. Washington's Growth Management Act requires that covered counties and cities adopt comprehensive plans guided by goals that include protection of the environment and the availability of water.[29] The comprehensive plans must provide for protection of groundwater used for public water supplies.[30] In rural areas, the plans must also protect both surface water and groundwater resources.[31] The subdivision regulations of local land use authorities must implement the provisions of the comprehensive plans.[32] The state's Department of Ecology has issued guidance to assist counties in making adequacy of water supply determinations.[33] While these requirements are designed to foster a more comprehensive and regional look at water supply availability, they appear to require simply that cities and counties ascertain that water is legally, as well as factually, available.[34] Washington does not establish regional water use goals that are implemented through local land use decisions.

---

[26] ARIZ. ADMIN. CODE §§ R12-15-721 to -727 (2014).
[27] CAL. WATER CODE § 10910(c)(3) (2016).
[28] CAL. GOV'T CODE § 65352.5(d).
[29] WASH. REV. CODE § 36.70A.020(10) (2016).
[30] *Id.* § 36.70A.070(1).
[31] *Id.* § 36.70A.070(5)(c)(iv).
[32] *Id.* §§ 36.70A.040(3)–(4), 58.17.110; *Kittitas Cnty. v. E. Wash. Growth Mgmt. Hearings Bd.,* 256 P.3d 1193 (Wash. 2011).
[33] Guidance to Counties for Determining Water Availability When Processing Applications for Subdivisions and Building Permits, WASH. DEP'T ECOLOGY (Oct. 8, 2013), http://www.ecy.wa.gov/programs/wr/wrac/images/pdf/10082013-draft-wateravail-guidance.pdf [hereinafter *Ecology Guidance to Counties*].
[34] *Kittitas,* 256 P.3d at 1210.

E. Conservation[35]

Because water scarcity is a way of life in the western United States, state legislatures have in some cases been considering overall mandates or incentives to reduce water use, incorporate water saving features, and provide detailed information on existing uses designed to enable comparisons among jurisdictions or water supplier service areas. The concept of "conservation" takes different forms in different states and regions, but is used here to incorporate equipment or programs designed to reduce water waste and overall consumption. States that have adopted water conservation dictates have done so based on explicit findings that availability of reliable supplies is a statewide concern and that reduction in per capita or per unit usage can be the most economic means of ensuring a sustainable water future.[36] Many such state laws exist independently from the state's assured water supply requirements or local development approval processes. This analysis looks only at those conservation requirements that are integrated into the land use approval process, while recognizing that many beneficial and forward-looking water conservation laws are wholly independent.[37]

Arizona's Groundwater Management Act includes specific requirements for large municipal water suppliers to implement water conservation measures that result in water use efficiency in their service areas.[38] The conservation programs, mandatory within the Active Management Areas, include conservation education, physical equipment, and outdoor watering restrictions, as well as rebates and incentives for the adoption of water efficiency equipment.[39] The review of each proposed subdivision's water supply is evaluated in accordance with these conservation requirements.[40]

---

[35] The "conservation" factor is not included in the Davies factors, but is proposed here as reflective of recent trends in state water statutes to address water conservation or wise use on a statewide basis.

[36] *See, e.g.,* 2004 Colo. Sess. Laws Ch. 373, Sec. 1, pp. 1777-78; CAL. WATER CODE §§ 520 to 522 (2016); CAL. CODE REGS. Tit. 23, Div. 3, Ch. 2, §§ 863 to 866 (2016).

[37] *See, e.g.,* COLO. REV. STAT. §§ 6-7.5-101 to -103 (2016) (requirements for indoor WaterSense fixtures); COLO. REV. STAT. §§ 37-60-126(11), 38-33.3-106.5(i) (bans on restrictive covenants prohibiting low water use landscaping) COLO. REV. STAT. §§ 37-97-102, -103(1) (mandatory metering); CAL. WATER CODE §§ 525 to 528 (2016) (mandatory metering). *See also* Cal. Exec. Order B-37-16 (2016), *available at* https://www.gov.ca.gov/docs/5.9.16_Executive_Order.pdf.

[38] ARIZ. REV. STAT. §§ 45-563, -567, -567.01 (LexisNexis 2016); ARIZ. ADMIN. CODE § R12-15-721 (2014); *see also Modified Non-Per Capita Conservation Program*, ARIZ. DEP'T WATER RES., http://www.azwater.gov/AzDWR/WaterManagement/AMAs/ModifiedNon-PerCapita.htm (last updated Mar. 5, 2015).

[39] ARIZ. REV. STAT. §§ 45-567.01; *see also Best Management Practices Applicable to All Service Areas*, ARIZ. DEP'T WATER RES. (Dec. 11, 2008), http://www.azwater.gov/azdwr/WaterManagement/AMAs/documents/BMPsApplicabletoAll.pdf.

[40] ARIZ. ADMIN. CODE § R12-15-721.

New Mexico law requires counties to adopt regulations governing subdivision plats that include requirements for water conservation measures.[41] No more specificity is provided concerning how conservation measures must be considered in the subdivision approval process. Colorado's assured water supply provisions require an applicant for any development permit to provide a description of water conservation and demand management measures, if any, that may be implemented within the development.[42] The statutory language makes it clear that water conservation measures are not mandatory. California has enacted legislation mandating a twenty percent reduction in urban per capita water use on or before December 31, 2020,[43] but this goal does not appear to be explicitly tied into the land use approval process.

F. Other Possible Evaluation Factors

These five factors described above (universal, uniform expert review, minimum size, integration, and conservation) capture most of the significant components and differences in the assured water supply laws in the western states. They are not, however, fully inclusive of the parameters that could be considered in an evaluation of effectiveness. Two other features of such laws may also be relevant and are discussed further. These two factors are not included in the matrix comparison among the states provided in this paper, for the reasons discussed below.

Effect of Inadequacy Determination: While most Western states have some form of compulsory assured water supply law, at least in certain areas, the consequences of failing to prove adequate water supplies may be different. In some states, a failure to demonstrate an adequate water supply is fatal to a development approval.[44] Arizona, for example, requires strict compliance in its Active Management Areas in demonstrating adequate water supply prior to subdivision approval. The Arizona Department of Real Estate will not issue a public report for a development in these areas, which allows the developer to sell lots, without such a demonstration.[45] In other states, however, the governing body of the local jurisdiction may overcome a finding of inadequacy. Wyoming gives local governments discretion to approve a subdivision that has not proven an assured water supply,[46] similar to California,[47] Colorado,[48]

---

[41] N.M. STAT. ANN. § 47-6-9(A)(4) (LexisNexis 2016).
[42] COLO. REV. STAT. § 29-20-304(1)– to (2) (2016).
[43] CAL. WATER CODE § 10608.16(a).
[44] *See e.g.,* ARIZ. REV. STAT. § 45-576(C); N.M. STAT. ANN. § 47-6-11(D).
[45] ARIZ. REV. STAT. § 45-576(C).
[46] WYO. STAT. ANN. § 18-5-308(c) (2016) (referring to the board of county commissioners' ability to approve a subdivision notwithstanding an adverse recommendation by the Wyoming Department of Environmental Quality).
[47] CAL. WATER CODE § 10911(a); *see also* CAL. DEP'T WATER RES., *Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001* 39 (Oct. 8, 2003),

Montana,[49] and Nevada,[50] but disclosure of the adverse decision must be provided to potential home purchasers. The requirement for disclosure is viewed by these states as a suitable substitute for a determination that there is an adequate supply, leaving the final choice to the homebuyer's discretion. As a result, this factor is not included as a distinguishing factor among the state laws in the comparison matrix.

Compulsory. The compulsory nature of an assured water supply law is a factor that has been suggested for evaluation of effectiveness, that is, whether the law mandates an assessment of the availability of sufficient water or merely suggests that consideration of water supply would be a nice idea.[51] Obviously, compulsory requirements are more likely to advance the water goals than a discretionary recommendation that may or may not be followed. The compulsory factor has not been included in this analysis, however, because in all of the western states examined that have assured water supply laws, the laws are compulsory, not simply suggestions. While the assured supply determination may not be required in all areas or circumstances, if it is applicable, it is mandatory. None of the states reviewed here that has an assured water supply law allows it to be discretionarily applied. Thus, the compulsory factor does not provide a mechanism for distinguishing among the different laws or providing a measure of effectiveness.

III. COMPARISON OF STATE ASSURED WATER SUPPLY LAWS

The chart below provides an evaluation of the water adequacy laws of the nine states examined in this paper against the five criteria discussed above. Idaho and Utah are not included because those states do not have laws addressing the determination of water adequacy in the land use approval process for new development.

http://www.water.ca.gov/pubs/use/sb_610_sb_221_guidebook/guidebook.pdf [hereinafter CAL. DEP'T WATER RES. GUIDEBOOK].

[48] COLO. REV. STAT. § 30-28-136(1)(h)(I).

[49] MONT. CODE ANN. § 76-3-608 (2015).

[50] NEV. REV. STAT. § 278.377(1)(b) (2015).

[51] Davies 2007, *supra* note 5, at 1280–82.

State	Universal	Uniform Expert Review	Minimum Size[52]	Integration	Conservation
Arizona	Yes[53]	Yes	6	Yes[54]	Yes
California	Yes	No[55]	500	Yes	No
Colorado	Yes	County-Yes Local Gov't-No	County-2 Local Gov't-50	No	No
Montana	Yes	Yes[56]	1	No	No
Nevada	Yes	Yes	5	No	No
New Mexico	No[57]	Yes	5	No	Yes
Oregon	Yes	No	4	No	No

[52] Minimum number of lots in a new subdivision that triggers a water adequacy determination.

[53] Arizona requires a water adequacy determination for new development inside its Active Management Areas (AMAs) before lots can be sold. ARIZ. REV. STAT. § 45-576 (2014). Outside of AMAs, a determination as to whether sufficient supply will be available is required, but lots can be sold even if the determination is adverse, with proper disclosure to potential buyers. This disclosure requirement is similar to those applicable in California, Colorado, Montana, Nevada, and Wyoming. *See supra* text accompanying notes 46–50.

[54] Subdivision approval in AMAs requires a demonstration of consistency with the applicable Groundwater Management Plan. ARIZ. REV. STAT. §§ 45-562. Outside of AMAs, the water adequacy determination is made without reference to a regional plan. ARIZ. ADMIN. CODE §§ R12-15-712 to -713 2014).

[55] California has detailed requirements for verification that sufficient water supplies are available to support the proposed subdivision (CAL. GOV'T CODE § 66473.7 (2016)) and for the preparation of water supply assessments by public water systems to support development approvals (CAL. WATER CODE § 10910), but there is no uniform review of either the verification or assessment by an independent agency with expertise.

[56] The Montana Department of Environmental Quality is authorized to review the sufficiency of subdivision water supplies, but can delegate that review authority to qualified local agencies or boards of health under limited circumstances. MONT. CODE ANN. § 76-4-104 (2015).

[57] Development in unincorporated areas of counties in New Mexico are required to demonstrate that water of sufficient quantity will be available. N.M. STAT. ANN. § 47-6-11(D) (2016). Within municipalities, proof of adequate water supply is required only for subdivided land from which appurtenant irrigation water rights have been severed. *Id.* §§ 3-20-9.1, 47-6-11(F)(1) (2016).

Washington	Yes[58]	No[59]	Subdivision-5[60] Bldg. Permit-1	No[61]	No
Wyoming	No[62]	No	6	No	No

IV. SUMMARIES OF STATE ASSURED WATER SUPPLY LAWS

Following are summaries of the laws of eleven western states addressing the assurance that adequate water will be provided for new development. The states included are: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. It should be emphasized that these are summaries and do not delve into the very detailed provisions found in many of the state assured water supply laws. For example, most states have a specific definition of what constitutes a "subdivision" for the purpose of determining when a water adequacy determination is necessary. These definitions are, however, subject to multiple, particularized exceptions, which have not been detailed here. Footnotes provide the references to the statutory provision

---

[58] Washington law requires all counties, cities, and towns to make written findings that appropriate provisions have been made for potable water supplies. WASH. REV. CODE § 58.17.110(2) (2016). The additional provisions of the Washington Growth Management Act (GMA), as interpreted by the Washington Supreme Court, are specifically applicable, however, only to those jurisdictions that are required or choose to plan under the GMA, but it is not clear that the water adequacy determinations made by non-GMA covered jurisdictions are allowed to be less rigorous. *See id.* §§ 36.70A.020(10), 36.70A.040, 36.70A.070(1), 58.17.110. *Kittitas Ctv. v. E. Was. Growth Mgmt. Hearings Bd.*, 256 P.3d 1193, 1209–10 (2011). The guidance provided by the Washington Department of Ecology for determining water availability for subdivisions and building permits appears to be directed to all counties and does not distinguish between counties governed by the GMA and those that are not. *Ecology Guidance to Counties*, *supra* note 33.

[59] The *Kittitas* decision makes it clear that local land use authorities are required to make the determination that adequate water is legally and physically available to support the intended use with assistance from the Washington Department of Ecology. *Kittitas*, 256 P.3d at 1210. Ecology's guidelines are designed to assist local governments with the determination of adequacy, but Ecology is not required to be involved in the land use decision process. *Ecology Guidance to Counties*, *supra* note 32.

[60] A city or county that has adopted a comprehensive plan under Washington's Growth Management Act may increase the number of lots governed by the subdivision provisions to a maximum of nine in any urban growth area. WASH. REV. CODE § 58.17.020(6) (2016).

[61] The comprehensive plans of Washington local governments must address protection of availability of water, ground water quality, and the environment, and local subdivision regulations must implement these provisions. The water adequacy determination does not appear, however, to consider regional goals for water use. *See supra* text accompanying notes 29–34.

[62] Subdivisions in unincorporated areas of counties are required to demonstrate the adequacy of the proposed water supply. WYO. STAT. ANN. § 18-5-306(a)(vi) (2015). Cities are not required by state law to perform a water adequacy determination.

defining a subdivision, and these provisions can be examined to identify exceptions if desired.

A note on the concept of "exempt wells" is also in order. Many, but not all, western states provide for certain domestic wells to be exempt from permitting requirements and/or from administration under the priority system governing other water rights.[63] Exempt wells typically have restrictions on flow rates, annual volume of withdrawal, and/or number of dwellings served.[64] Some states allow domestic wells to provide limited outdoor irrigation water or serve a small number of domestic animals.[65] Other states allow exempt wells only in areas that are not considered over-appropriated.[66] This information is well summarized in other publications,[67] and this article does not attempt to address the details of domestic well exemptions.

Collections of exempt wells are, however, sometimes used, or sought to be used, to serve new subdivision development, which can effectively thwart the water adequacy determination otherwise applicable. If each residence in a development of one hundred lots is served by an individual exempt well, the cumulative water quantity implications are significant, the minimum size limitation for a water adequacy review is effectively undermined, and a disincentive for developers to provide a central water system is created. Several states have grappled with circumvention of their assured water supply laws in this manner and have prohibited or limited the use of exempt wells for subdivisions.[68] These efforts are noted in the individual state summaries.

---

[63] *See, e.g.,* COLO. REV. STAT. § 37-92-602 (2016); IDAHO CODE §§ 42-227, 42-111 (2016).

[64] *See, e.g.,* ARIZ. REV. STAT. §§ 45-402(8), 45-454 (2014); COLO. REV. STAT. § 37-92-602(1) (2016); NEV. REV. STAT. § 534.180 (2015).

[65] *See, e.g.,* COLO. REV. STAT. § 37-92-602(1)(b) (2016); IDAHO CODE § 42-111 (2015); N.M STAT. ANN. § 72-12-1.1 (2016).

[66] *See, e.g.,* MONT. CODE. ANN. § 85-2-506 (2015); WYO. STAT. ANN. § 41-3-915(a)(i) (2015).

[67] *See*, NAT'L GROUND WATER ASS'N, THE REGULATION OF EXEMPT WELLS IN THE WEST, NGWA INFORMATION BRIEF (July 29, 2015); Jesse J. Richardson, Jr., *Existing Regulation of Exempt Wells in the United States,* 148 J. CONTEMP. WATER RES. & EDUC. 3–9 (Aug. 2012); WATER SYS. COUNCIL, AN ANALYSIS OF REGULATION OF EXEMPT WELLS IN THE WEST: AN OVERVIEW AND STATE-BY-STATE COMPENDIUM, SPECIAL REPORT NO. 7 (Jan. 2011).

[68] *See* COLO. REV. STAT. § 37-92-602(3)(b)(III); *Clark Fork Coalition v. Tubbs*, No. BDV-2010-874 (Mont. First Jud. Dist. Ct., Oct. 17, 2014); COMBINED APPROPRIATION GUIDANCE, MONT. DEP'T NATURAL RES. & CONSERVATION (Sept. 18, 2015), *available at* http://dnrc.mt.gov/divisions/water/water-rights/docs/external-ca-10-07-2015-final.pdf; WASH. REV. CODE. § 90.44.050; *Dep't of Ecology v. Campbell & Gwinn*, LLC, 43 P.3d 4 (Wash. 2002).

ARIZONA

The Assured Water Supply Program, which applies to areas of significant groundwater depletion that have been designated as Active Management Areas, and the Adequate Water Supply Program, which applies to all other areas, create Arizona's assured water supply framework. Both programs are discussed below.

Assured Water Supply Program

Brief Description:

Arizona's Assured Water Supply Program was created as part of the 1980 Groundwater Management Act and operates within Arizona's five Active Management Areas (AMAs).[69] AMAs are those areas of the state where significant groundwater depletion has occurred and include portions of Maricopa, Pinal, Pima, Santa Cruz, and Yavapai Counties.[70] Applicants are required to demonstrate an assured water supply that will be physically, legally, and continuously available for the next 100 years before the developer can record plats or sell parcels.[71] The Arizona Department of Real Estate (ADRE) will not issue a public report, which allows the developer to sell lots, without a demonstration of an assured water supply.[72] The developer can demonstrate a 100-year supply by satisfying the requirements to obtain a Certificate of Assured Water Supply or by a written commitment of service from a provider with a Designation of Assured Water Supply—both documents are issued by the Arizona Department of Water Resources (ADWR).[73]

Applies to:

The Assured Water Supply Program applies when a subdivision is being developed,[74] and thus it is driven by the ADRE's definition of a subdivision: "improved or unimproved land or lands divided or proposed to be divided for the purpose of sale or lease, whether immediate or future, into six or more lots, parcels[,] or fractional interests."[75] "This includes residential or commercial subdivisions, stock cooperatives, con-

---

[69] *History of Water Management in Arizona*, ARIZ. DEP'T WATER RES., http://www.azwater.gov/AzDWR/PublicInformationOfficer/history.htm (last updated Mar. 27, 2014).

[70] ARIZ. REV. STAT. §§ 45-401 to -403, -411 (LexisNexis 2016); ARIZONA WATER ATLAS, VOL. 8, FIG. 8.0-1, http://www.azwater.gov/AzDWR/StatewidePlanning/WaterAtlas/ActiveManagementAreas/default.htm (last updated Mar. 27, 2014).

[71] ARIZ. REV. STAT. § 45-576(J).

[72] *Id.* § 45-576(C).

[73] Id. § 45-576(A); see Office of Assured & Adequate Water Supply Program, supra note 25.

[74] ARIZ. REV. STAT § 45-576(A).

[75] *Id.* § 32-2101(56)(a); *see also id.* § 32-2181(E)(1) (excluding lots, parcels, or fractional interests thirty-six acres or more in area).

dominiums, and all lands divided or proposed to be divided as part of a common promotional plan (including golf courses, parks, schools, and other amenities)."[76] For the purpose of the Assured Water Supply Program, subdivisions do not include short-term leases (12 months or less) or subdivisions where all parcels are greater than thirty-six acres in size.[77]

Process and Criteria:

The two means for a developer to demonstrate assured water supply are the Certificate of Assured Water Supply ("Certificate") or by a written commitment of service from a provider that has obtained a Designation of Assured Water Supply ("Designation").[78] A Certificate is necessary for subdivided land that is not served by a designated water provider.[79] For a Certificate, applicants must demonstrate all of the following:[80]

> **(1) Physical water availability:** If the proposed source of water is groundwater, the applicant must submit a hydrologic study, which the Director of ADWR then uses to determine the volume of water that will be physically available for the proposed use.[81] The study must consider demands of area users for a 100-year period, and projected water levels after 100 years may not exceed the depth limitations specified in the rules.[82] For proposed surface water supplies, the Arizona administrative regulations prescribe the analysis the Director of ADWR must perform to determine the amount of water available, which differs depending upon the specific source.[83]
>
> **(2) Legal water availability:** Applicants are required to submit evidence that sufficient supplies will be legally available for at least 100 years.[84]
>
> **(3) Continuous water availability: "**Water providers or developers must demonstrate that the water supply is uninterruptible for the 100-year period, or that sufficient back-

---

[76] *See Office of Assured & Adequate Water Supply*, *supra* note 25; ARIZ. REV. STAT. § 32-2101(56)(b).

[77] ARIZ. REV. STAT. § 32-2101(56)(c) (also details additional exceptions to the definition of "subdivision").

[78] *Id.* § 45-576(A); *see Office of Assured & Adequate Water Supply*, *supra* note 25.

[79] Ariz. Rev. Stat. § 45-576.

[80] *Id.*; ARIZ. ADMIN. CODE. § R12-15-704(F) (2014); *see Office of Assured & Adequate Water Supply*, *supra* note 2525.

[81] ARIZ. ADMIN. CODE § R12-15-716(B).

[82] *Id.* §§ R12-15-704(F)(3), -716(B)(3).

[83] *Id.* § R12-15-716(E) to (H).

[84] *Id*. §§ R12-15-704(F)(2), -718(A).

up supplies exist for any anticipated shortages."[85] This includes evidence that adequate delivery, storage, and treatment works will be in place.[86]

(4) Financial capability: "Water providers or developers must demonstrate financial capability to construct the water delivery system and any storage or treatment facilities."[87] "Financial capability for developers is typically considered through the local government's subdivision review process."[88]

(5) Water quality: "Proposed sources of water must satisfy existing state water quality standards and any other quality standards applicable to the proposed use after treatment."[89]

(6) Consistency with the management goal: All five AMAs have water management goals related to reduction in groundwater use.[90] The amount of water available to the subdivision is calculated consistently with the management goal for the particular AMA, taking into account the groundwater allowance and extinguishment credits applicable.[91]

(7) Consistency with the management plan: "Each AMA's Groundwater Management Plan prescribes water conservation requirements for municipal water providers."[92] "Water demand associated with proposed subdivisions of more than 50 lots is evaluated in accordance with these conservation requirements."[93]

As an alternative to the developer applying for a Certificate, a written commitment of service from a designated provider will suffice to meet the assured water supply requirement.[94] A water provider offering a written commitment must secure a Designation for the entire service ar-

---

[85] *Office of Assured & Adequate Water Supply*, *supra* note 25; ARIZ. ADMIN. CODE § R12-15-717(A).
[86] ARIZ. ADMIN. CODE § R12-15-717(A).
[87] *Office of Assured & Adequate Water Supply*, *supra* note 25; ARIZ. ADMIN. CODE § R12-15-720(A).
[88] *Office of Assured & Adequate Water Supply*, supra note 25.
[89] *Office of Assured & Adequate Water Supply*, *supra* note 25; ARIZ. ADMIN. CODE § R12-15-719(A).
[90] ARIZ. ADMIN. CODE § R12-15-704(F)(7); ARIZ. REV. STAT. § 45-562; *Office of Assured & Adequate Water Supply*, *supra* note 25.
[91] Ariz. Admin. Code § R12-15-722.
[92] *Office of Assured & Adequate Water* Supply, *supra* note 25; ARIZ. ADMIN. CODE § R12-15-704(F)(6); ARIZ. REV. STAT. §§ 45-563, -567, -567.01.
[93] *Office of Assured & Adequate Water Supply*, *supra* note 25; ARIZ. ADMIN. CODE § R12-15-721.
[94] Ariz. Rev. Stat. § 45-576.

ea.[95] A Designation means that the provider has a water supply sufficient to provide a 100-year supply for its current, committed, and projected future demand for the term of the Designation and has met the seven criteria listed above.[96] "The most populous cities within most AMAs have obtained a Designation, thereby satisfying the assured water supply requirements of the majority of new subdivisions without the need for a hydrologic study or obtaining a Certificate."[97]

Who makes the determinations?

The Director of ADWR makes the final determination for a Certificate and Designation.[98] If the Director finds that the application for a Certificate meets the criteria, public notice is posted for two consecutive weeks in a local newspaper.[99] A fifteen-day protest period follows.[100] If no protests are received, a Certificate is issued.[101]

A city, town or county may approve a subdivision plat only if the sub-divider has obtained a Certificate or the sub-divider has obtained a written commitment of service from a provider with a Designation.[102]

The ADRE will not issue a public report, which allows the developer to sell lots, without a demonstration of a Certificate or written commitment of water service for the subdivision from a city, town, or private water company having a Designation of an assured water supply.[103]

Process to Contest Determinations:

Review of the Director of ADWR's decisions is obtained pursuant to the Arizona administrative hearing procedures.[104] The administrative hearing must be conducted in the AMA in which the use is located.[105]

Adequate Water Supply Program

Brief Description:

The Adequate Water Supply Program—first created in 1973—operates outside of the AMAs as a consumer protection measure against the marketing of lots without available water supplies.[106] Similar to the

---

[95] *Office of Assured & Adequate Water Supply*, supra note 25.
[96] Ariz. Admin. Code § R12-15-710.
[97] *Office of Assured & Adequate Water Supply, supra* note 25.
[98] Ariz. Rev. Stat. § 45-576(A); Ariz. Admin. Code § R12-15-710.
[99] *Id.* § 45-578.
[100] *Id.* § 45-578(B).
[101] *Id.* § 45-578(D).
[102] *Id*. § 45-576(B).
[103] *Id*. § 45-576(C).
[104] *Id*. §§ 45-578, 45-114, 41-1092.
[105] *Id*. § 45-578(G).
[106] *Id*. § 45-108; *Water Adequacy Program Summary*, ARIZ. DEP'T WATER RES. (NOV. 2001),

Assured Water Supply Program, developers are required to obtain a determination from ADWR concerning the quantity and quality of water available before a subdivision can be approved and before the ADRE will allow any lot sales.[107] A developer can also provide a written commitment of service from a designated provider to meet the adequacy requirement. [108] If the application for a water adequacy determination successfully demonstrates that water of sufficient quality will be physically, legally, and continuously available for the next 100 years and that the developer has the financial capability to construct the necessary facilities, then the ADWR will determine the water supply to be adequate.[109]

If the water supply is determined to be inadequate, the developer may still sell lots, but the inadequacy determination must be disclosed to potential buyers in the public report approved by the ADRE and in all promotional materials.[110] The ADRE is required to advise prospective home buyers on its website to investigate water availability before purchasing real estate and to provide links to the ADWR website showing areas outside of AMAs that have been determined to have adequate or inadequate supplies.[111]

Applies to:

In areas outside of AMAs, prior to the recordation of the plat, the developer of a proposed subdivision, including dry lot subdivisions, must submit plans for the water supply for the subdivision and demonstrate the adequacy of the water supply to meet the needs projected by the developer to ADWR.[112] For the purpose of this requirement, a subdivision has the same definition, a division into six or more lots, as in the Assured Water Supply Program.[113] Developers must obtain a water adequacy determination before the local platting entity (city, town, or county) can approve a final plat.[114] A Water Report is a letter issued to the ADRE by the ADWR for a subdivision stating whether an adequate water supply exists.[115] The requirement is simply that a Water Report be issued, not that it contain a determination that the water supply is adequate.

---

http://www.azwater.gov/AzDWR/WaterManagement/AAWS/documents/WADSumm_000.pdf.

[107] ARIZ. REV. STAT. §§ 45-108(A), 32-2183(H).
[108] *Id.* § 45-108(C), (E).
[109] *Id.* § 45-108(B), (I).
[110] *Id.* § 32-2181(F)(2).
[111] *Id.* § 32-2119(A).
[112] *Id.* § 45-108(A).
[113] *Id.* §§ 32-2101(56)(a), 32-2181(E).
[114] *Water Adequacy Program Summary*, Ariz. Dep't Water Res. (Nov. 2001).
[115] ARIZ. ADMIN. CODE § R12-15-701(66).

Both cities and counties are authorized to adopt regulations providing that no final plat for a subdivision will be approved without a 100-year water adequacy determination from ADWR.[116] Those areas ("mandatory adequacy jurisdictions")[117] require a developer to apply for and provide a Water Report demonstrating adequate water supply or a written commitment of service from a provider with a Designation prior to completing the final plat approval process.[118] If a county adopts such a regulation, all the cities and towns within the county must also require a water adequacy determination or commitment from a designated provider before approving a final plat.[119]

Process and Criteria:

The analysis performed by the Director to make the adequacy determination mirrors the first five criteria listed above in the Assured Water Supply Program (physical, legal, and continuous water availability, financial capability, and water quality).[120] Applicants that do not meet all five of the listed criteria will receive a Water Report finding inadequate water supply.[121]

In the alternative, a developer may submit a written commitment of service from a water provider with a Designation.[122] In order to receive a Designation, the water provider must meet all five of the above listed criteria.[123]

Who makes the determinations?

The Director of the ADWR makes the determination for a Water Report demonstrating adequate or inadequate water supply.[124] The Direc-

---

[116] ARIZ. REV. STAT. §§ 11-823(A), 9-463.01(O).

[117] *List of Mandatory Adequacy Jurisdictions*, ARIZ. DEP'T WATER RES., http://www.azwater.gov/AzDWR/WaterManagement/AAWS/documents/List_of_Mandatory_Adequacy_Jurisdictions_2-17-09_000.pdf (last visited June 14, 2016).

[118] Office of Assured & Adequate Water Supply Program, supra note 25.

[119] ARIZ. REV. STAT. §§ 45-108(H), 9-463.01(J). Two bills passed by the Arizona state legislature in 2016 would have modified this arrangement. Senate Bill 1268 would have eliminated the applicability of a county-passed mandatory adequacy regulation to cities and towns within the county, but allowed the municipalities to adopt water adequacy requirements if they chose to do so. S.B. 1268, 52d Leg., 2d Reg. Sess. (Ariz. 2016). Senate Bill 1400 would have required county review of a previously adopted water adequacy regulation every five years with an option to rescind it. S.B. 1400, 52d Leg., 2d Reg. Sess. (Ariz. 2016). Both bills were vetoed by Governor Doug Ducey on May 9, 2016.

[120] Ariz. Admin. Code § R12-15-712.

[121] *Id.* § R12-15-713

[122] ARIZ. REV. STAT. § 45-108(E).

[123] *Id.* § 45-108(C), (I).

[124] *Id*. § 45-108(B).

tor also determines whether a water provider meets the criteria for a Designation.[125]

If the subdivision is within a mandatory adequacy jurisdiction, ADWR must publish notice of the application once each week for two consecutive weeks in a newspaper of general circulation in the groundwater basin in which the applicant proposes to use water.[126] The first publication shall occur within fifteen days after the application is determined complete.[127]

A final copy of the Director's Water Report is sent to the ADRE and the city, town, or county responsible for platting the subdivision.[128]

Process to Contest Determinations:

As with the Assured Water Supply Program, review of decisions of the Director of ADWR is obtained pursuant to the Arizona administrative hearing procedures.[129] The administrative hearing must be conducted in the groundwater basin in which the use is located.[130]

Comparing Arizona's Assured Water Supply Laws to Other States:

Arizona has one of the most comprehensive water supply programs addressing both urban growth and rural planning—at least within the AMAs. The Assured Water Supply Program creates a well-defined standard that developers, local governments, and water providers are subject to. The program is designed to be consistent with the detailed management plans and goals in each AMA.

Outside of AMAs, local governments can choose to become "mandatory adequacy jurisdictions" and then have the same requirements as those inside the AMAs. Even if this option is not exercised, a determination as to whether sufficient supply will be available is always required, but lots can be sold even if the determination is adverse, with proper disclosure to potential buyers. This disclosure requirement is similar to those applicable in California, Colorado, Montana, Nevada, and Wyoming. The requirements for continuous, legal, and physical water availability and the review of these criteria by the ADWR provide an objective assessment of water availability and protection to prospective purchasers. Detailed information is available to consumers about the areas in which

---

[125] *Id.* §§ 45-108(C), 45-108.01(E).
[126] *Id.* § 45-108.01(A).
[127] *Id.*
[128] *Id.* § 45-108(B).
[129] *Id.* §§ 45-578, 45-114, *see also id.* § 41-1092.
[130] *Id.* § 45-108.01(G).

water adequacy is required and any applicable determination of inadequacy.

CALIFORNIA

California's assured water supply program includes the California Subdivision Map Act, the Urban Water Management Act, Water Code Section 10910, and the Sustainable Groundwater Management Act. Each of these statutes is discussed below.

California Subdivision Map Act

Brief Description:

The California Subdivision Map Act ("Map Act")[131] provides that "regulation and control of the design and improvement of subdivisions are vested in the legislative bodies of local agencies."[132] Each local agency must, by ordinance, "regulate and control the initial design and improvement of common interest developments" and subdivisions creating five or more parcels.[133] Tentative maps are required to be filed and approved by the local agency in order to move to the next stage of the subdivision process.[134] For certain large developments, the tentative map must show proof of sufficient water supply from a public water system.[135]

Applies to:

The sufficient water supply requirements of the Map Act apply to any proposed residential development that is more than 500 dwelling units or, for a public water system having fewer than 5,000 service connections, any residential development that would account for an increase of ten percent or more in the number of the public water system's existing service connections.[136] Subdivisions of lesser size or impact are not required to show water supply adequacy.

Process and Criteria:

Sufficient water supply "means the total supplies available during normal, single-dry, and multiple-dry years within a 20-year projection that will meet the projected demand associated with the proposed subdivision, in addition to existing and planned future uses, including, but not limited to, agricultural and industrial uses."[137] Written verification from

---

[131] Cal. Gov't Code §§ 66410 to 66499 (West 2016).
[132] *Id.* § 66411.
[133] *Id.* §§ 66411, 66426.
[134] *Id.* §§ 66452.1, 66452.2.
[135] *Id.* § 66473.7(b).
[136] *Id.* § 66473.7(a)(1).
[137] *Id.* § 66473.7(a)(2).

the applicable public water system must be provided.[138] In determining sufficient water supply, all of the following factors must be considered:

> (1) "The availability of water supplies over a historical record of at least 20 years";[139]
>
> (2) "The applicability of an urban water shortage contingency analysis prepared pursuant to [the Urban Water Management Planning Act[140]] that includes actions to be undertaken by the public water system in response to water supply shortages";[141]
>
> (3) The reduction in water supply associated with previous commitments by the public water system;[142] and
>
> (4) "The amount of water that the water supplier can reasonably rely on receiving from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer."[143]

The written verification must also include a description "of the reasonably foreseeable impacts of the proposed subdivision on the availability of water resources for agricultural and industrial uses within the public water system's service area that are not currently receiving water from the public water system but are utilizing the same sources of water."[144] If the water supply includes groundwater, the public water system must evaluate "the extent to which it or the landowner has the right to extract the additional groundwater needed to supply the proposed subdivision."[145]

The public water system's verification must be supported by substantial evidence.[146] The substantial evidence may include:

> (1) The public water system's most recently adopted urban water management plan.[147]
>
> (2) An assessment of the reliability of its water service to its customers during normal, single dry, and multiple dry water years.[148]

---

[138] *Id.* § 66473.7(b)(1).
[139] *Id.* § 66473.7(a)(2)(A).
[140] CAL. WATER CODE § 10632 (West 2015).
[141] CAL. GOV'T CODE § 66473.7(a)(2)(B).
[142] *Id.* § 66473.7(a)(2)(C).
[143] *Id.* § 66473.7(a)(2)(D).
[144] *Id.* § 66473.7(g).
[145] *Id.* § 66473.7(h).
[146] *Id.* § 66473.7(c).
[147] *Id.* § 66473.7(c)(1); *see* CAL. WATER CODE §§ 10620-10645.
[148] CAL. GOV'T CODE §§ 66473.7(c)(1), (c)(3); CAL. WATER CODE § 10635.

> (3) A water supply assessment that was completed pursuant to explicit provisions of the California Water Code addressing the accounting for the project's water demand in the applicable urban water management plan, the supplies available during a twenty-year projection, identification of existing water entitlements, and the historical quantities of water received under those entitlements.[149]

If the written verification from the public water system "relies on projected water supplies that are not currently available," the verification must be based on all of the following to the extent applicable:

> (1) "Written contracts or other proof of valid rights to the identified water supply that identify the terms and conditions under which the water will be available to serve the proposed subdivision";[150]
>
> (2) A capital outlay program adopted by the applicable governing body for financing the delivery of a sufficient water supply;[151]
>
> (3) "Securing of applicable federal, state, and local permits for construction of necessary infrastructure associated with supplying a sufficient water supply"; and[152]
>
> (4) "Any necessary regulatory approvals that are required in order to be able to convey or deliver a sufficient water supply to the subdivision."[153]

If the written verification provided by the applicable public water system indicates that the public water system is unable to provide a sufficient water supply, then the local agency may make a finding that additional water supplies not accounted for by the public water system are, or will be, available prior to completion of the subdivision that will satisfy the sufficient water supply requirements.[154] If no verification is provided by the public water system, "then the local agency may still make a finding that sufficient water supplies are, or will be, available prior to completion of the subdivision."[155] The findings by the local agency must be supported by substantial evidence.[156]

If there is no public water system, the local agency must make a written finding of sufficient water supply based on the same criteria as

---

[149] CAL. GOV'T CODE § 66473.7(c)(2); CAL. WATER CODE §§ 10910(c) - (d).
[150] CAL. GOV'T CODE § 66473.7(d)(1).
[151] *Id.* § 66473.7(d)(2).
[152] *Id.* § 66473.7(d)(3).
[153] *Id.* § 66473.7(d)(4).
[154] *Id.* § 66473.7(b)(3).
[155] *Id.* § 66473.7(b)(4).
[156] *Id.* § 66473.7(b)(3) – (4).

specified above and identify the mechanism for providing water to the subdivision.[157] If the tentative map fails to meet the sufficient water supply requirements, it must be disapproved by the local agency.[158]

Who makes the final determination?

The legislative body of a city or county or the advisory agency approves the written verification from the water supplier.[159] An advisory agency is a designated official or an official body charged with the duty of making investigations and reports on the design and improvement of proposed divisions of real property, the imposing of requirements or conditions thereon, or having the authority by local ordinance to approve, conditionally approve, or disapprove maps.[160]

Process to Contest Determinations:

The developer may appeal any action of the advisory agency with respect to a tentative map to the appeal board established by local ordinance or, if there is no appeal board, to the legislative body within ten days after the action is taken.[161] Upon the filing of an appeal, the appeal board or legislative body will set the matter for a hearing to be held within thirty days.[162] The appeal board or legislative body has ten days to render its decision.[163] The subdivider may also appeal the action of the appeal board to the legislative body with basically the same time periods applicable.[164] Interested persons other than the developer are also authorized to appeal.[165] Judicial review is also available.[166]

California Urban Water Management Planning Act and Water Code Section 10910

Brief Description:

The Urban Water Management Planning Act ("UWMP Act")[167] was enacted in 1983 to ensure that urban water suppliers have adequate water supplies for existing and future demands.[168] The Act requires every urban

---

[157] *Id*. § 66473.7(e).
[158] *Id*. § 66473.
[159] *Id*. § 66473.7(b)(1).
[160] *Id*. § 66415.
[161] *Id*. § 66452.5(a)(1)–(2).
[162] *Id*. § 66452.5(a)(3).
[163] *Id*.
[164] *Id*. § 66452.5(b).
[165] *Id*. § 66452.5(d).
[166] *See id*. § 66499.37 (providing a ninety-day window to commence the action).
[167] Cal. Water Code §§ 10610-10657. .
[168] *Id*. § 10610.2; *Update on Status of Urban Water Management Plans*, CAL. WATER COMM'N, 1 (Jan. 16, 2013), https://cwc.ca.gov/Documents/2013/01_January/January2013_Agenda_Item_8_UrbanWaterManagementPlans_Final.pdf.

water supplier to submit Urban Water Management Plans ("UWM Plans") to the Department of Water Resources, including information on water supply reliability and water use efficiency measures.[169] The UWM Plans assess current demands and supplies over a twenty-year planning horizon and address methods to ensure reliable and adequate water service to meet the needs of the various categories of customers during normal, single dry, and multiple dry years.[170]

Senate Bill 610, adopted in 2001 as a companion measure to the water sufficiency provisions of the Map Act described above, amended state law to improve the link between information on water supply availability and land use decisions made by cities and counties.[171] Senate Bill 610 amended portions of the UWMP Act, as well as California Water Code Sections 10910 to 10915 on water supply planning, and specified that water assessments must be furnished to local governments for inclusion in any environmental documentation for large projects subject to the California Environmental Quality Act.[172]

Applies to:

The UWMP Act requires every urban water supplier to prepare and adopt a UWM Plan and update it every five years.[173] An urban water supplier can be "either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually."[174]

Senate Bill 610 and Water Code Sections 10910 *et seq*. govern residential projects consisting of more than 500 dwelling units and certain types of commercial developments.[175] This is similar to the subdivision requirement in the Map Act. Senate Bill 610, however, also applies to a "project" that "would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project." [176] This could include water intensive projects of less than 500 residential units, depending on how the local agencies define the typical water demand for a 500-unit residential project.

Process and Criteria:

---

[169] CAL. WATER CODE §§ 10620(d)(1), 10621(d) – (e), 10631(c).
[170] *Id.* § 10631(a),(c)
[171] CAL. DEP'T WATER RES. GUIDEBOOK, *supra* note 47, at iii..
[172] *Id.*
[173] CAL. WATER CODE §§ 10620(a) to 10621(a).
[174] *Id*. § 10617.
[175] *Id*. § 10912(a).).
[176] *Id*. § 10912(a)(7).

The very detailed required contents of a UWM Plan are listed in California Water Code sections 10630 to 10635.[177] The following is a general overview of the information required:

> (1) Description of the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning with the population estimates provided in five-year increments to twenty years;[178]
>
> (2) The existing and planned sources of water available to the supplier over the same five-year increments, with special provisions governing groundwater supplies;[179]
>
> (3) Description of the reliability of the water supply and vulnerability to seasonal or climatic shortage for average, single dry, and multiple dry water years;[180]
>
> (4) Description of the opportunities for exchanges or transfers of water on a short-term or long-term basis;[181]
>
> (5) Quantification of the past and current water use over the five-year increments;[182]
>
> (6) Description of the supplier's water demand management measures, including water waste prevention ordinances, metering, conservation pricing, public education and outreach, and other measures that have a significant impact on water use as measured in gallons per capita per day;[183]
>
> (7) An urban water shortage contingency analysis;[184]
>
> (8) Information on recycled water and its potential for use as a water source in the service area of the urban water supplier;[185]
>
> (9) Information relating to the quality of existing sources of water available to the supplier over the same five-year increments and the manner in which water quality affects water management strategies and supply reliability; [186]
>
> (10) A comparison of the total water supply sources to total projected water use over the next twenty years[187]

---

[177] *See also* CAL. DEP'T WATER RES. GUIDEBOOK, *supra* note 47.
[178] CAL. WATER CODE § 10631(a).).
[179] *Id.* § 10631(b).).
[180] *Id*. § 10631(c).
[181] *Id*. § 10631(d).
[182] *Id*. § 10631(e).
[183] *Id*. § 10631(f)(1)(B).
[184] *Id*. § 10632.
[185] *Id*. § 10633.
[186] *Id*. § 10634.
[187] *Id*. § 10635(a).

The preparation of the UWM Plan must be coordinated with local agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies.[188]

The city or county considering a proposed development project will identify the public water system that will supply water to the property and obtain or prepare a Water Supply Assessment (WSA).[189] As part of the WSA, the city or county must request each public water system that may supply water to the proposed project to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted UWM Plan.[190] If the projected water demand associated with the proposed project was accounted for in the most recently adopted UWM Plan, the public water system may incorporate that information in preparing the WSA.[191] If the projected water demand associated with the proposed project was not accounted for in the most recently adopted UWM Plan of the water supplier, or the public water system has no UWM Plan, the WSA must include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a twenty-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.[192]

The following information must be included in a WSA:

> (1) "[A]n identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system."[193]
>
> (2) "If no water has been received in prior years by the public water system . . . under the existing water supply entitlements water rights, or water service contracts, . . . an identification of the other public water systems or water service contractholders [sic] that receive a water supply or have existing water supply entitlements, water rights, or water service contracts to the same source of water."[194]

---

[188] *Id.* § 10620(d)(2).
[189] *Id.* § 10910(b), (d).
[190] *Id.* § 10910(b)(1), (c)(1).
[191] *Id.* § 10910(c)(2).
[192] *Id.* § 10910(c)(3).
[193] *Id.* § 10910(d)(1).
[194] *Id.* § 10910(e).

Additional detailed information is required in the WSA for a proposed project that includes groundwater.[195]

Who makes the determinations?

Urban water suppliers adopt their own plans, but are required to make the plan available for public inspection and hold a public hearing prior to adoption.[196] After the hearing, the plan must be adopted as prepared or as modified after the hearing.[197]

For a WSA, the governing body of each public water system must submit the WSA to the city or county that requested it and the city or county must approve it.[198] If the public water system concludes that its water supplies are, or will be, insufficient, it must provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies.[199] The city or county must determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses.[200] If the city or county determines that water supplies will not be sufficient, the city or county must include that determination in its findings for the project.[201] It appears that a proposed project may proceed forward even when the local agency "determines that water supplies will not be sufficient," but this information will be included in the environmental document prepared for the project and in its findings.[202]

Process to Contest Determinations:

No statutory process is provided to contest a WSA finding that the projected water supply will or will not meet the projected demand.

Sustainable Groundwater Management Act

Brief Description:

For the first time in California history, the Sustainable Groundwater Management Act (SGMA), enacted in 2014, provides for the sustainable management of groundwater basins.[203] The SGMA states that "it is vital that there be close coordination and consultation between California's water supply and management agencies and California's land use ap-

---

[195] *Id.* § 10910(f).
[196] *Id.* § 10642.
[197] *Id.*
[198] *Id.* § 10910(g)(1).
[199] *Id.* § 10911(a).
[200] *Id.* § 10911(c).
[201] *Id.* § 10911(a).
[202] *Id.* § 10911(a)–(c); *see also* CAL. DEP'T WATER RES. GUIDEBOOK, *supra* note 47, at 39.
[203] CAL. WATER CODE § 10720.1(a).

proval agencies to ensure adequate water supply and management planning occurs to accommodate projects that will result in increased demands on water supplies or impact water resource management."[204]

SGMA provides a "standardized process for determining the adequacy of existing and planned future water supplies to meet existing and planned future demands on these water supplies and the impact of land use decisions on the management of California's water supply resources."[205] For example, before a legislative body of a city or county takes action to adopt or substantially amend its general plan, a public water system with 3,000 or more service connections must provide the planning agency for the city or county a description of the source(s) of the total water supply currently available to the water supplier by water right or contract, taking into account historical data concerning wet, normal, and dry runoff years.[206] The public water supplier must also provide a description of all proposed additional sources of water supplies, including the estimated dates by which these additional sources should be available and the quantities of additional water supplies that are being proposed.[207] Detailed information on amounts of water provided, customers served, and estimated reductions of total demand based on water use reduction measures must also be provided, together with copies of the supplier's UWM Plan and capital improvement plan.[208]

SGMA also requires the development and implementation of Groundwater Sustainability Plans (GSPs) for medium and high priority basins designated by the Department of Water Resources,[209] and encourages low- and very low-priority basins to be managed pursuant to a GSP as well.[210] There are 127 high and medium priority groundwater basins, which account for approximately ninety-six percent of groundwater use in California.[211] GSPs, when effectively implemented, will achieve sustainability within a groundwater basin within twenty years of the implementation.[212]

Comparing California's Assured Water Supply Laws to Other States:

---

[204] CAL. GOV'T CODE § 65352.5(a).
[205] *Id.* § 65352.5(b).
[206] *Id*. § 65352.5(c)(3).
[207] *Id*. § 65352.5(c)(6).
[208] *Id*. §§ 65352.5(c)(1) - (2), (4) - (5), (7) - (8).
[209] CAL. WATER CODE § 10720.7(a).
[210] *Id*. § 10720.7(b).
[211] *Initial Groundwater Basin Prioritization under the SGM Act*, CAL. DEP'T WATER RES., http://www.water.ca.gov/groundwater/sgm/SGM_BasinPriority.cfm (last modified Jan. 15, 2016).
[212] CAL. WATER CODE §§ 10720.7(a), 10727(a), 10727.2(b)(1).

California is perhaps the prototype for integrating its assured water supply program with local land use planning. UWM Plans are very detailed and forward looking planning documents and feed into the WSAs and verification letters required for development approvals for large developments.[213] SGMA requires city and county general plans to consider detailed information about available water supplies, and a GSP must describe the consideration given to any applicable general plans and adopted water resources-related plans within the basin.[214]

California also stands out because it requires water suppliers to describe the vulnerability of water supplies to "seasonal or climatic shortage" in their UWM Plans[215] and mandates an urban water shortage plan in case of an emergency, like drought or natural disaster, in its assured water supply analysis.[216]

California's WSA and water verification requirements are comprehensive, but their efficacy is limited by their application only to very large projects, unlike states such as Arizona[217] and Colorado,[218] which apply water adequacy requirements to much smaller developments. California's water adequacy provisions for subdivisions only apply to projects of 500 units or more and exempt any proposed residential project in an already "urbanized area" previously developed for urban uses, as well as "housing projects that are exclusively for very low and low-income households."[219] A city or county can approve development with insufficient water supply but only if the public water system provides plans for acquiring additional supply[220] or upon a finding that additional water supplies will be available.[221] Further, if the local government determines that the water supplies will be insufficient, that determination must be included in its findings for the project,[222] similar to Arizona,[223] Colorado,[224] and Wyoming.[225]

COLORADO

[213] *See Id.* §§ 10910 to 10915; *see also* CAL. GOV'T CODE § 66473.7.
[214] CAL. WATER CODE § 10727.2(g).
[215] *Id.* § 10631(c).
[216] *Id*. § 10632.
[217] ARIZ. REV. STAT. § 45-576(A) (LexisNexis 2016).
[218] COLO. REV. STAT. §§ 30-28-101(10), 30-28-136(1)(h) (2016).
[219] CAL. GOV'T CODE § 66473.7(a)(1), (i).
[220] CAL. WATER CODE §10910.
[221] CAL. GOV'T CODE § 66473.7(b)(3).
[222] CAL. WATER CODE § 10911(c).
[223] ARIZ. REV. STAT. § 45-108.
[224] COLO. REV. STAT. § 30-28-136(1)(h)(I).
[225] WYO. STAT. ANN. § 18-5-308(c) (2016).

Colorado's assured water supply program consists of the County Planning and Building Codes,[226] which apply to subdivision approvals by counties, and the Local Government Land Use Control Enabling Act,[227] which applies to development approvals by cities, towns, and counties.

County Planning and Building Codes

Brief Description:

Counties are prohibited from approving any preliminary plan or final plat for a subdivision unless evidence has been provided that a water supply sufficient in quantity, dependability, and quality will be available.[228] An opinion from the Colorado State Engineer concerning the sufficiency of supply is required.[229]

Applies to:

Counties are required to adopt subdivision regulations, and those regulations must require the submittal of evidence on water supply in support of any subdivision application.[230] A "subdivision" is any parcel of land that is divided into two or more parcels or to be used for condominiums, apartments, or any other multiple dwelling units.[231] Specifically excluded from the definition of subdivision is any division of land resulting in parcels of thirty-five acres or more.[232]

Boards of county commissioners may not approve a preliminary plan or final plat unless the subdivider has provided evidence "to establish that definite provision has been made for a water supply that is sufficient in terms of quantity, dependability, and quality to provide an appropriate supply of water for the type of subdivision proposed."[233] A preliminary plan is a "map of a proposed subdivision and specified supporting materials, drawn and submitted in accordance with the requirements of adopted regulations, to permit the evaluation of the proposal prior to detailed engineering and design."[234] A plat is "a map and supporting materials of certain described land prepared in accordance with subdivision regulations as an instrument for recording of real estate interests with the county clerk and recorder."[235]

Criteria:

---

[226] COLO. REV. STAT. §§ 30-28-101 to -211 (2016).
[227] *Id.* §§ 29-20-301 to -306.
[228] *Id.* § 30-28-133(6)(a).
[229] *Id.* § 30-28-136(1)(h).
[230] *Id.* § 30-28-133(1), (3)(c)(V), (6)(a).
[231] *Id.* § 30-28-101(10).
[232] *Id.* § 30-28-101(10)(c)(I).
[233] *Id.* § 30-28-133(6)(a).
[234] *Id.* § 30-28-101(6).
[235] *Id.* § 30-28-101(5).

Subdivision regulations adopted by a board of county commissioners must require developers to submit documentation on:

> (1) Estimated total number of gallons per day of water system requirements where a distribution system is proposed;[236]
>
> (2) Estimated construction cost and proposed method of financing of the water distribution system;[237]
>
> (3) Adequate evidence that a water supply that is sufficient in terms of quality, quantity, and dependability will be available to ensure an adequate supply of water for the type of subdivision proposed.[238] Such evidence may include, but is not limited to:
>
> > (a) Evidence of ownership or right of acquisition of or use of existing and proposed water rights;[239]
> >
> > (b) Historic use and estimated yield of claimed water rights;[240]
> >
> > (c) Amenability of existing rights to a change in use;[241]
> >
> > (d) Evidence that public or private water owners can and will supply water to the proposed subdivision stating the amount of water available for use within the subdivision and the feasibility of extending service to that area;[242] and
> >
> > (e) Evidence concerning the potability of the proposed water supply for the subdivision.[243]

Who makes the determinations?

The board of county commissioners makes the final determination for preliminary plans and final plats.[244] Upon receipt of a complete preliminary plan submission, the board of county commissioners must distribute a copy of the preliminary plan to "the state engineer for an opinion regarding material injury likely to occur to decreed water rights by virtue of diversion of water necessary or proposed to be used to supply the proposed subdivision and adequacy of proposed water supply to meet

---

[236] *Id.* § 30-28-133(3)(c)(V).
[237] *Id.* § 30-28-133(3)(c)(VII).
[238] *Id.* § 30-28-133(3)(d).
[239] *Id.* § 30-28-133(3)(d)(I).
[240] *Id.* § 30-28-133(3)(d)(II).
[241] *Id.* § 30-28-133(3)(d)(III).
[242] *Id.* § 30-28-133(3)(d)(IV).
[243] *Id.* § 30-28-133(3)(d)(V).
[244] *See id.* § 30-28-133(6).

requirements of the proposed subdivision."[245] If the state engineer finds that material injury will occur or finds inadequacy, he must express that finding in a written opinion to the board of county commissioners.[246] If the subdivision is approved notwithstanding the state engineer's opinion, the developer must furnish a copy of the state engineer's opinion to all potential purchasers prior to the sale unless, in the opinion of the board of county commissioners, the developer has corrected the injury or inadequacy from the state engineer's finding.[247]

Process to Contest Determinations:

A review process is available to appeal local land use decisions to the state courts under the Colorado Court Rules or a declaratory judgment proceeding.[248]

Local Government Land Use Control Enabling Act

Brief Description

The Local Government Land Use Control Enabling Act applies to all local governments, including cities, towns, and counties, and provides authority for the approval of new developments.[249] A local government may not approve development permits unless it makes a determination that the developer has demonstrated that the proposed water supply will be adequate.[250] An adequate supply is defined as one that is "sufficient for the build-out of the proposed development in terms of quality, quantity, dependability, and availability to provide a supply of water for the type of development proposed, and may include reasonable conservation measures and water demand management measures to account for hydrologic variability."[251] Colorado counties are subject to this set of directives as well as those described above in the County Planning statutes.

Applies to:

The water adequacy provisions apply to development permits for any "project that includes a new water use in an amount more than that used by fifty single-family equivalents, or fewer as determined by the local government."[252] A development permit is "any preliminary or final approval of an application for rezoning, planned unit development, con-

[245] *Id.* § 30-28-136(1)(h)(I).
[246] *Id.*
[247] *Id.*
[248] COLO. R. CIV. P. 106(a)(4) (2016); *see* COLO. REV. STAT. §§ 13-51-101 to -115.
[249] COLO. REV. STAT. §§ 29-20-103(1.5), -104.
[250] *Id.* §§ 29-20-303(1).
[251] *Id.* § 29-20-302(1).
[252] *Id.* § 29-20-103(1)(b).

ditional or special use permit, subdivision, development or site plan, or similar application for new construction."[253]

Process and Criteria:

A developer has three potential options to demonstrate an adequate water supply:

> (1) A developer may submit a report prepared by a registered professional engineer or water supply expert that estimates water supply requirements for the proposed development.[254] The report must include:
>
> (a) "An estimate of the water supply requirements for the proposed development through build-out conditions;
>
> (b) A description of the physical source of water supply that will be used to serve the proposed development;
>
> (c) An estimate of the amount of water yield projected from the proposed water supply under various hydrologic conditions;
>
> (d) Water conservation measures, if any, that may be implemented within the development;
>
> (e) Water demand management measures, if any, that may be implemented within the development to account for hydrologic variability; and
>
> (f) Such other information as may be required by the local government."[255]
>
> (2) "If the development is to be served by a water supply entity, the local government may allow the applicant to submit, in lieu of the report [described above], a letter prepared by a registered professional engineer or by a water supply expert from the water supply entity stating whether the water supply entity is willing to commit and its ability to provide an adequate water supply for the proposed development."[256] The water supply entity's engineer or expert must prepare the letter if so requested by the applicant, and the letter must include the same information as described above for a report.[257]

---

[253] *Id.* § 29-20-103(1).
[254] *Id.* § 29-20-304(1).
[255] *Id.* § 29-20-304(1)(a)-(f).
[256] *Id.* § 29-20-304(2).
[257] *Id.*

> A water supply entity is "a municipality, county, special district, water conservancy district, water conservation district, water authority, or other public or private water supply company that supplies, distributes, or otherwise provides water at retail."[258]
>
> (3) "In the alternative, an applicant [is] not . . . required to provide a letter or report . . . if the water for the proposed development is to be provided by a water supply entity that has a water supply plan that:
>
> (a) Has been reviewed and updated, if appropriate, within the previous ten years by the governing board of the water supply entity;
>
> (b) Has a minimum twenty-year planning horizon;
>
> (c) Lists the water conservation measures, if any, that may be implemented within the service area;
>
> (d) Lists the water demand management measures, if any, that may be implemented within the development;
>
> (e) Includes a general description of the water supply entity's water obligations;
>
> (f) Includes a general description of the water supply entity's water supplies; and
>
> (g) Is on file with the local government."[259]

The local government may, but is not required to, request a letter from the state engineer commenting on the documentation described above.[260]

Who makes the determinations?

The local government makes the final determination to approve a development permit.[261] It may not approve an application for a development permit unless "it determines in its sole discretion, after considering the application and all of the information provided, that the applicant has satisfactorily demonstrated that the proposed water supply will be adequate."[262] A local government can make such determination "only once during the development permit approval process unless the water de-

[258] *Id.* § 29-20-302(2).
[259] *Id.* § 29-20-304(3)(a)-(g).
[260] *Id.* § 29-20-305(1)(b).
[261] *Id.* § 29-20-305(1).
[262] *Id.* § 29-20-303(1).

mands or supply of the specific project are materially changed."[263] The local government has "the discretion to determine the stage in the development permit approval process at which such determination is made."[264]

Process to Contest Determinations:

A review process is available to appeal local land use decisions to the state courts under the Colorado Court Rules or a declaratory judgment proceeding.[265]

Comparing Colorado's Assured Water Supply Laws to Other States:

Colorado, like Arizona and California, imposes comparatively stringent criteria for showing water availability. Local governments, however, have discretion in making the actual final determination as to the adequacy of the water supply,[266] similar to Montana,[267] Nevada,[268] and Wyoming.[269] Further, a local government must make a determination only once during the development permit approval process, and the local government has the discretion to determine the stage in the development permit approval process at which such determination is made.[270] The discrepancies in the requirements between Colorado counties and municipalities are somewhat unusual, in that there are differences in the size of subdivision covered, the requirement for a State Engineer opinion, and the timing of the determination. The minimum threshold of 50 units for a local government adequacy review[271] straddles the spectrum of much lower thresholds in many states[272] and California's much higher level of 500 units.[273] The 50-unit minimum may be a high bar, however, in rural areas where subdivision development of greater numbers is rare.[274]

Colorado has addressed the problem of attempted utilization of multiple exempt wells to serve a subdivision. If a well permit application is filed for an exempt well in a subdivision for which the water supply plan has not been recommended for approval by the State Engineer, the cumu-

---

[263] *Id.*
[264] *Id.*
[265] COLO. R. CIV. P. 106(a)(4); COLO. REV. STAT. §§ 13-51-101 to -115.
[266] COLO. REV. STAT. § 29-20-303; *id.* § 30-28-133(6)(a).
[267] MONT. CODE ANN. § 76-3-622(1)(e) (2015).
[268] NEV. REV. STAT. § 278.377(1)(b) (2015).
[269] WYO. STAT. ANN. § 18-5-301 (2016).
[270] COLO. REV. STAT. § 29-20-303.
[271] COLO. REV. STAT. § 29-20-103(1)(b).
[272] *See* Ariz. Rev. Stat. §§ 32-2101(56), -2181(E) (six units); Mont. Code Ann. §§ 76-3-103(14)-(15), -104, 76-4-102(16) (one unit); Nev. Rev. Stat. §§ 278.320(1), .330, .360 (five units); N.M. Stat. Ann. §§ 47-6-2(M), (P-T), 47-6-11 (five units); Or. Rev. Stat. §§ 92.010(16)-(17), 92.090(4) (four units); Wash. Rev. Code §§ 58.17.170, .060, .020(a) (five units); Wyo. Stat. Ann. § 18-5-306(a) (five units).
[273] CAL. WATER CODE § 10912(a)(1).
[274] KLEIN & KENNEY, *supra* note 5, at 8.

lative effect of all wells in the subdivision must be considered in determining material injury.[275]

IDAHO

Idaho has no assured water supply law at the state level, but some local governments require that developers show adequate water rights or an adequate water supply[276] akin to Utah. The Idaho Local Land Use and Planning Act requires, however, all local planning or planning and zoning commissions to conduct a comprehensive planning process designed to prepare, implement, and review and update a comprehensive plan.[277] The comprehensive plan must include an "analysis of the uses of rivers and other waters, . . . watersheds, and shorelines"[278] and an analysis of "water supply."[279] While a comprehensive plan does not require adequate water supply standards, some counties instruct development applicants to demonstrate adequate water supply.[280]

MONTANA

Montana's assured water supply program consists of the Montana Subdivision and Platting Act[281] and the Montana Sanitation In Subdivisions Act.[282]

The Montana Subdivision and Platting Act

Brief Description:

The Montana Subdivision and Platting Act (MSPA) regulates the subdivision of land to promote the public health, safety, and general welfare, provide for adequate water supply, prevent overcrowding, and require development in harmony with the natural environment, among other things.[283] To achieve these goals, the MSPA requires local governments to adopt and provide for the enforcement and administra-

---

[275] COLO. REV. STAT. § 37-92-602(3)(b)(III).

[276] *See*, *e.g.*, Ada Cty., Idaho, Code § 8-6-3(L)(3)(f) (2015); Bonner Cty., Idaho, Code § 12-623(B) (2015).

[277] IDAHO CODE ANN. § 67-6508 (2015).

[278] *Id.* § 67-6508(f).

[279] *Id.* § 67-6508(h).

[280] *See, e.g.*, *Ada County Comprehensive Plan,* Ada Cty. Idaho 7-25 (Nov. 2007), *available at* https://adacounty.id.gov/Portals/0/DVS/PLN/Doc/ADA%20COMP%20PLAN%20COMPLETE.pdf.

[281] MONT. CODE ANN. §§ 76-3-101, -105 (2015).

[282] *Id.* §§ 76-4-101, -135.

[283] *Id.* § 76-3-102.

tion of subdivision regulations that cover the provision of adequate water.[284]

Applies to:

The MSPA applies to a developer who proposes a subdivision of land that creates one or more parcels containing less than 160 acres.[285] The MSPA also applies to "an area, regardless of its size, that provides or will provide multiple spaces for rent or lease on which recreational camping vehicles or mobile homes will be placed."[286] "First minor subdivisions" consisting of five or fewer lots that have not been previously subdivided since July 1, 1973 are not subject to the full scope of requirements applicable to larger subdivisions.[287] The MSPA applies to cities, towns, and counties.[288]

Process and Criteria:

A developer that proposes a subdivision must present a preliminary plat[289] and submit an environmental assessment[290] for local government review. The governing body examines and approves each final subdivision plat once "it conforms to the conditions of approval set forth on the preliminary plat."[291]

For proposed subdivisions that will include new water supply facilities, the preliminary plat must include:

> (a) Description of the proposed subdivision's water supply systems;[292]
>
> (b) Evidence of adequate water availability: (i) obtained from well logs or testing of onsite or nearby wells; (ii) obtained from information contained in published hydrogeological reports; or (iii) as otherwise specified by rules adopted by the Department of Environmental Quality; and[293]
>
> (c) Evidence of sufficient water quality.[294]

---

[284] *Id.* § 76-3-501(6).
[285] *Id.* §§ 76-3-103(14), (15), -104.
[286] *Id.* § 76-3-103(15).
[287] *Id.* §§ 76-3-103(9), -609.
[288] *Id.* § 76-3-501.
[289] *Id.* § 76-3-601.
[290] *Id.* § 76-3-504(1)(b). First minor subdivisions need not prepare an environmental assessment but must include a summary of the probable impacts of the proposed subdivision as described above for a major subdivision. *Id.* § 76-3-609(2)(d)(i).
[291] *Id.* § 76-3-611(1)(a).
[292] *Id.* § 76-3-622(1)(b).
[293] *Id.* § 76-3-622(1)(e). The Montana Division of Water Resources is not involved in demonstrating adequate water supply nor are there any requirements that legal water rights be shown to prove adequate water availability. The term "adequate water availability" is not defined in the statutes.
[294] *Id.* § 76-3-622(1)(f).

Governing bodies of local governments are prohibited from requiring water information in addition to that listed above.[295] They are also prohibited from adopting subdivision regulations more stringent than the state requirements for water supplies, unless specific findings are made, after a public hearing, that the local standard or requirement is necessary to protect the public health and environment and is achievable under current technology.[296] The written findings must include information and peer-reviewed scientific studies contained in the record that forms the basis for the governing body's conclusion and the cost to the regulated community.[297]

The environmental assessment for a major subdivision (six or more lots) must include:

> (1) Description of every body or stream of surface water that may be affected by the proposed subdivision, together with available ground water information;[298]
>
> (2) A summary of the probable impacts of the proposed subdivision on agriculture, agricultural water user facilities, local services, the natural environment, wildlife, wildlife habitat, and public health and safety.[299]
>
> (3) Community impact report containing a statement of anticipated needs of the proposed subdivision for local services, including water facilities;[300] and
>
> (4) Additional relevant and reasonable information related to the applicable regulatory criteria as may be required by the governing body.[301]

A proposed subdivision must be reviewed to determine its impact on agriculture, agricultural water user facilities, local services, the natural environment, wildlife, wildlife habitat, and public health and safety.[302] A governing body may conditionally approve or deny a proposed subdivision as a result of the water information provided or public comment received on the water information provided only if the conditional approval

---

[295] *Id.* § 76-3-622(3).
[296] *Id.* § 76-3-511(2).
[297] *Id.* § 76-3-511(3).
[298] *Id.* § 76-3-603(1)(a).
[299] *Id.* §§ 76-3-603(1)(b), -608(3)(a).
[300] *Id.* § 76-3-603(1)(c).
[301] *Id.* § 76-3-603(1)(d).
[302] *Id.* § 76-3-608(3)(a). "First minor subdivisions" are not subject to this approval criterion if it proposed in a jurisdictional area that has adopted zoning regulations that address the same criteria. *Id.* § 76-3-609(2)(d)(ii).

or denial is based on existing subdivision, zoning, or other regulations that the governing body has the authority to enforce.[303]

Who makes the final determination?

The governing body of the local governmental entity examines and approves each final subdivision plat.[304] The governing body is "a board of county commissioners or the governing authority of a city or town organized pursuant to law."[305] A public hearing is required,[306] except for a "first minor subdivision."[307]

Process to Contest Determinations:

An applicant for a subdivision can sue the governing body in Montana district court to recover actual damages caused by a final action, decision, or order of the governing body if it is arbitrary or capricious.[308] Any party aggrieved by a decision of the local governing body to approve, conditionally approve, or deny an application and preliminary plat for a proposed subdivision or a final subdivision plat can appeal to the district court in the county in which the property involved is located within 30 days from the date of the written decision.[309]

Montana Sanitation In Subdivisions Act

Brief Description:

The purpose of the Montana Sanitation In Subdivisions Act (MSSA) is "to protect the quality and potability of water for public water supplies and domestic uses and to protect the quality of water for other beneficial uses, including uses relating to agriculture, industry, recreation, and wildlife."[310] The MSSA requires the Montana Department of Environmental Quality (DEQ) to set standards for the review and approval of water systems for subdivisions, including public and private water supplies and individual wells.[311] While primarily aimed at water quality concerns, the MSSA provides that the DEQ rules must require "adequate evidence that a water supply that is sufficient in terms of quality, quantity, and dependability will be available to ensure an adequate supply of water for the type of subdivision proposed."[312]

Applies to:

---

[303] *Id.* § 76-3-608(6).
[304] *Id.* § 76-3-611.
[305] *Id.* § 76-3-103(7).
[306] *Id.* § 76-3-605.
[307] *Id.* § 76-3-609(2)(e).
[308] *Id.* § 76-3-625(1).
[309] *Id.* § 76-3-625(2).
[310] *Id.* § 76-4-101.
[311] *Id.* § 76-4-104(2).
[312] *Id.* § 76-4-104(6)(b).

A developer must submit a subdivision application to the DEQ or the local reviewing authority after the developer has already submitted an application under the MSPA.[313] Even subdivisions that are excluded from review under the MSPA are must be reviewed pursuant to the MSSA.[314] However, subdivisions within the jurisdictional areas that have growth policies or within a first-class or second-class municipality for which municipal water will be provided are not subject to review under the MSSA, if the governing body certifies that adequate municipal water facilities will be provided.[315] A first-class municipality includes every city having a population of 10,000 or more, and a second-class municipality includes every city having a population of less than 10,000 and more than 5,000.[316]

The MSSA defines a subdivision as "a division of land . . . that creates one or more parcels containing less than 20 acres . . . in order that the title to or possession of the parcels may be sold, rented, leased, or otherwise conveyed and includes any resubdivision and any condominium or area, regardless of size, that provides permanent multiple space for recreational camping vehicles or mobile homes."[317]

Process and Criteria:

The DEQ creates the rules that provide for the review of proposed subdivisions.[318] These rules must include delegation of that review to a local department or board of health.[319] Such local agencies are authorized to review subdivision water supplies if they employ a registered sanitarian or registered professional engineer and the DEQ certifies that the agency is competent to conduct the review.[320] The DEQ must adopt "standards and procedures for certification and maintaining certification to ensure that a local department or board of health is competent to review the subdivisions."[321] There are limits, however, on the size of the public water system that can be reviewed locally. Generally only small public systems may be reviewed locally, and only if a delegation of authority from DEQ is requested and granted.[322] DEQ itself must review

---

[313] *Id.* § 76-4-125; *see also* MONT. ADMIN. R. 17.36.102 (2016) (requiring a completed application to initiate review of a subdivision).
[314] MONT. CODE ANN. § 76-4-125(2).
[315] *Id.* §§ 76-4-125(2)(d), -127. The certification from the governing body for the municipal facilities does not relieve the developer from the review requirements for a water main extension pursuant to Title 75, Chapter 6, MONT. CODE ANN. *See* MONT. ADMIN. R. 17.38.101.
[316] MONT. CODE ANN. § 7-1-4111(1)–(2).
[317] *Id.* § 76-4-102(16).
[318] *Id.* § 76-4-104(1)–(2).
[319] *Id.* § 76-4-104(3).
[320] *Id.* § 76-4-104(3)(a).
[321] *Id.* § 76-4-104(4).
[322] *Id.* §§ 76-4-104(3)(b), 75-6-121(1).

proposed subdivisions that lie within more than one jurisdictional area and the respective governing bodies are in disagreement concerning approval of or conditions to be imposed on the proposed subdivision and a subdivision where the local department or board of health elects not to be certified.[323]

The DEQ, or the local department or board of health certified to review smaller systems, is referred to as the "reviewing authority."[324]

In pertinent part, the following must be included in the subdivision application:

> (1) Plans and specifications for water supply system;[325]
>
> (2) Evidence that the water source for the proposed subdivision is sufficient in terms of quality, quantity, and dependability;[326]
>
> (3) If ground water is proposed as a water source, the applicant must submit the location of the proposed ground water source and a description of the proposed ground water source, including approximate depth to water bearing zones and lithology of the aquifer;[327] and
>
> (4)Information about water use agreements if water is to be supplied by means other than individual on-site wells.[328]

Subdivision applications are reviewed by DEQ for water quantity and dependability.[329] This review includes analysis of long-term sustainability of the aquifer,[330] proof of legal entitlement to the water supply,[331] and dependability of the water supply and distribution system in accordance with the design standards.[332]

To qualify for the limited exemption from MSSA review allowed for subdivisions receiving supplies from a municipal water facility, the governing body must send a notice of certification to the reviewing authority that a subdivision has been submitted for approval and that adequate municipal facilities will be provided.[333] The notice must be provid-

---

[323] *Id.* § 76-4-104(5).
[324] *Id.* § 76-4-102(12).
[325] MONT. ADMIN. R. 17.36.103(1)(b).
[326] *Id*. 17.36.103(1)(f).
[327] *Id*. 17.36.103(1)(g)(i)–(ii).
[328] *Id*. 17.36.103(1)(h).
[329] *Id*. 17.36.330, .332.
[330] *Id*.
[331] *Id*. 17.36.103(1)(s).
[332] *Id*. 17.36.330; MONT. DEP'T OF ENVTL QUAL., Circular DEQ-1, *Standards for Water Works,* Aug. 8, 2014, Circular DEQ-3, *Standards for Small Water Systems*, Aug. 8, 2014.
[333] MONT. CODE ANN. § 76-4-127(1).

ed prior to final plat approval under the MSPA.[334] The notice must include:

> (1) How construction of the water supply systems or extensions will be financed;[335]
>
> (2) Certification that the subdivision is within an area covered by a growth policy or within a first-class or second-class municipality and a copy of the growth policy;[336]
>
> (3) Certification that adequate municipal facilities for the supply of water are available or will be provided;[337] and
>
> (4) If the water supply facilities are not municipally owned, certification from the facility owners that adequate facilities are available.[338]

Who makes the final determination?

The reviewing authority will issue an approval when it is satisfied that adverse impacts to state waters will not occur, the water supply is of adequate quantity, quality, and dependability, and the sewage disposal facility is sufficient in terms of capacity and dependability.[339]

If the reviewing authority denies an application and the applicant resubmits a corrected application within thirty days after the date of the denial letter, the reviewing authority must complete review of the resubmitted application within thirty days after receipt of the resubmitted application.[340] If the review of the resubmitted application is conducted by a certified local department or board of health, the DEQ must make a final decision on the application within ten days after the local reviewing authority completes its review.[341]

The DEQ makes the final decision on the proposed subdivision "after the submission of a complete application and payment of fees to the reviewing authority."[342] If the DEQ approves the subdivision, it issues a certificate of subdivision approval indicating that it has approved the plans and specifications and that the subdivision is not subject to a sanitary restriction.[343]

---

[334] *Id.*
[335] *Id.* § 76-4-127(2)(e).
[336] *Id.* § 76-4-127(2)(f).
[337] *Id.* § 76-4-127(2)(h).
[338] *Id.* § 76-4-127(2)(i).
[339] MONT. ADMIN. R. 17.36.110.
[340] MONT. CODE ANN. § 76-4-125(1)(c).
[341] *Id.*
[342] *Id.* § 76-4-125(1)(d).
[343] *Id.*

Process to Contest Determinations:

"Upon a denial of approval of subdivision plans and specifications relating to environmental health facilities, the person who is aggrieved by the denial may request a hearing before the [Montana Board of Environmental Review]. A hearing request must be filed, in writing, within 30 days after receipt of the notice of denial and must state the reason for the request. The contested case provisions of the Montana Administrative Procedure Act, Title 2, chapter 4, part 6, apply . . . ."[344]

Comparing Montana's Assured Water Supply Laws to Other States:

Montana's Sanitation in Subdivisions Act requires an independent review by DEQ in most circumstances to determine water availability, similar to Arizona,[345] Nevada,[346] and New Mexico.[347] Montana's assured supply law applies to smaller subdivisions, thus encompassing more new development.[348]

Recently the Montana District Court for Lewis and Clark County ordered Montana Department of Natural Resources and Conservation (DNRC) to close a loophole in the state's water well permit rules that developers and other large water users were using to avoid the permitting process when drilling individual water wells for new subdivisions.[349] Specifically, developers were using an "exempt-well" loophole to avoid obtaining permits for drilling water wells when converting agricultural lands into subdivisions.[350] The decision orders DNRC to return to a 1987 water right permit rule that governed small wells before a new rule was adopted in 1993 that created an exemption.[351] This is similar to Colorado's law that effectively prohibits use of multiple exempt wells to serve subdivisions.[352]

---

[344] *Id*. §§ 76-4-126(1), -102(2).

[345] ARIZ. REV. STAT. §§ 45-576(A), 45-108(B) (LexisNexis 2016); ARIZ. ADMIN. CODE §§ R12-15-710, -712 (2014).

[346] NEV. REV. STAT. § 278.335 (2015).

[347] N.M. STAT. ANN. § 47-6-11(F)(1).

[348] *See* MONT. CODE ANN. § 76-3-103(15) (defining "subdivision" as "a division of land or land so divided that it creates one or more parcels containing less than 160 acres that cannot be described as a one-quarter aliquot part of a United States government section").

[349] *Clark Fork Coal. v. Tubbs et al.*, No. BDV-2010-874 (D. Mont. Oct. 17, 2014).

[350] Press Release, W. Envtl. Law Ctr., Montana Court Orders State to Close Loophole to Protect Water Rights, (Oct. 20, 2014), *available at* http://www.westernlaw.org/article/montana-court-orders-state-close-loophole-protect-water-rights-press-release-102014.

[351] *Combined Appropriation Guidance*, MONT. DEP'T NATURAL RES. & CONSERVATION 1–3, (Sept. 18, 2015) http://dnrc.mt.gov/divisions/water/water-rights/docs/external-ca-10-07-2015-final.pdf.

[352] COLO. REV. STAT. § 37-92-602(3)(b)(III); *see infra* text accompanying note 275.

NEVADA

Nevada has one statute, the Planning and Zoning Law, that addresses assured water supplies.

Planned Unit Development Law

Brief Description:

Nevada's Planning and Zoning Law requires that local subdivision ordinances be adopted by the governing body of every incorporated city and every county.[353] Such ordinances must specify the uses permitted for improvements, mapping, accuracy, engineering, and related subjects, including sufficient water supply.[354] All procedures with respect to the approval or disapproval of a subdivision and its continuing administration must be consistent with the provisions set forth in the Planning and Zoning Law.[355]

Applies to:

For subdivisions of five or more lots, developers must submit a tentative and final map to the planning commission, both of which require consideration of water availability.[356] A tentative map is also required for divisions into large parcels where the parcels are each forty acres or more.[357] A parcel map is required for division of land into four or fewer lots any of which is less than forty acres, which also must address water supply issues.[358] A local governing body may, by ordinance, apply this requirement to a division of land where each proposed lot is at least ten acres.[359] A division of land into lots or parcels each of which is more than 640 acres is exempt from this provision.[360]

Process and Criteria:

A developer is required to submit both a tentative map[361] and a final map[362] for a subdivision of five lots or more. For a tentative map, the planning commission must consider the following, in pertinent part:

---

[353] NEV. REV. STAT. § 278.326 (2015).

[354] *Id.* §§ 278.326(1), -.377(1)(a); *see also Subdivision Review*, NEV. DIV. WATER RES., http://water.nv.gov/waterrights/subdivision.cfm (last updated Aug. 6, 2013, 1:36 PM) (discussing fees required for review of subdivision maps and considerations made).

[355] NEV. REV. STAT. §§ 278.010 to -.630.

[356] *Id.* §§ 278.320(1), .330(2), .360(1)(a).

[357] *Id.* § 278.471(1)(b).

[358] *Id.* § 278.461(1).

[359] *Id.* § 278.471(2)(b).

[360] *Id.* §278.471(3); *see also* PLANNER'S GUIDE, NEV. DIV. STATE LANDS USE: LAND USE PLANNING AGENCY 47, http://lands.nv.gov/docs/SLUPA/PlannersGuide.pdf (last visited June 24, 2016) (discussing map requirements) [hereinafter PLANNER'S GUIDE].

[361] NEV. REV. STAT. § 278.330.

[362] *Id.* § 278.360.

> (1) Environmental and health laws and regulations concerning water and air pollution and facilities to supply water;[363]
>
> (2) The availability of water which meets applicable health standards and is sufficient in quantity for the reasonably foreseeable needs of the subdivision;[364]
>
> (3) Availability and accessibility of utilities;[365] and
>
> (4) The recommendations and comments of the Division of Water Resources and the Division of Environmental Protection.[366]

A copy of the tentative map must be forwarded by the planning commission for review to the Division of Water Resources (DWR) and the Division of Environmental Protection (DEP) of the State Department of Conservation and Natural Resources (DCNR).[367] "Each reviewing agency shall, within [fifteen] days after the receipt of the tentative map, file its written comments with the planning commission or the governing body recommending approval, conditional approval or disapproval and stating the reasons therefor."[368]

Within four years of the approval of a tentative map,[369] the developer must submit a final map that includes the following:

> (1) A water meter plan for any subdivision served by a public water system;[370]
>
> (2) A certificate by the DEP or the district board of health acting indicating that the final map is approved concerning the water supply facilities.[371] The district board of health may not issue a certificate unless it has received written verification from the Public Utilities Commission of Nevada (PUC) that the final map has been approved by the PUC with regard to the continuity and adequacy of water supply if the water supply proposed is from an investor-owned utility;[372] and

---

[363] *Id.* § 278.349(3)(a).
[364] *Id.* § 278.349(3)(b).
[365] *Id.* § 278.349(3)(c).
[366] *Id.* § 278.349(3)(i).
[367] *Id.* § 278.335(1)(a).
[368] *Id.* § 278.335(5).
[369] *Id.* § 278.360.
[370] *Id.* § 278.385.
[371] *Id.* § 278.377(1)(a).
[372] *Id.* § 278.377(1)(a)(2); *see Water/Wastewater*, STATE NEV. PUB. UTIL. COMM'N, http://puc.nv.gov/Utilities/Water/ (last visited June 24, 2016).

(3) A certificate by the DWR, showing that the final map is approved concerning water quantity.[373] In order to provide the required certificate, the DWR will review the following:

(a) Whether there is sufficient water for the subdivision;

(b) Whether the water is for the correct manner of use;

(c) Whether the subdivision is within the correct place of use and if not, is there an expansion of the service area pending;

(d) Verify surface water rights versus groundwater;

(e) Check for decreed water;

(f) Verify water agreements between purveyors;

(g) Check for drought factors;

(h) Verify PUC water use duties dependent on lot size; and

(i) Whether a relinquishment of water rights is required for domestic well subdivisions. [374]

A parcel map for some divisions of land into four or fewer lots must also include a certificate from the DWR indicating that the map is approved as to the quantity of water available for use.[375] Such a certificate is required if:

(1) Any parcel included in the map

(a) Is within a groundwater basin designated by the State Engineer as depleted and an order requiring approval of the parcel map has been issued;[376] and

(b) Will be served by a domestic well;[377] and

(2) The dedication of a right to appropriate water to ensure a sufficient supply of water is not required by an applicable local ordinance.[378]

Apparently, some developers attempted multiple uses of the less stringent parcel map process in order to evade the subdivision require-

---

[373] NEV. REV. STAT. § 278.377(1)(b).

[374] *Subdivision Review*, STATE NEV. DIV. WATER RES., http://water.nv.gov/waterrights/subdivision.cfm (last updated Aug. 6, 2013, 1:36 PM).

[375] NEV. REV. STAT. § 278.461(2).

[376] *Id.* §§ 278.461(2)(a)(1), 534.120(1).

[377] *Id.* § 278.461(2)(a)(2).

[378] *Id.* § 278.461(2)(b).

ments.[379] In an effort to preclude such evasion of the subdivision requirements through "subsequent parceling," the Nevada Legislature made additional provisions for subsequent parcel maps. For a subsequent parcel map with respect to a single parcel or a contiguous tract of land under the same ownership, the planning commission may require any reasonable improvement, but not more than would be required for a subdivision.[380] Further, a governing body may consider the criteria set forth for a tentative map "in determining whether to approve, conditionally approve, or disapprove a second or subsequent parcel map for land that has been divided by a parcel map which was recorded within the [five] years immediately preceding the acceptance of the second or subsequent parcel map as a complete application."[381]

A division of land into large parcels (forty acres or more) requires a tentative map[382] and final map,[383] but neither requires proof of adequate water supply.

Who makes the final determination?

All cities with a population of 25,000 or more and all counties with a population of 45,000 or more are required to create a planning commission.[384] In cities and counties below the population threshold, the governing body may either create a planning commission or perform all the functions and have all of the powers that would otherwise be granted to and be performed by the planning commission.[385]

The local governing body or planning commission makes the final determination for tentative maps,[386] final maps,[387] and parcel maps.[388]

Process to Contest Determination:

The governing body of each city and county is required to adopt by ordinance a procedure for any aggrieved person to appeal decisions of the planning commission to the governing body.[389] Any person aggrieved by the decision of the governing body may seek judicial review of, and

---

[379] NEV. LEGISLATIVE COUNSEL BUREAU, SUBDIVISION OF LANDS: BULLETIN NO. 93-10, at 8–9 (Sept. 1992), *available at* https://www.leg.state.nv.us/Division/Research/Publications/InterimReports/1993/Bulletin93-10.pdf.

[380] NEV. REV. STAT. § 278.462(3).

[381] *Id.* § 278.464(6); *see also* PLANNER'S GUIDE, *supra* note 359, at 56–57 (discussing the considerations for determining action on a parcel map).

[382] NEV. REV. STAT. § 278.4713.

[383] *Id.* § § § 278.472.

[384] *Id.* § 278.030(1).

[385] *Id.* § 278.030(2).

[386] *Id.* § § § 278.349(1).

[387] *Id.* § 278.380(1).

[388] *Id.* § 278.464.

[389] *Id.* § 278.3195(1).

recovery of damages caused by, any final action, decision, or order through an appeal to the district court of the proper county.[390]

Comparing Nevada's Assured Water Supply Laws to Other States:

Nevada appears to have a broad assured water supply law, factoring in not only water supply but also "[e]nvironmental and health laws and regulations concerning water and air pollution, the disposal of solid waste, facilities to supply water, community or public sewage disposal . . . individual systems for sewage disposal [and the] availability of water which meets applicable health standards and is sufficient in quantity for the reasonably foreseeable needs of the subdivision."[391] Akin to Arizona and Colorado, Nevada relies on state water officials for the assessment of whether water will be available.[392] However, the law does not reference a particular timeframe of water availability.[393] This is in contrast to Arizona's requirements for an uninterruptible supply for the 100-year period or the existence of sufficient backup supplies for any anticipated shortages.[394] Nevada's law applies to subdivisions of five or more lots, unlike Colorado's threshold of over fifty units[395] and California's 500 units.[396]

NEW MEXICO

New Mexico's assured water supply program is governed by the New Mexico Subdivision Act for counties and Planning and Platting statute for municipalities.

Subdivision Act

Brief Description:

The New Mexico Subdivision Act[397] ("Subdivision Act") requires the board of county commissioners ("Commissioners" or "Commission") of each county to regulate subdivisions within the county's boundaries.[398] The Commissioners must adopt regulations setting forth the county's requirements for preliminary and final subdivision plats, quantifying the maximum annual water requirements of subdivisions, assessing water availability to meet the maximum annual water requirements of subdivisions, implementing water conservation measures, and establishing

---

[390] *Id.* §§ 278.3195(4), -.0235.
[391] *Id.* § 278.349(3)(a)–(b); Davies 2010, *supra* note 5, at 340.
[392] NEV. REV. STAT. § 278.377(1)(b) (2015).
[393] *Id.*
[394] ARIZ. ADMIN. CODE R12-15-717 (2014).
[395] COLO. REV. STAT. § 29-20-103(1)(b) (2016).
[396] CAL. WATER CODE §10912(a)(1) (West 2016).
[397] N.M. STAT. ANN. § 47-6-1 to -29 (2016).
[398] *Id.* § 47-6-9(A).

standards for water of an acceptable quality for human consumption and for protecting the water supply from contamination.[399] Prior to adopting, amending or repealing any such regulation, the Commission must consult with representatives of the State Engineer's Office about matters within his or her expertise.[400] The State Engineer must give consideration to the conditions peculiar to that county and submit written guidelines to the Commission for its consideration in formulating the subdivision regulations.[401]

Applies to:

The Subdivision Act applies to a developer that proposes to sell, lease, or convey land in a subdivision that is not within the boundary of a municipality.[402] A subdivision is "the division of a surface area of land, including land within a previously approved subdivision, into two or more parcels for the purpose of sale, lease or other conveyance or for building development."[403]

There are five types of subdivisions:

> **(1) Type-one** subdivision is any subdivision containing five hundred or more parcels, any one of which is less than ten acres in size;
>
> **(2) Type-two** subdivision is any subdivision containing twenty-five to four hundred ninety-nine parcels, any one of which is less than ten acres in size;
>
> **(3) Type-three** subdivision is any subdivision containing twenty-four or less parcels, any one of which is less than ten acres in size;
>
> **(4) Type-four** subdivision is any subdivision containing twenty-five or more parcels, each of which is ten acres or more in size; and
>
> **(5) Type-five** subdivision is any subdivision containing twenty-four or less parcels, each of which is ten acres or more in size. [404]

Process and Criteria:

Developers must submit a preliminary plat for type-one, type-two, type-four, and certain type-three subdivisions.[405] In part, a preliminary plat must contain documentation of the following:

---

[399] *Id.*
[400] *Id.* § 47-6-10(A).
[401] *Id.*
[402] *Id.* §§ 47-6-8, 3-20-5(A)(1).
[403] *Id.* § 47-6-2(M).
[404] *Id.* § 47-6-2(P)–(T).

> (1) "[W]ater sufficient in quantity to fulfill the maximum annual water requirements of the subdivision, including water for indoor and outdoor domestic uses";[406] and
>
> (2) "[W]ater of an acceptable quality for human consumption and measures to protect the water supply from contamination."[407]

The Commissioners may not approve the preliminary plat unless the subdivider reasonably demonstrates that the above requirements can be fulfilled.[408] In making that determination, the Commissioners must request an opinion from the State Engineer.[409] If the State Engineer provides an adverse opinion, the subdivider has the burden of showing that the opinion is incorrect.[410]

The final plat must be prepared in accordance with the approved or conditionally approved preliminary plat.[411] For a subdivision containing ten or more parcels, any one of which is two acres or less in size, the developer must provide proof of a service commitment from a water provider and an opinion from the State Engineer that the developer can furnish water sufficient in quantity to fulfill the maximum water requirements of the subdivision or provide a permit obtained from the State Engineer for the subdivision water use.[412] In acting on the permit application, the State Engineer must determine "whether the amount of water permitted is sufficient in quantity to fulfill the maximum annual water requirements of the subdivision, including water for indoor and outdoor domestic uses."[413] Such subdivisions may not rely on individual domestic wells.[414]

For a subdivision of land from which irrigation water rights appurtenant to the land have been severed, the subdivider must either:

> (1) Provide proof of a service commitment from a water provider and an opinion from the state engineer that the subdivider can furnish water sufficient in quantity to fulfill the

---

[405] *Id.* § 47-6-11(A). Type-three subdivisions containing five or fewer parcels of land are governed by more summary review procedures. *Id.* § 47-6-11(I). For these small type-three subdivisions and all type-five subdivisions, no specific water sufficiency examination or opinion from the State Engineer is required. *Id.* § 47-6-11(I)–(K).

[406] *Id.* § 47-6-11(B)(1).

[407] *Id.* § 47-6-11(B)(2).

[408] *Id.* § 47-6-11(D). The Commissioners are also required to determine whether the subdivider can fulfill the proposals in the disclosure statement required by N.M. STAT. ANN. § 47-6-17. *See infra* text accompanying notes 418–421.

[409] *Id.* § 47-6-11(F)(1).

[410] *Id.* § 47-6-11(H)(3).

[411] *Id.* § 47-6-11.3(A).

[412] *Id.* § 47-6-11.2.

[413] *Id.*

[414] *Id.* §§ 47-6-11.2, 72-12-1.1.

> maximum annual water requirements of the subdivision, including water for indoor and outdoor domestic uses; or
>
> (2) Acquire sufficient water rights through a permit issued by the state engineer for subdivision water use.[415]

The New Mexico State Engineer's Office developed a guidance manual that informs developers and public officials as to how the State Engineer's review of water supply for subdivisions will be conducted.[416] The guidance manual covers the protocol for review of subdivision proposals, water demand analysis, and water right requirements and limitations.[417]

Prior to selling, leasing or otherwise conveying any land in a subdivision with five or more parcels, the developer must disclose in writing such information as the Commissioners require to allow a prospective purchaser to make an informed decision, including:

> (1) "[A] statement describing the maximum annual water requirements of the subdivision, including water for indoor and outdoor domestic uses, and describing the availability of water to meet the maximum annual water requirements";[418]
>
> (2) "[A] statement describing the quality of water in the subdivision available for human consumption";[419]
>
> (3) "[A] description of the means of water delivery within the subdivision";[420] and
>
> (4) "[T]he average depth of water within the subdivision if water is available only from subterranean sources."[421]

As part of the preliminary plat approval for type-one, type-two, type-four, and larger type-three subdivisions, the Commissioners must determine whether the subdivider can fulfill the proposals in the above-mentioned disclosure statement.[422] The same determination must be made by the Commissioners before approving a final plat for small type-three and type-five subdivisions.[423]

---

[415] *Id.* § 47-6-11.4.

[416] BRIAN C. WILSON, WATER CONSERVATION AND QUANTIFICATION OF WATER DEMANDS IN SUBDIVISIONS, NEW MEXICO STATE ENGINEER OFFICE, TECHNICAL REPORT 48 (May 1996), *available at* http://www.ose.state.nm.us/WUC/PDF/TechReport-048.PDF.

[417] *Id.* at 4–7, 20–28, 32–36.

[418] *Id.* § 47-6-17(B)(11), (C).

[419] *Id.* § 47-6-17(B)(12), (C).

[420] *Id.* § 47-6-17(B)(15), (C).

[421] *Id.* § 47-6-17(B)(16), (C).

[422] *Id.* § 47-6-11(A), (C)(1).

[423] *Id.* §§ 47-6-11(I)(1), (J)(1).

If, at the time of approval of the final plat, any public improvements have not been completed by the developer as required, the Commissioners must, as a condition precedent to the approval of the final plat, require the developer to enter into an agreement with the county upon mutually agreeable terms to thereafter complete the improvements at the developer's expense.[424]

Who makes the final determination?

The Commissioners make the final determination for preliminary and final plats.[425] The Commissioners must weigh the opinion of the State Engineer on the sufficiency of the water supply in determining whether to approve the preliminary plat at a public hearing.[426] The Commissioners may not deny a final plat if they have previously approved a preliminary plat for the proposed subdivision and find that the final plat is in substantial compliance with the previously approved preliminary plat.[427] Denial of a final plat must be accompanied by a finding identifying the requirements that have not been met.[428]

Special provisions allow Indian nations, tribes or pueblos with a historical, cultural or resource tie with the county to request notification of proposed development in the county.[429] The county commissioners are required to request an opinion from such nations, tribes or pueblos as to whether the developer can meet the requirements of the preliminary plat, including the sufficiency of the water supply.[430] If the opinion of the nation, tribe or pueblo is adverse, the developer is notified and provided an opportunity to respond, and a public hearing is required.[431] In a case in which the adverse opinion concerns water quantity issues, if the State Engineer' Office disagrees, it must submit its own response to the county.[432]

The Commissioners of a county with a population of greater than 300,000 may "delegate the authority to review and approve preliminary and final plats to a county administrative officer or to the planning commission."[433]

---

[424] *Id.* § 47-6-11.3(C).
[425] *Id.* §§ 47-6-11(D), -11.3(B).
[426] *Id.* § 47-6-11(G).
[427] *Id.* § 47-6-11.3(B).
[428] *Id.*
[429] *Id.* § 47-6-11(F)(5).
[430] *Id.*
[431] *Id.* § 47-6-11(H).
[432] *Id.* § 47-6-11(H)(3); Telephone interview by Anne Castle with John Longworth, Office of the New Mexico State Engineer (July 21, 2016) (notes on file with authors).
[433] N.M. STAT. ANN. § 47-6-9(D).

Process to Contest Determination:

A party who is or may be adversely affected by a decision of a delegate of the Commissioners can appeal the delegate's decision to the Commissioners.[434] A party who is or may be adversely affected by a decision of the Commissioners may appeal to the district court pursuant to state Administrative Procedure Act provisions.[435]

Municipal Planning and Platting Statute

Brief Description:

The Planning and Platting Statute[436] ("Planning Statute") governs the regulation of subdivisions within the boundaries of a municipality.[437] The Planning Statute requires proof of adequate water supply for proposed subdivisions from which irrigation water rights appurtenant to the land have been severed,[438] but does not provide for assessment of the adequacy of water supply in other situations.[439]

Applies To:

The planning authority is required to adopt regulations governing the subdivision of land within the municipality, subject to approval by the governing body.[440] These regulations may address the extent and manner in which water facilities are installed,[441] but are not required to address water adequacy issues. The municipality's planning and platting jurisdiction is extended three to five miles beyond the actual municipal boundaries, depending upon the population of the municipality and its proximity to other cities.[442] In these extended jurisdiction areas, approval of a plat of a subdivision must secure the approval of both the board of county commissioners and the planning authority of the municipality.[443] Every person who desires to create a subdivision within this boundary must furnish a plat of the proposed subdivision, prepared by a registered, licensed surveyor of New Mexico.[444]

---

[434] *Id.* § 47-6-15(A).
[435] *Id.* §§ 47-6-15(B), 39-3-1.1.
[436] *Id.* §§ 3-19-1 to -20-16.
[437] *Id.* § 3-19-6.
[438] *Id.* § 3-20-9.1(A).
[439] *Id.* § 3-20-9.1(B).
[440] *Id.* § 3-19-6(A).
[441] *Id.* § 3-19-6(B)(5)(b).
[442] *Id.* § 3-19-5(A). Class A counties with populations of more than 300,000 do not have this extraterritorial planning and platting jurisdiction, which affects only the City of Albuquerque.
[443] *Id.* § 3-20-9. To accomplish the concurrent jurisdiction and approval, the municipality and the county may enter into an agreement that provides for zoning and subdivision approval in the extraterritorial area. *Id.* §§ 3-21-3(A), 3-21-3.1.
[444] *Id.* § 3-20-2.

For areas within the corporate boundaries of the municipality, a subdivision is "the division of land into two or more parts by platting or by metes and bounds description into tracts."[445] For areas of land outside of the municipal boundary but within the municipal extraterritorial jurisdiction, a subdivision is "the division of land into two or more parts by platting or by metes and bounds description into tracts of less than five acres in any one calendar year."[446]

Process and Criteria:

"Before a plat of any subdivision within the jurisdiction of a municipality is filed in the office of the county clerk, the plat [must] be submitted to the planning authority of the municipality having jurisdiction for approval."[447] For a subdivision of land from which irrigation water rights appurtenant to the land have been severed, the subdivider must either:

(1) Provide proof of a service commitment from a water provider and an opinion from the state engineer that the subdivider can furnish water sufficient in quantity to fulfill the maximum annual water requirements of the subdivision, including water for indoor and outdoor domestic uses; or
(2) Acquire sufficient water rights through a permit issued by the state engineer for subdivision water use.[448]

A final plat for a subdivision cannot be approved unless one of the two above alternatives has been fulfilled.[449]

"In acting on the permit application, the state engineer shall determine whether the amount of water permitted is sufficient in quantity to fulfill the maximum annual water requirements of the subdivision, including water for indoor and outdoor domestic uses."[450] The approval authority cannot approve the final plat based on the use of water from any permit issued for a domestic well.[451] Note that these procedures apply only to lands from which appurtenant water rights have been severed and not to other lands within the municipality's jurisdiction. There appear to be no specific water adequacy or water service requirements in state law for other types of land within municipal boundaries.

---

[445] *Id.* § 3-20-1(A)(1).
[446] *Id.* § 3-20-1(A)(2).
[447] *Id.* § 3-20-7(A).
[448] *Id.* §§ 3-20-9.1, 47-6-11(F)(1).
[449] *Id.* § 3-20-9.1(A).
[450] Id.
[451] *Id.* §§ 3-20-9.1(A), 72-12-1.1; *see also* N.M. CODE R. §§ 19.27.5 to 19.27.5.18 (2016) (discussing requirements for use of public groundwater).

Some municipalities, however, address water supply adequacy by requiring proposed developments to request water availability statements from the local utility, such as in Albuquerque[452] and Rio Rancho.[453] Additionally, the City of Santa Fe utilizes a Water Right Transfer Program as one method of acquiring water rights to ensure adequate water supplies for new developments.[454] The program "links development to water by requiring that projects with new water demand either purchase water conserved by customers . . . or by acquiring water rights and transferring them to the City."[455]

Who Makes the Final Determination?

For a subdivision within the jurisdiction of a municipality, the planning authority of the municipality approves or disapproves a plat.[456] "The reason for a disapproval of a plat [must] be entered upon the recordings of the planning authority."[457]

As stated above, a subdivision within the platting jurisdiction of both a county and municipality must secure the approval of both the Commissioners and the planning authority of the municipality.[458]

Process to Contest Determination:

"Any person in interest dissatisfied with an order or determination of the planning commission, after review of the order or determination by the governing body of the municipality, may commence an appeal in the district court pursuant to" state Administrative Procedure Act provisions.[459]

Comparing New Mexico's Assured Water Supply Laws to Other States:

New Mexico's assured water supply requirements are mandatory for counties, but only required for municipal development on land from

---

[452] *See Availability Statements*, ALBUQUERQUE BERNALILLO CTY. WATER UTIL. AUTH. http://www.abcwua.org/Availability_Statements.aspx (last visited July 21, 2016).

[453] Because portions of the City of Rio Rancho, New Mexico, extend into Bernallilo County, parts of the city must comply with the availability statement requirements in Albuquerque. *Id.* For other parts of Rio Rancho, approval for a building permit will not be allowed without a letter of availability from the city's Utility Operations Division. *Development Process Manual*, I-9 Construction-Permitting Buildings, CITY OF RIO RANCHO, N.M. (DEC. 4, 2009), http://www.rrnm.gov/DocumentCenter/Home/View/5865.

[454] *Water Rights Acquisitions*, CITY OF SANTA FE, N.M., http://www.santafenm.gov/water_rights (last visited July 21, 2016).

[455] *Id.*

[456] N.M. STAT. ANN. § 3-20-7(A), (E).

[457] *Id.* § 3-20-7(E).

[458] *Id.* § 3-20-9.

[459] *Id.* §§ 3-19-8, 39-3-1.1.

which irrigation water rights have been severed,[460] similar to the disparate requirements for different types of areas in Arizona[461] and Wyoming.[462] New Mexico requires local governments to consult with the State Engineer's office to confirm adequate water supply prior to approval,[463] similar to the procedures for counties in Colorado.[464] New Mexico requires state oversight for water supplies of subdivisions containing ten or more parcels and mandates the State Engineer's confirmation of adequate water supply prior to the local government's approval.[465] There is a gap, however, for land within municipal boundaries that did not have appurtenant irrigation water rights—most likely based on an assumption that a municipal water provider will be available to serve the subdivision.

OREGON

Oregon's assured water supply framework is primarily found in the Subdivision and Partitions Statute.[466] The Oregon Department of Land Conservation and Development has also prescribed requirements for local land use regulations governing water facilities and development outside of urban growth boundaries that relate tangentially to the availability of service from a water system.[467]

Subdivision and Partitions Statute

Brief Description:

The Subdivision and Partitions Statute provides that the governing body of a county or a city must, by regulation or ordinance, adopt standards and procedures to facilitate adequate provision of water supply for subdivision development and certain partitions of land.[468]

Applies to:

A person proposing a subdivision or certain partitions of land must submit an application in writing to the county or city having jurisdiction

---

[460] *Id.* § 3-20-9.1(A). New Mexico provides municipalities, counties, and certain other community-based water suppliers with a maximum forty-year planning period when applying for a change of place or purpose of use on a water right pursuant to a water development plan. *Id.* § 72-1-9(B).

[461] ARIZ. REV. STAT. §§ 45-576(J), 32-2181(F)(2) (2016); *see Office of Assured & Adequate Water Supply Program*, *supra* note 25.

[462] WYO. STAT. ANN. §§ 18-5-301, 15-1-510 (2016).

[463] N.M. STAT. ANN. §§ 47-6-11(B), (F), 47-6-11.2, 3-20-9.1.

[464] COLO. REV. STAT. § 30-28-136(1)(h) (2015).

[465] N.M. STAT. ANN. § 47-6-11.2.

[466] OR. REV. STAT. ch. 92 (2016).

[467] OR. ADMIN. R. §§ 660.011.0000 – 0065 (2016).

[468] OR. REV. STAT. § 92.044(1)(a), (1)(b)(E).

for plat approval.[469] The plat approval is dependent on receipt and acceptance of satisfactory information concerning the proposed water supply.[470]

A subdivision is land divided to create four or more lots within a calendar year.[471] Partitioning land means "dividing land to create not more than three parcels of land within a calendar year."[472] Partitions of land in exclusive farm use zones and all subdivisions are required to provide adequate water supply information.[473]

Process and Criteria:

A plat for a subdivision will not be approved if the city or county has not received and accepted the following information:

> (1) "A certification by a city-owned domestic water supply system or by the owner of a privately owned domestic water supply system, subject to regulation by the Public Utility Commission of Oregon, that water will be available to the lot line of each and every lot depicted in the proposed subdivision plat";[474]
>
> (2) "A bond, irrevocable letter of credit, contract or other assurance by the subdivider to the city or county that a domestic water supply system will be installed by or on behalf of the subdivider to the lot line of each and every lot depicted in the proposed subdivision plat" with the amount of any such assurance determined by a registered professional engineer;[475] or
>
> (3) In lieu of the above requirements, "a statement that no domestic water supply facility will be provided to the purchaser of any lot depicted in the proposed subdivision plat, even though a domestic water supply source may exist."[476] A copy of this statement must be filed with the Real Estate Commissioner and included in any public report made for the subdivision, or, if no public report is required, the subdivider must deliver a copy of the statement to each prospective purchaser.[477]

---

[469] *Id.* § 92.040(1).
[470] *Id.* § 92.090(4).
[471] *Id.* § 92.010(16)–(17).
[472] *Id.* § 92.010(9).
[473] *Id.* §§ 92.044(1)(b)(E), 215.203(1).
[474] *Id.* § 92.090(4)(a).
[475] *Id.* § 92.090(4)(b).
[476] *Id.* § 92.090(4)(c).
[477] *Id.*

Who makes the final determination?

The governing body of the city or county makes the final determination for plats of subdivisions and partitions.[478] If a county has not adopted regulations for subdivision and partition control, land within six miles outside of the corporate limits of a city is under the jurisdiction of the city for the purpose of giving approval of plans, maps and plats of subdivisions and partitions, unless otherwise provided in an urban growth area management agreement between the city and county.[479]

Process to Contest Determination:

All appeals go through the Land Use Board of Appeals (LUBA), which has exclusive jurisdiction to review any land use decision or limited land use decision of a local government.[480]

Department of Land Conservation and Development Regulations:

In accordance with statewide planning goals adopted by the Department of Land Conservation and Development, public facility plans are required for water systems for use by local governments in preparing, adopting, amending, and implementing their comprehensive plans.[481] Land use controls and ordinances are recommended as methods of achieving desired types and levels of public water facilities and services.[482] Land use regulations applicable outside of urban growth boundaries and unincorporated community boundaries must not allow increases in the density of development as a result of availability of service from a water system or the presence of a water system.[483]

Comparing Oregon's Assured Water Supply Laws to Other States:

Oregon, similarly to Nevada[484] and Wyoming,[485] leaves the regulation of adequate water supply for subdivision development largely to the

---

[478] *Id.* § 92.042.
[479] *Id.* § 92.042(1).
[480] *Id.* § 197.825; *Crist v. City of Beaverton,* 922 P.2d 1253, 1253–54 (Or. Ct. App. 1996); *State ex rel. Moore v. City of Fairview*, 13 P.3d 1031, 1034 (Or. Ct. App. 2000) (holding that "errors in land use decisions and in the decision-making process are redressable exclusively through the LUBA appeal mechanism"); *see also* OR. REV. STAT. § 197.015(12) (defining "limited land use decision"); OR. LAND USE BD. APPEALS, http://www.oregon.gov/LUBA/pages/index.aspx (last visited June 28, 2016) (providing LUBA information and resources).
[481] OR. REV. STAT. § 197.225; OR. ADMIN. R. §§ 660.011.0010, .0015.
[482] *Oregon Statewide Planning Goals & Guidelines, Goal 11 – Public Facilities and Services,* OR. DEP'T OF LAND CONSERVATION & DEV., *available at* https://www.oregon.gov/LCD/docs/goals/goal11.pdf (last visited July 8, 2016).
[483] OR. ADMIN. R. § 660.011.0065(2).
[484] NEV. REV. STAT. § 278.380(1) (2015).
[485] WYO. STAT. ANN. § 18-5-308 (2016).

local governments.[486] However, Oregon requires certification by a domestic water supply system that "water will be available to the lot line of each and every lot depicted in the proposed subdivision plat,"[487] akin to Washington's requirement for a letter from a water purveyor or water permit from the Department of Ecology[488] and California's verification letter requirement.[489]

Oregon's most recent water strategy document notes a concern that "local land use decision makers need more information about groundwater availability at specific locations, as well as the long-term ability of local aquifers to yield water, when making decisions about appropriate locations for development, particularly in rural areas."[490] "Land use decision makers also need better information about the cumulative impacts of development on water quantity and quality.[491]

UTAH

Utah does not have an assured water supply law. Utah's Land Use, Development, and Management Act (LUDMA) authorizes and governs land use and zoning regulation by cities and counties and establishes mandatory requirements that local governments must follow. There are two versions: one for municipalities[492] and another for counties.[493] The two acts are nearly identical with only a few differences. Some local governments have enacted regulations requiring demonstration of adequate water supplies.[494]

In 2015, HB 15-323 amended LUDMA to require counties to develop resource management plans "to provide for the protection, conservation, development, and managed use of resources that are critical to the health, safety, and welfare of the citizens of the county and of the state."[495] Each county's plan must focus on core resources, which include water rights and water quality and hydrology irrigation, agriculture, water rights, ditches and canals, water quality and hydrology, wetlands, and

---

[486] OR. REV. STAT. § 92.044(1)(a), (b)(E).
[487] *Id.* § 92.090(4)(a).
[488] WASH. REV. CODE § 19.27.097(1) (2016).
[489] CAL. GOV'T CODE § 66473.7(b)(1) (2016).
[490] OR. WATER RES. DEP'T, *Oregon's Integrated Water Resources Strategy* 62 (Aug. 2012), *available at* https://www.oregon.gov/owrd/LAW/docs/IWRS_Final_2.pdf.
[491] *Id.*
[492] UTAH CODE ANN. §§ 10-9a-101 to -803 (LexisNexis 2016).
[493] *Id.* §§ 17-27a-101 to -901.
[494] *See, e.g.,* WASATCH CNTY. CODE § 16.21.12 (2002) (declaring that no building permit may be issued until the proposed source of water supply has been approved); SALT LAKE VALLEY BD. HEALTH, INDIVIDUAL WATER SYS. REG. 4.1 (2006).
[495] Resource Management Planning by Local Governments, H.B. 323, 61st Leg., Reg. Sess. (Utah 2015); UTAH CODE ANN. § 17-27a-401.

riparian areas, among others.[496] For each core resource, the plan must establish findings pertaining to the item; establish clearly defined objectives; and outline general policies and guidelines on how the objectives described are to be accomplished.[497] There is no adequate water supply requirement associated with the plan.

WASHINGTON

Washington's assured water supply program is governed by the Growth Management Act[498], the Subdivision Statute,[499] and the State Building Code[500]. Because the three statutes are interrelated, they are addressed together below.

Brief Description:

Under the Growth Management Act (GMA), cities and counties must manage growth by identifying and protecting critical areas and natural resource lands.[501] Counties with populations of 50,000 or more or those that have experienced rapid growth, and the cities within them, must also designate urban growth areas[502] and prepare comprehensive plans ("Plans").[503] Counties not meeting the above criteria may nevertheless choose to be governed by the comprehensive planning provisions, and the cities within the county will then also be bound.[504] One of the goals of these Plans is to protect the environment and the availability of water.[505] A Plan must "provide for protection of the quality and quantity of groundwater used for public water supplies."[506] For land not designated for urban growth, agriculture, forest, or mineral resources, the Plan must protect the rural character of the area by protecting both surface water and groundwater resources.[507] The Plans must be implemented through the local government's development or subdivision regulations.[508]

---

[496] UTAH CODE ANN. § 17-27a-401(3)(b).
[497] *Id*. § 17-27a-401(3)(c)(i) - (iii).
[498] WASH. REV. CODE §§ 36.70A.010 to .904 (2016).
[499] *Id.* §§ 58.17.010 to .920.
[500] *Id.* §§ 19.27.010 to .540.
[501] *Id.* §§ 36.70A.170(1), .060(2).
[502] *Id*. §§ 36.70A.110(1), .040(1).
[503] *Id*. § 36.70A.040(3).
[504] *Id.* § 36.70A.040(2)(a).
[505] *Id.* § 36.70A.020(10).
[506] *Id.* § 36.70A.070(1).
[507] *Id.* § 36.70A.070(5)(c)(iv).
[508] *Id.* § 36.70A.040(3), (4); *Kittitas Cty. v. E. Wash. Growth Mgmt. Hearings Bd.,* 256 P.3d 1193, 1198–99 (Wash. 2011).

One of the purposes of the Subdivision statute is to facilitate appropriate provision for potable water supplies.[509] Proposed subdivisions are examined to assure conformance to the general purposes of the city or county's Plan.[510] A proposed subdivision will not be approved unless appropriate provisions are made for potable water supplies.[511] In addition, under the State Building Code, a city or county is required to verify the existence of an adequate water supply for a building that requires potable water.[512]

In the decision of the Washington Supreme Court in *Kittitas County v. Eastern Washington Growth Management Hearings Board*, the Court held that counties are required by the GMA to regulate land use in a manner consistent with the laws regarding protection of water resources, with assistance from the Department of Ecology ("Ecology").[513] The Court concluded that in implementing the State Building Code and Subdivision Statute, counties must ascertain that water is legally available, and not just physically or factually available, before they can approve applications for subdivisions and building permits.[514] Ecology has developed guidance for counties in making adequacy of water supply determinations when they process applications for subdivisions and building permits.[515] A recent Washington Supreme Court decision makes clear that counties must delve deeply into the legal availability of water to support a building permit, including determining whether permit-exempt wells would impair senior water rights such as instream flows.[516]

Applies to:

Under the GMA, as interpreted in *Kittitas* and further explained in Ecology's guidance, it appears that in cities, towns, and counties that have adopted a Plan, applicants for a proposed subdivision or short subdivision must show that adequate potable water is available in order to obtain preliminary plat, final plat, and short plat approval.[517] A subdivision is "the division or redivision of land into five or more lots, tracts, parcels, sites, or divisions for the purpose of sale, lease, or transfer of

---

[509] WASH REV. CODE § 58.17.110(2).
[510] *Id.* §§ 36.70B.030(1), 58.17.100.
[511] *Id.* § 58.17.110(2).
[512] *Id.* § 19.27.097(1).
[513] *Kittitas*, 256 P.3d at 1209–10.
[514] *Id.* at 1210. The *Kittitas* decision involved a county, but the same logic would apply to cities and towns governed by the GMA.
[515] *Ecology Guidance to Counties*, *supra* note 33. Although the guidance is directed at counties, it is presumably applicable to cities and towns governed by the GMA.
[516] *Whatcom County v. W. Wash. Growth Mgmt H'rgs Bd.,* No. 91475-3, 2016 Wash. LEXIS 1133 (Oct. 6, 2016) ("*Hirst*").
[517] *Kittitas*, 256 P.3d at 1209–10; *Ecology Guidance to Counties*, *supra* note 33; WASH. REV. CODE §§ 58.17.060, .100, .110, .170.

ownership."[518] A short subdivision is "the division or redivision of land into four or fewer lots, tracts, parcels, sites, or divisions for the purpose of sale, lease, or transfer of ownership."[519] However, the legislative authority of any county governed by the GMA that has adopted a comprehensive plan and development regulations "may by ordinance increase the number of lots, tracts, or parcels to be regulated as short subdivisions to a maximum of nine in any urban growth area."[520] Cities and towns may also increase the number to a maximum of nine.[521] Lots in a subdivision cannot be sold until final plat approval is obtained and the plat is recorded with the county auditor.[522]

An "applicant for a building permit of a building necessitating potable water [must] provide evidence of an adequate water supply for the intended use of the building."[523] Within counties not required or not choosing to have a Plan, the county and the state may mutually determine those areas in the county in which the requirements of adequate water supply will not apply for a building permit.[524]

Process and Criteria:

Plans adopted under the GMA are required to consider and address water resource issues in land use planning[525] and subdivisions must be consistent with and implement the Plans.[526] For a subdivision and short subdivision, a finding is required that appropriate provisions have been made for potable water supplies before the subdivision can be approved.[527] "An applicant can make a showing that adequate water is legally available to support the intended use by providing a letter from a purveyor stating a commitment to serve water, through evidence that the applicant holds a water right permit, certificate, or statement of water right claim authorizing the water use, or by providing evidence of a lawful permit-exempt source of groundwater."[528] Each preliminary plat must be accompanied by a recommendation for approval or disapproval by the

---

[518] WASH. REV. CODE § 58.17.020(1).
[519] *Id.* § 58.17.020(6).
[520] *Id.*
[521] *Id*.
[522] *Id.* § 58.17.200.
[523] *Id.* § 19.27.097(1).
[524] *Id.* § 19.27.097(2).
[525] WASH. REV. CODE § 36.70A.020(10) (Plan goals include: "Protect the environment . . . , including water quality[] and the availability of water."); *Id.* § 36.70A.070(1) (specifying that the Plan "shall provide for protection of the quality and quantity of groundwater used for public water supplies"); *Id.* § 36.70A.070(5)(c)(iv) (requiring that the Plan include measures to protect surface water and groundwater resources).
[526] *Id.* § 36.70A.040(3), (4); *Kittitas*, 256 P.3d at 1198–99.
[527] WASH. REV. CODE §§ 58.17.110(1), .060.
[528] *Ecology Guidance to Counties*, *supra* note 33, at 2–3.

agency supplying water as to the adequacy of the proposed means of water supply.[529]

For a building permit, evidence of an adequate water supply for the intended use of the building may be in the form of one of the following: a water right permit from Ecology authorizing sufficient water for the proposed building,[530] a certificate or statement of water right claim,[531] a letter from an approved water purveyor stating the ability to provide water, or another form sufficient to verify the existence of an adequate water supply.[532] But an application for a water right permit is not sufficient proof of an adequate water supply.[533]

Ecology has issued guidelines specific to determinations of water availability for new buildings.[534] Individual residential dwelling water supplies are considered adequate if they can supply 400 gallons per day of potable water for building use, including limited irrigation.[535]

"[T]he county or city may impose conditions on building permits requiring connection to an existing public water system where the existing system is willing and able to provide safe and reliable potable water to the applicant with reasonable economy and efficiency."[536] Within counties not required or not choosing to adopt a Plan, the county and the state may mutually determine those areas in the county in which the building permit adequate water supply requirements do not apply.[537]

The ability of subdivision and building permit applicants to rely on "permit-exempt wells" is limited and becoming almost non-existent.[538] A well permit exemption allows certain users of small quantities of ground water—most commonly, single residential well owners—to construct wells and develop their water supplies without first obtaining a water right permit from Ecology.[539] Such wells are not exempt, however, from administration in priority, which could be a significant problem for resi-

---

[529] WASH. REV. CODE § 58.17.150(1).
[530] *Id.* § 19.27.097.
[531] *Ecology Guidance to Counties*, *supra* note 33, at 3.
[532] WASH. REV. CODE § 19.27.097(1).
[533] *Id*.
[534] GUIDELINES FOR DETERMINING WATER AVAILABILITY FOR NEW BUILDINGS, ECOLOGY PUBLICATION 93-27, WASH. DEP'T ECOLOGY, (Apr. 1993), *available at* http://www.ecy.wa.gov/programs/wr/wrac/images/pdf/9327.pdf.
[535] *Id*. at 3.
[536] WASH. REV. CODE § 19.27.097(1).
[537] *Id*. § 19.27.097(2).
[538] *Ecology Guidance to Counties*, *supra* note 33, at 3–4.
[539] WASH. REV. CODE § 90.44.050 (providing that the withdrawal of groundwater in an amount not exceeding 5,000 gallons per day for stock-watering purposes, for the watering of a lawn or of a noncommercial garden not exceeding one-half acre in area, for single or group domestic uses, or for an industrial purpose does not require a permit from Ecology).

dential property.[540] Case law has made it clear that subdivisions cannot rely on multiple exempt wells, unless the total pumping from all such wells is less than 5,000 gallons per day.[541]

In addition, a county governed by the GMA is required to determine whether a proposed supply from a permit-exempt well would interfere with existing senior water rights, including instream flow rights held by Ecology.[542] Such counties may not rely on Ecology's "inaction in failing to close a basin" nor on its determination that a basin need not be closed to permit-exempt appropriations as a basis for presuming that water is legally available.[543] Even in basins in which Ecology allows for permit-exempt wells, if there is evidence that instream flows are not being met, it is the county's responsibility to determine water availability by examining the impact that the exempt well would have on minimum instream flows.[544] Ecology has provided detailed guidance for determining water availability for the purpose of subdivision approval or building permits, including those based on permit-exempt wells,[545] but this 2008 guidance does not address the county's responsibility to examine independently the impact of permit-exempt wells on instream flow or other senior rights.[546]

Who makes the final determination?

For a subdivision, preliminary plat review is a quasi-judicial process that involves an initial review and hearing by the city or county planning commission or agency if one exists, which then makes a recommendation to the city council or board of county commissioners or county council.[547] A city or county may not approve a preliminary plat unless the city council, board of county commissioners or county council, or hearing examiner, as the case may be, makes written findings regarding certain matters, including the appropriate provision of potable water supplies.[548]

Final plat approval must be made by the legislative body.[549] The legislative body must find that the subdivision conforms to all the terms of the preliminary plat approval and that the subdivision meets the re-

---

[540] *Dep't of Ecology v. Campbell & Gwinn, L.L.C.,* 43 P.3d 4, 11–12 (Wash. 2002)
[541] *Id.* at 12–13.
[542] *Hirst*, *supra* note 515, 2016 Wash. LEXIS at 15-16, 26-43.
[543] *Id.* at 29-38, 48-49, n. 13.
[544] *Id.* at 48-49.
[545] *Ecology Guidance to Counties*, *supra* note 33.
[546] *Id*; see also, Understanding the Whatcom County vs. Hirst, Futurewise, et al. Decision, http://www.ecy.wa.gov/programs/wr/nwro/hirst.html (last updated Nov. 14, 2016).
[547] WASH REV. CODE § 58.17.100.
[548] *Id.* §§ 58.17.060, .110.
[549] *Id.* § 58.17.170(1).

quirements of applicable state laws and local ordinances, final approval can be granted.[550]

No process is set out in state law for approval of short subdivisions. Cities and counties are required to adopt by ordinance their own regulations and procedures that provide for "summary approval" of short subdivisions through an administrative process.[551] To approve a short subdivision, the administrative personnel assigned to review short subdivision applications must make written findings regarding certain matters, including the appropriate provision of potable water supplies.[552]

The county or city approves building permits through its building department.[553]

Process to Contest Determination:

Any decision approving or disapproving any subdivision plat is reviewable under the Land Use Petition Act (LUPA).[554] LUPA establishes "uniform, expedited appeal procedures and uniform criteria for reviewing such decisions, in order to provide consistent, predictable, and timely judicial review."[555] Any person or entity may seek judicial review in the superior court of a land use decision including a determination on an "application for a project permit or other governmental approval required by law before real property may be improved, developed, modified, sold, transferred, or used."[556]

Comparing Washington's Assured Water Supply Laws to Other States:

Washington is the only state that requires consideration of the availability of adequate potable water at both the subdivision approval and building permit stage.[557] While the examination of water availability in the subdivision process only applies in cities and counties governed by a Plan under the GMA, twenty-nine out of Washington's thirty-nine counties are either required to have a Plan or have elected to do so, which thereby requires the cities within those counties to also adopt a Plan.[558] These cities and counties represent approximately 95 percent of the

---

[550] *Id.*
[551] *Id.* § 58.17.060(1).
[552] *Id.* §§ 58.17.060(1), 58.17.110.
[553] *Id.* §§ 19.27.050, 19.27.097.
[554] *Id.* §§ 58.17.180, 36.70C.005 to .900.
[555] *Id.* § 36.70C.010.
[556] *Id.* §§ 36.70C.020(2)(a), 36.70C.030.
[557] Id. §§ 58.17.110(1), 19.27.097(1).
[558] *Growth Management Act – County Map*, WASH. DEP'T COMMERCE (Nov. 2013), http://www.commerce.wa.gov/Documents/Mandated-to-Plan-GMA.pdf.

state's population. [559] Similar to California's newly required Groundwater Sustainability Plans,[560] Washington requires that each Plan must be coordinated and consistent with the Plans adopted by other counties or cities with which it has, in part, common borders or related regional issues.[561] Also, Washington requires a letter from a water purveyor or water permit from Ecology,[562] akin to California's verification letter requirement.[563] Similar to Colorado and Montana, Washington has prohibited developers from relying on "permit-exempt wells" for a subdivision where the total withdrawal would exceed 5,000 gallons per day.[564]

WYOMING

Wyoming's assured water supply program is governed by its Planning and Zoning Statute and the Water Quality Rules and Regulations.[565] Because these two sets of requirements are interrelated, they are discussed together below.

Brief Description:

The regulation of the subdivision of land covers unincorporated areas in each county, and control is vested in the board of county commissioners of the county in which the land is located.[566] A developer must demonstrate the adequacy and safety of the proposed water supply system.[567] Cities have the ability to approve subdivision plats within a municipality, but there is no adequate water supply determination required by state law.[568] Zoning regulations for cities must "facilitate adequate provisions for . . . water,"[569] but there is no requirement that this consideration factor into subdivision or development review.

Counties are required to obtain review of the adequacy of the proposed water supply system by the Wyoming Department of Environmen-

---

[559] *Comprehensive Planning/Growth Management*, MUN. RESEARCH & SERVS. CTR. http://mrsc.org/Home/Explore-Topics/Planning/General-Planning-and-Growth-Management/Comprehensive-Planning-Growth-Management.aspx (last modified Jan. 8, 2016).

[560] CAL. WATER CODE § 10727.2(g) (West 2016).

[561] WASH. REV. CODE § 36.70A.100.

[562] *Id.* § 19.27.097(1).

[563] CAL. GOV'T CODE § 66473.7(b)(1).

[564] WASH. REV. CODE § 90.44.050.

[565] WYO. STAT. ANN. § 18-5-301 to -318 (2016); tit. 20, ch. 23 WYO. CODE R. §§ 1–9 (LexisNexis2016).

[566] WYO. STAT. ANN. § 18-5-301.

[567] *Id*. § 18-5-306(a)(vi).

[568] *Id.* § 15-1-510.

[569] *Id*. § 15-1-601(d)(i)(G).

tal Quality (DEQ).[570] The DEQ has adopted specific standards for demonstrating the adequacy of different types of water supplies.[571]

Applies to:

A person must obtain a subdivision permit prior to selling land, recording a plat, or commencing construction of a subdivision within a county.[572] A subdivision is "the creation or division of a lot, tract, parcel or other unit of land for the immediate or future purpose of sale, building development or redevelopment, for residential, recreational, industrial, commercial or public uses."[573] There is no minimum number of lots for which a subdivision permit is required, although the board of county commissioners may exempt subdivisions of land into five or fewer units from the submittal requirements dealing with water rights appurtenant to the land to be subdivided of the subdivision permit application process.[574] Large acreage subdivisions may also be exempted from the water adequacy requirements described below.[575] Counties may elect to exempt subdivisions creating parcels thirty-five acres or larger in size, but can also require such subdivisions to provide a study evaluating the water supply system proposed and the adequacy and safety of the system.[576] Parcels created before July 1, 2008 and divided into not more than ten parcels of 140 acres or less in size, provided that each new or remaining parcel is no less than thirty-five acres, are entirely exempt from the water adequacy provisions.[577]

Process and Criteria:

A study evaluating the water supply system proposed for the subdivision and the adequacy of the system must be submitted as part of a subdivision permit application.[578] The study must identify the type of water supply system proposed to serve the subdivision and the entity or entities responsible for the design, construction, operation, and maintenance of the proposed facility.[579] A report demonstrating the adequacy and safety of the proposed water supply system must be submitted with the study, and must address the following:

> (1) For all water supply systems except individual on-lot wells:

---

[570] *Id.* § 18-5-306(c).
[571] WYO. CODE R. § 8.
[572] WYO. STAT. ANN. § 18-5-304.
[573] *Id.* § 18-5-302(a)(vii).
[574] *Id.* § 18-5-306(a)(xi).
[575] *Id.* § 18-5-316(a).
[576] *Id.* § 18-5-316(a)(iii)(A)–(B).
[577] *Id.* § 18-5-316(a).
[578] *Id.* § 18-5-306(a)(vi).
[579] *Id.* § 18-5-306(a)(vi)(A).

> (a) The estimated total number of gallons per day for the subdivision water supply system;
>
> (b) Documentation that the proposed water supply system will be compatible with and not adversely affected by the sewage system proposed for the subdivision or any other sources of pollution within a reasonable distance;
>
> (c) List of all surface and groundwater rights which will be used or which will likely be affected, including state engineer application and permit numbers and description of expected effects identified by the study;
>
> (d) Plans for the mitigation of water right conflicts which will likely result from the use of water within the proposed subdivision, as identified by the study, unless such conflicts are deemed not to exist to the satisfaction of the board;
>
> (e) When connecting to an existing water supply system, the report must also contain documentation that public or private water suppliers can and will supply water to the proposed subdivision, stating the amount of water available for use within the subdivision and the feasibility of extending service to that area and documentation concerning the potability of the proposed water supply for the subdivision.
>
> (f) Where a centralized water supply system is proposed containing a new source of water supply to be developed, the report must demonstrate that the water supply system is sufficient in terms of quality, quantity and dependability and will be available to ensure an adequate water supply system for the type of subdivision proposed.[580] The report must include a narrative summary of:
>
> > (i) If the water supply system source is derived from groundwater, the geologic setting of the water supply system source and the area of influence such as nearby communities, sources of pollution, surface water bodies and aquifers described by a Wyoming registered professional geologist;

[580] *Id*. § 18-5-306(a)(vi)(B)(VI).

(ii) The quantity, quality and source of the water to be used including proposed and existing surface and groundwater facilities and their locations.

(iii) Where the proposed water supply system for the subdivision is from a groundwater source, a written report demonstrating that the proposed source is sufficient in terms of quality, quantity and dependability for the type of subdivision proposed;

(iv) A delineation of primary sources of water, secondary sources and occasional or seasonal sources;

(v) Graphic location of all water supply sources including wells, raw water intakes, treatment facilities, treated water storage facilities and ponds;

(vi) Documentation of all data sources on the occurrence and availability of surface and groundwater;

(vii) Historic stream flows and well levels;

(viii) Senior water rights;

(ix) Flood damage and flood protection; and

(x) Impact of and protection from supply shortages.[581]

(2) Where individual on-lot wells are proposed as the water supply system, the report must include:

(a) The estimated total number of gallons per day for the subdivision;

(b) Information relative to the potential availability and quality of groundwater proposed within the subdivision which may consist of new data, existing data on other working wells in the area, or other data, including drilling logs, from a test well drilled within the proposed subdivision indicating soil types, depth, quantity and quality of water produced in the test well;

(c) Documentation that the proposed water supply system will be compatible with and not ad-

[581] *Id.* § 18-5-306(a)(vi)(B).

> versely affected by the sewage system proposed for the subdivision or any other source of pollution within a reasonable distance;
>
> (d) List of all surface and groundwater rights which will be used or which will likely be affected, including State Engineer application and permit numbers, and description of expected effects identified by the study; and
>
> (e) Plans for the mitigation of water right conflicts which will likely result from the use of water within the proposed subdivision, as identified by the study, unless such conflicts are deemed not to exist to the satisfaction of the board.[582]

With respect to any water rights appurtenant to the land to be subdivided, the subdivider must provide information on the intended disposition of the water rights backed up by documentation submitted to the State Engineer.[583] Notifications to nearby irrigation districts, other appropriators, and prospective purchasers concerning the intended disposition are also required.[584]

In cases where individual on-lot wells are proposed, the words "NO PROPOSED CENTRAL WATER SUPPLY SYSTEM," in bold capital letters must appear on all offers, contracts, agreements, and plats relating to the subdivision.[585]

The requirements for submittal in the Water Quality Rules and Regulations parallel those in the Subdivision statute.[586] The following additional information is required:

> (1) Identification of the type of water supply system proposed to serve the subdivision and identification of the entity or entities responsible for the design, construction, operation and maintenance of the proposed facility;
>
> (2) For all applications, not just those proposing individual on-lot wells, a list of all surface and groundwater rights which will be used or which may be affected, including state engineer application and permit numbers and description of expected effects; and

---

[582] *Id.* § 18-5-306(a)(vi)(C).
[583] *Id.* § 18-5-306(a)(xi)(A).
[584] *Id.* § 18-5-306(a)(xi)(B)–(E).
[585] *Id.* §§ 18-5-306(a)(vi)(D), -316(a)(iii)(B)(I).
[586] WYO. CODE R. § 8.

> (3) Certification by the owner of the water distribution and treatment facilities that the system can and will provide adequate service to the proposed subdivision.[587]

Subdivision permit applications are provided to the DEQ for review of the safety and adequacy of the proposed water supply system.[588] The DEQ may request assistance from the State Engineer or the Wyoming water development office in preparing its review.[589]

The DEQ will issue an adverse or non-adverse recommendation for the water system and file its written comments.[590] If the DEQ issues a non-adverse recommendation, the board of county commissioners can accept or reject it. If a subdivision application is approved by the board notwithstanding an adverse recommendation by DEQ, the subdivider must furnish to all potential purchasers a copy of DEQ's recommendation prior to sale unless the board finds that the inadequacy has been corrected.[591] The DEQ can also delegate to the county its authority to review and approve the safety and adequacy of the water supply system if it is satisfied that a qualified reviewer will be employed and that the review will be no less stringent than that of DEQ.[592]

Who makes the final determinations?

The board of county commissioners can establish a planning and zoning commission, which can be authorized to receive and evaluate applications for subdivision permits.[593] If so authorized by the board of county commissioners, the planning and zoning commission must receive the materials required and submit a copy of the application to the DEQ for review.[594] The planning and zoning commission must make findings and recommendations to the board of county commissioners concerning an application within forty-five days from the date the DEQ submits its recommendation to the planning and zoning commission or from the date when the recommendation is due if no recommendation is made, whichever is earlier.[595] "If no action is taken by the planning and

---

[587] *Id.*
[588] WYO. STAT. ANN. § 18-5-306(c).
[589] *Id.* § 18-5-306(c)(i).
[590] *Id.* § 18-5-306(c)(iii); *see also DEQ Subdivision Application Review Flow Chart*, WYO. DEP'T ENVTL. QUALITY: SUBDIVISION REV. http://sgirt.webfactional.com/media/uploads/wqd/www/2013-1114_wqd-www-subdiv_flow_chart.pdf (last visited June 30, 2016) (providing a DEQ subdivision application review flow chart).
[591] WYO. STAT. ANN. § 18-5-308(c).
[592] *Id.* § 18-5-306(c)(ii); WYO. CODE R. § 9.
[593] WYO. STAT. ANN. §§ 18-5-201 to 18-5-307.
[594] *Id.* § 18-5-307.
[595] *Id.*

zoning commission within that time[,] the plat is deemed to be approved by the planning and zoning commission."[596]

The board of county commissioners makes the final determination on an application for a subdivision permit or ruling.[597] "If any part of the subdivision lies within one mile of the boundaries of an incorporated city or town[,] the approval of the governing body of the city or town must also be obtained."[598]

Process to Contest Determination:

A person aggrieved by the action of the board of county commissioners may seek judicial review in accordance with the Wyoming Administrative Procedures Act and the Wyoming Rules of Civil Procedure.[599]

Comparing Wyoming's Assured Water Supply Laws to Other States:

Wyoming's Subdivision Statute provides detailed requirements for the determination of water supply adequacy made by counties. The additional review and approval by the DEQ gives additional protection, and the DEQ may also engage the State Engineer for further reliability.[600] Notice of an inadequate water supply determination must be provided to all potential purchasers,[601] akin to Arizona's inadequate water report for developments outside of the Active Management Areas,[602] California's insufficient determination included in its findings for the project,[603] and Colorado's requirement of providing a copy of the State Engineer's adverse opinion.[604] Wyoming's assured water supply program only applies, however, to unincorporated areas in each county,[605] and no state statutes provide specific protection to municipal areas. Some municipalities have adopted their own water adequacy provisions.[606]

---

[596] *Id*.
[597] *Id.* § 18-5-308(a).
[598] *Id*. § 18-5-308(b).
[599] *Id.* § 18-5-312 ("The provisions of this article are enforceable by all appropriate legal remedies including but not limited to injunctive relief or a writ of mandamus."); *Id.* §§ 16-3-101 to -115; WYO. R. CIV. P.
[600] WYO. STAT. ANN. § 18-5-306(c).
[601] *Id*. § 18-5-308(c).
[602] ARIZ. REV. STAT. § 45-108 (LexisNexis 2016).
[603] CAL. WATER CODE § 10911(c) (West 2016).
[604] COLO. REV. STAT. § 30-28-136(1)(h)(I) (2015).
[605] WYO. STAT. ANN. § 18-5-301.
[606] *See, e.g.,* CITY OF LANDER, WYO., SUBDIVISION RULES AND REGS. § 7 (2003), *available at* http://landerwyoming.org/wp-content/uploads/2011/12/SUBDIVID2.pdf; RIVERTON, WYO., MUN. CODE § 16.16.100 (2016), *available at* http://qcode.us/codes/riverton/?view=desktop&topic=16-16_16-16_16_100.

V. CONCLUSION

Assured water supply laws are evolving to contend with increasing water scarcity, creeping urbanization, population growth, and climate change impacts on water. Water managers and land planners both are recognizing that it is desirable to provide protection to home buyers by ensuring that an adequate water supply will be available to serve new development. In the past, very little contact, much less meaningful coordination, occurred between land planning agencies and municipal water suppliers, sometimes even when these agencies were part of the same local governmental entity. Some state laws are moving in the direction of encouraging such coordination to ensure that land use approvals are made with a complete understanding of the availability of water supplies, but this is not universal by any measure.

Local control over land use decisions is a jealously guarded right. It is also true, however, that development approvals made by local governmental bodies impact regional and even statewide water availability. Ground water aquifers that serve multiple counties may be affected. Pressure on local supplies may increase motivation to purchase and dry-up agricultural land in nearby areas, or contribute to the necessity for large water development projects that impact other regions. Planning for an uncertain water future can rarely be confined to a local level; state resources and expertise are essential. State governments, therefore, have a responsibility to ensure that local land use decision-making appropriately takes water availability into account.

Certain desirable characteristics have emerged from this detailed comparison of laws in the western states. Universal applicability of the requirement for a water adequacy determination is one such characteristic. Over-appropriated areas may warrant more stringent requirements, but omitting some areas entirely from a water adequacy review leaves a category of home buyers without protection. Although it may be assumed that developments within municipalities will have adequate water service provided by a municipal supplier, this is simply not always the case. A municipal provider's overall water portfolio should be reviewed to determine its ability to support the proposed new development (and other development anticipated in the applicable comprehensive plan). In addition, for development within a municipality that will not be served by an existing municipal provider, the water supply plan should be reviewed for adequacy under the same procedures as are used for unincorporated areas in a county.

Water systems and the legal structure in which they operate are complex machines. Making a determination that an adequate supply will be available requires specialized technical and legal knowledge. Relying

on a board of county commissioners or a city council to understand a proposed water supply plan and determine that it is adequate assumes expertise not normally found in those governing bodies. But the western states do have state administrative departments or divisions with the required expertise. Better consumer protection would be achieved if the appropriate administrative agency were involved in the land use approval process for the purpose of providing an opinion on the adequacy of the proposed water supply.

The minimize size of development for which a water adequacy determination is required results from balancing the desire for consumer protection with the burden on the developer to provide the needed information and prove up the availability of sufficient water to serve the development. Many states have resolved this question with a minimum size in the four to six unit range. Because a reliable water supply is fundamental to a viable residence, it would seem that a relatively small minimum size is appropriate and that the provision of assurance that needed supplies will be available is a reasonable cost of doing business to a developer.

Even a straightforward and comprehensive assured water supply statute simply ensures that each new development is reviewed independently. This review will most likely not include consideration of other anticipated growth in the area, the overall pressure on available supplies, the impacts of removing agricultural water rights from the land, declines in aquifer levels, or regional goals for water sustainability. These factors may be part of regional or multi-governmental comprehensive plans and, if so, should be factored into the water adequacy determination process. Otherwise, one-off approvals of individual developments can undermine any attempt at regional sustainability. Some states, like Arizona, and to a more limited extent, California and Washington, are moving in this direction. Their experiences should be observed and the lessons learned taken into account in other states.

Each of the western states examined here anticipates water shortages, at least in some regional areas. To avoid significant loss of agricultural land and productivity, water conservation plays a key role. As stated in comments to Colorado's recently published state water plan, "every community can do better on water conservation and efficiency via locally determined measures such as . . . enhanced building codes and water sensitive land use planning."[607] But there is little direction or guidance at the

[607] Comments on DRAFT COLORADO WATER PLAN from Boulder County, City and County of Denver, City and County of Broomfield, Eagle County, Grand County, Pitkin County, and Summit County, Item #67, Input Received Between Mar. 5 and May 1,

state level concerning the types of conservation measures that local land use approval agencies should consider requiring of new development, or which measures generate the most water savings. This is an area of evolution, as seen in Arizona[608] and New Mexico,[609] and other states should follow suit. Different measures may be appropriate and effective in different areas, but states could provide a menu of different types of conservation techniques for incorporation into land use approvals.

Incorporation of long-term water availability considerations into land use approvals for new development is essential for overall sustainability. Although local control over land use decision-making is a given, much better integration with water supply planning is required to ensure that development approvals are not provided in a vacuum and local impacts are not allowed to overwhelm careful planning for the future by regional and state water agencies. The techniques adopted by various western states and the trends noted in this paper are instructive and can be considered for incorporation into law or regulation in other areas.

2015, *available at* https://www.colorado.gov/pacific/cowaterplan/record-input-received-date.

[608] ARIZ. REV. STAT. §§ 45-563, -567, -567.01.

[609] N.M. STAT. ANN. § 47-6-9(A)(4).

Mountain Biking into the Wilderness

Heidi Ruckriegle*

* Associate Attorney at Welborn Sullivan Meck & Tooley, P.C.

ABSTRACT

America's Wilderness Act of 1964* (the "Wilderness Act") dedicates unique and scenically important federal lands for protection from development. Over time, the increased acreage of federal land designated as Wilderness, and new legislative proposals to further expand Wilderness, have fueled controversy over the scope of activities that may be pursued in Wilderness areas. One of the most hotly contested debates of the 21st Century examines whether the Act allows mountain bikers to recreate in Wilderness. And, if not, the corollary question is raised of whether the Act should be amended to explicitly allow mountain bikes on Wilderness trails. For Wilderness designations to expand with minimum opposition moving forward and, to invite a new generation in to use and support Wilderness, this issue requires resolution. With recent developments for the outdoor recreation industry, both Congress and the Senate find themselves questioning the Wilderness Act and its ability to incorporate mountain bikers.

* Wilderness Act, Pub. L. No. 88-577, 78 Stat. 890 (1964), codified at 16 U.S.C. §§ 1131-1136.

Table of Contents

I. INTRODUCTION

Imagine a remote location of the United States. Now imagine the beauty of that location is like no photograph, film, Instagram, or YouTube video you have ever seen. The beauty can only be captured through your two eyes, your deep inhalations, your connection to nature, your physical challenge of biking far away from the man-made chaos of civilization. Enjoy the beauty while it lasts, you won't be coming back, not on your mountain bike. You are in one of the locations across the country where a once much loved trail system will soon be closed off to mountain bikers due to its consideration for designation as a Wilderness area.[1]

America's Wilderness Act of 1964[2] (the "Wilderness Act") dedicates unique and important federal lands for protection from development.[3] Congress, the President, and federal land management agencies can apply various designations to federal lands to confer a range of protections.

Of such legal designations, Wilderness, with a capital "W," is the strongest and most enduring—considered the gold standard of conservation.[4] Yet, since its inception, the Wilderness Act has fueled debates over use of these specially protected federal lands. Over time, the increased acreage of federal land designated as Wilderness, and new legislative proposals to further expand Wilderness, have added to the tension over the scope of activities that may be pursued in Wilderness areas. One of the most hotly contested debates of the 21st Century examines whether the Act allows mountain bikers to use recreate in Wilderness. And, if not, the corollary question is raised of whether the Act should be amended to explicitly allow mountain bikes on Wilderness trails. For Wilderness des-

[1] For example, in 2015, the Bitterroot National Forest agency management closed off about 102,000 acres of the Blue Joint and Sapphire Wilderness Study Areas to motorized and mechanized transport, which included mountain bike use. *See* Kate Whittle, *Geared up for a fight: Cyclists object to Bitteroot National Forest plan*, Missoula Independent: Indy Blog (Apr. 15, 2015), http://missoulanews.bigskypress.com/IndyBlog/archives/2015/04/15/cyclists-object-to-bitterroot-national-forest-plan.

[2] Wilderness Act, Pub. L. No. 88-577, 78 Stat. 890 (1964) (codified at 16 U.S.C. §§ 1131-1136).

[3] *See* RICHARD J. LAZARUS, *THE MAKING OF ENVIRONMENTAL LAW* 67 (2004); Robert L. Glicksman & George Cameron Coggins, *Wilderness In Context*, 76 DENV. U. L. REV. 383, 387–89 (1999).

[4] A majority of Americans support Wilderness designations in their home state. *See* Rebecca Wittman, *American Polling on Wilderness Protection*, ZOGBY INTERNATIONAL 3 (Jan. 23, 2003), http://www.whiteriverwild.org/public/File/Zogby%20Wilderness%20Poll.pdf.

ignations to expand with minimum opposition moving forward and, to invite a new generation in to use and support Wilderness, the mountain bike issue requires resolution.

Preservation of Wilderness is a desirable goal for many reasons, from ecological protection to spiritual revitalization. The thought of nature alone can inspire a sense of freedom or solitude, a feeling of transcendent connection to nature, and a perceived need to defend Wilderness.[5] In order to "assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition," Congress declared its policy "to secure for the American people of present and future generations the benefits of an enduring resource of wilderness."[6] But with the desire to preserve landscapes "untrammeled by mankind"[7] also comes the heated opposition spurred by would-be user groups who obstruct the addition of more lands to the Wilderness system.[8]

This article evaluates whether, as a matter of law or policy, mountain bikers should be allowed in designated Wilderness. Part II details the history of the passage of the Wilderness Act and the language describing the intent of this Congressional effort. Next, Part III explains the activities, or uses, not permitted within Wilderness areas. Part IV introduces a new group of would be users—the mountain bikers and Part V discusses the three options available to this group of users moving forward. In the Conclusion, the Article resolves that the best alternative for mountain bikers —and the wilderness community is to work together on federal

[5] For historical discussions on the development of wilderness as a concept in American intellectual history include: RODERICK FRAZIER NASH, WILDERNESS AND THE AMERICAN MIND (4th ed. 2001) and PAUL SUTTER, DRIVEN WILD: HOW THE FIGHT AGAINST AUTOMOBILES LAUNCHED THE MODERN WILDERNESS MOVEMENT (2002). *See also* MAX OELSCHLAEGER, THE IDEA OF WILDERNESS: FROM PREHISTORY TO THE AGE OF ECOLOGY (1991). For articles on the subject of wilderness within the legal literature, *see, e.g.*, Michael McCloskey, *The Wilderness Act of 1964: Its Background and Meaning*, 45 OR. L. REV. 288 (1966); John Copeland Nagle, *The Spiritual Values of Wilderness*, 35 ENVTL. L. 955 (2005); Patrick A. Shea, *Wilderness Act of 1964: Reflections, Applications, and Predictions*, 76 DENV. U. L. REV. 331 (1999); Sandra Zellmer, *A Preservation Paradox: Political Prestidigitation and an Enduring Resource of Wildness*, 34 ENVTL. L. 1015 (2004).

[6] National Wilderness Preservation System, 16 U.S.C. § 1131(a) (2006).

[7] *Id.*

[8] *See, e.g.*, Sarah Krakoff, *Settling the Wilderness*, 75 U. COLO. L. REV. 1159, 1161–74 (2004) (describing and criticizing litigation settlement in the context of lawsuit over inventory of and management prescriptions for wilderness study areas in Utah); Zellmer, *supra* note 5, at 1050-81 (exploring means of Wilderness preservation through executive action).

legislation and policies to include this new class of recreation in Wilderness on a case-by-case basis.

II. A BRIEF PRIMER ON THE WILDERNESS ACT

American appreciation of nature developed during the "Romantic Era" of the late 19th century, thanks to various contributions in art, [9] literature,[10] science and policy. Politicians on both sides of the aisle supported preservation and protection of unique landscapes in the creation of Yellowstone National Park (1872)[11] and Yosemite National Park (1890).[12] Early in the 20th century, however, the once collective movement for conservation of public lands began to fragment.[13] John Muir, founder of the Sierra Club in 1892, came to represent the spiritual and aesthetic values of wilderness, which clashed with the progressive, utilitarian vision of Gifford Pinchot, the first head of the U.S. Forest Service who wished to see the nation's resources developed efficiently for the public good, protected from private interest exploitation.[14] Pinchot's successful proposal to dam the Hetch Hetchy Valley, within Yosemite National Park, for San Francisco's municipal water and power, brought this tension to bitter conflict.[15] Muir believed human needs for natural re-

[9] Painters including Federic Church and Albert Bierstadt took on heroic landscapes and scenic wonders in painting large-scale landscapes. *See* Avery, Kevin J., *The Hudson River School*, *In Heilbrunn Timeline of Art History*, NEW YORK: THE METROPOLITAN MUSEUM OF ART, (Oct. 2004), http://www.metmuseum.org/toah/hd/hurs/hd_hurs.htm.

[10] Transcendentalists—Ralph Waldo Emerson, Henry David Thoreau, and their associates—embraced the Romantic movement believing self and nature were one. *See* Kathryn VanSpanckeren, *The Romantic Period, 1820-1860: Essayists and Poets*, U.S. Dep't of State: Outline of American Literature (Oct. 10, 2013), http://iipdigital.usembassy.gov/st/english/publication/2008/05/20080512215714eaifas0.1850855.html#ixzz4CJue3Vnb.

[11] Act of Mar. 1, 1872, ch. 24, 17 Stat. 32 (creating Yellowstone National Park).

[12] Act of Oct. 1, 1890, ch. 1263, 26 Stat. 650 ("An act to set apart certain tracts of land in the State of California as forest reservations.").

[13] *See* Ann E. Carlson, *Standing for the Environment*, 45 UCLA L. REV. 931, 964 (1998) (describing the split in the philosopy as it relates to standing for the environment). Anthropocentrism, supported by more conservative "preservationists," like Gifford Pinchot, is a human-centered ethic where the core belief is that humans should protect and promote the well-being of humans by placing some constraints on the development and treatment of natural resources. *Id.* at 965-66. Biocentrism, developed among liberal "preservationists," like John Muir, is a resource-based ethic where the core philosophical belief is that nature exists for its own sake and should be valued without reference to human needs or wants. *Id.* at 964-65.

[14] John M. Meyer, *Gifford Pinchot, John Muir, and the Boundaries of Politics in American Thought*, 30 Polity 2, 267-284 (1997).

[15] Nash, *supra* note 5; *See, e.g.*, Elmo R. Richardson, *The Struggle for the Valley: California's Hetch Hetchy Controversy, 1905-1913*, 38 CAL. HIST. SOC'Y Q. 249

sources could be met without destroying our most beautiful scenery.[16]

Along with John Muir, Aldo Leopold came to be known as a founding father of the Wilderness Act. Leopold advocated for a separate classification of national forests to be preserved as roadless.[17] Leopold resisted the rise of the automobile, which Muir, too, had seen as a threat to wilderness. Once manufacturers began to mass-produce the automobile, touring and camping by automobile rapidly became popular; the parks and forest recreation areas quickly filled with the roads, lodging, and shops to accommodate the masses. Leopold sought to protect some public lands from this sort of development for two reasons. First, for those who wished to pursue primitive types of recreation, including travel by canoe and simple solitude, and, second, for the protection of land and wildlife.[18] As Leopold saw it, Congress needed to create protected natural areas "for allowing the more virile and primitive forms of outdoor recreation to survive the receding economic fact of pioneering."[19]

Philosophically, Leopold integrated wilderness appreciation with the developing scientific understanding of ecology, established new arguments for preserving wilderness, and articulated a moral vision for "human's relation to land and to the animals and plants, which grow upon it,"[20] He called this theory the "land ethic."[21] Leopold increasingly emphasized the value of wilderness for science, an opportunity to study pristine land and the biotic communities that have functioned within for centuries. Leopold firmly believed in the land ethic and that only a change in our ethical attitude could prevent humans from destroying pristine landscapes. Time would prove Leopold correct as his and Muir's ap-

---

(1959); HOLWAY R. JONES, JOHN MUIR AND THE SIERRA CLUB: BATTLE FOR YOSEMITE (1965). *But see*, ROBERT W. RIGHTER, THE BATTLE OVER HETCH HETCHY (2005).

[16] JOHN MUIR, THE YOSEMITE, 262 (1912) (sarcastically calling for the building of dams not to stop there, but rather to continue with the damming of "[T]he people's cathedrals and churches, for no holier temple has ever been consecrated by the heart of man.").

[17] *See generally* Aldo Leopold, *The Last Stand of the Wilderness*, 31 AMERICAN FORESTS AND FOREST LIFE 382, (1925).

[18] Aldo Leopold, *Wilderness as a Form of Land Use*, *in* THE GREAT NEW WILDERNESS DEBATE 75 (J. Baird Callicott & Michael P. Nelson eds., 1998).

[19] *Id.* at 79; *see also* Letter from Wallace Stegner (Dec. 3, 1960), as quoted in Plaintiffs-appellants' opening brief at 1, Wilderness Watch, Inc. v. U.S. Fish & Wildlife Serv., 629 F.3d 1024 (9th Cir. 2010) (No. 08-17406) (discussing wilderness writer Wallace Stegner encapsulated this view when he emphatically insisted that wilderness must be preserved because "[I]t was the challenge against which our character as a people was formed." In the same passage, Stegner also cited to the other experiential values of wilderness, namely its importance for "our spiritual health" due to the "incomparable sanity it can bring briefly, as vacation and rest, into our insane lives.").

[20] ALDO LEOPALD, THE SAND COUNTY ALMANAC 203 (1979).

[21] *Id.*

preciation for nature developed into the movement which ultimately led to the passing of the Wilderness Act.

A. Public Land Management Before the Wilderness Act

Early in the history of the United States Forest Service, leaders developed the concept of wilderness and recognized the need to preserve areas of national forests in a pristine and natural state.[22] Policymakers, including Pinchot, viewed the national forests as a resource to be managed for the present and future needs of the public. In response, many foresters and preservationists became concerned that increased use of the national forests would eliminate the remaining pristine wilderness.[23] In 1920, a Forest Service "recreation engineer," Arthur Carhart, successfully convinced his supervisors to preserve a small area around Trappers Lake, Colorado, and parts of Superior National Forest, Minnesota, as wild areas managed exclusively for recreation and aesthetic values.[24] Then, in 1924, the Forest Service designated the Gila Wilderness in New Mexico after Aldo Leopold, at the time a Forest Service land manager, began a campaign to set aside more land within the national forests for wilderness.[25]

The Forest Service continued to promulgate regulations and policies to increase the protection of undeveloped areas in the national forest system.[26] In 1929, the Forest Service implemented Regulation L-20, which authorized the Chief of the Forest Service to classify national forests as

---

[22] *See* RODERICK NASH, WILDERNESS AND THE AMERICAN MIND 262 (3d ed. 1982); Margaret Shulenberger, *Construction and Application of Wilderness A*ct (*16 U.S.C.A. § 1131 et seq.) providing for National Wilderness Preservation System*, 14 A.L.R. FED. 508, 510 (1973) (noting that the Wilderness Act gave recognition to objectives that "had been recognized to a certain extent in the management of the national forests for some 40 years.").

[23] *See, e.g.*, Robert Marshall, *The Problem of the Wilderness, in* THE GREAT NEW WILDERNESS DEBATE 85, 87, 95 (J. Baird Callicott & Michael P. Nelson eds., 1998) ("Within the next few years the fate of the wilderness must be decided.... [T]he preservation of a few samples of undeveloped territory is one of the most clamant issues before us today. Just a few more years of hesitation and the only trace of that wilderness which has exerted such a fundamental influence in molding American character will lie in the musty pages of pioneer books and the mumbled memories of tottering antiquarians. To avoid this catastrophe demands immediate action.").

[24] *See* Peter A. Appel, *Wilderness and the Courts*, 29 STAN. ENVTL. L.J. 62, 72 (2010); Gary Bryner, *Designating Wilderness Areas: A Framework for Examining Lessons From the States*, USDA FOREST SERVICE PROCEEDINGS RMRS-P-049, 274 (2007); Nash, *supra* note 5, at 185-86.

[25] ROSS W. GORTE, CONG. RESEARCH SERV., WILDERNESS: OVERVIEW AND STATISTICS 1 (2010).

[26] *See* Brandon Dalling, *Administrative Wilderness: Protecting Our National Forestlands in Contravention of Congressional Intent and Public Policy*, 42 NAT. RESOURCES J. 385, 389 (2002).

"primitive areas" based upon recommendations from the various regional land managers.[27] Primitive areas limited but did not prohibit resource extraction, loading and permanent improvements and generally prohibited road building, except where essential for agency management.[28] The stated purpose of L-20 was "to maintain primitive conditions of transportation, subsistence, habitation, and environment to the fullest degree compatible with their highest public use with a view to conserving the values of such areas for purposes of public education and recreation."[29]

Ten years later in 1939, the Forest Service replaced Regulation L-20 with [30] U-Regulations, which created four categories of preserved land within the national forests: wilderness areas (Regulation U-1), wild areas (Regulation U-2), recreation areas (Regulation U-3), and experiment and natural areas (Regulation U-4).[31] All U-Regulations incorporated the key limitations on forest use from the prior Regulation L-20, including prohibitions on permanent improvements, resource extraction, and non-primitive transportation.[32] U-Regulations replaced L-20 with much clearer, higher-level protection for what were now to be called *wilderness areas* (and, if under 100,000 acres, *wild areas)*.

These early Forest Service efforts increased both the number and size of preserved areas within the National Forests.[33] Nonetheless, the discretionary nature of Forest Service land classifications concerned preservationists, who feared that extractive industry lobbyists would convince future administrators to decrease the number and size of protected areas. [34] Consequently, preservationists began a campaign lobby-

[27] *See* Appel, *supra* note 24, at 72.

[28] *See id.*

[29] DENNIS M. ROTH, THE WILDERNESS MOVEMENTAND THE NATIONAL FORESTS 3 (1988) (citing Regulation L-20, Oct. 30, 1929).

[30] *See* Martin Nie, *Administrative Rulemaking and Public Lands Conflict: The Forest Service's Roadless Rule*, 44 NAT. RESOURCES J. 687, 697 (2004) (explaining the 1939 U-Regulations).

[31] *See* 36 C.F.R. §§ 251.20-.23 (1939); Appel, *supra* note 24, at 73.

[32] See Appel, *supra* note 24, at 73-74; Zellmer, *supra* note 5, at 1067; *McMichael v. United States*, 355 F.2d 283, 286 (9th Cir. 1965) (upholding a federal conviction under the U-Regulations).

[33] *See* McCloskey, *supra* note 5, at 296.

[34] *See Id.* at 297. Some Forest Service designations of primitive and wilderness areas under the L and U-Regulations had been revoked. Before 1964, the French Pete Valley in Oregon and parts of the Gila Wilderness in New Mexico were reopened to logging. *See* GEORGE CAMERON COGGINS ET AL., FEDERAL PUBLIC LAND AND RESOURCES LAW 1010-11 (6th ed. 2007).

ing Congress to enact statutory protections for the nation's unique wild lands.[35]

B. Passing the Wilderness Act

Preservationists, led by Howard Zahniser, gained steam by the 1950s and organized an influential campaign to pass a wilderness bill in Congress.[36] Zahniser argued that Congress needed to formally act on wilderness because the Forest Service lacked statutory authority to create wilderness areas or prohibit future mining or dam-building in wilderness or wild areas.[37] He criticized the Forest Service action and emphasized that, technically, only Congress had the power to designate wilderness in the national parks.[38]

After nearly a decade of debate, Congress passed the Wilderness Act of 1964, which established a national policy of preserving wilderness areas for future generations.[39] The Act designated as wilderness all 9.1 million acres of existing Forest Service designated U-1 wilderness areas and U-2 wild areas[40] and called for the Secretary of Agriculture to study other existing "primitive areas" to determine which were suitable for designation.[41] Congress required the Secretaries of Agriculture and the Interior to conduct reviews of all primitive areas larger than 5,000 acres in national forests, national parks, and national wildlife refuges and ranges; and to submit recommendations for wilderness designations to the presi-

---

[35] Dave Brower, a close confidant of Zahniser, advocated for the statutory protection by explaining the concept of de facto wilderness: "They are simply 'wilderness areas which have been set aside by God but which have not yet been created by the Forest Service.'" De facto wilderness, he explained, is "the wilderness that waits in death row . . . . and there has been nothing like . . . a fair trial." David R. Brower, *De Facto Wilderness: What Is Its Place?*, in WILDLANDS IN OUR CIVILIZATION 103, 109 (1964) (citation omitted).

[36] *See* McCloskey, *supra* note 5, at 297-98.

[37] *See id.*; GENERAL MINING ACT OF 1872, ch. 152, 17 STAT. 91, (codified as amended at 30 U.S.C. §§ 22-24, 26-30, 33-35, 37, 39-43, 47 (2006)) (allowing mining claims on federal lands, including national forests); FEDERAL POWER ACT OF 1920, ch. 285, 41 STAT. 1063, (codified as amended at 16 U.S.C. §§ 792-819, 820-23 (2006)) (authorizing dam construction on federal lands, including national forests).

[38] *See* McCloskey, *supra* note 5, at 298.

[39] Congress held some 30 congressional hearings, and a total of 65 different wilderness bills were proposed before the final passage. *See id.* at 298-300.

[40] *See* Appel, *supra* note 24, at 73; Coggins et al., *supra* note 34, at 1011. The Wilderness Act also automatically designated Forest Service "canoe" areas, which meant the Boundary Waters Canoe Area, the only area ever designated by the Forest Service as a U-3 recreation area or canoe area. 16 U.S.C. § 1132(a) (2012); 36 C.F.R. § 293 (2012); *see* LES JOSLIN, THE WILDERNESS CONCEPT AND THE THREE SISTERS WILDERNESS: DESCHUTES AND WILLAMETTE NATIONAL FORESTS, OREGON 14 (2005).

[41] 16 U.S.C. § 1132(a).

dent and Congress within ten years.[42] After 1964, only a public law could designate federal land as Wilderness.[43]

C. The Language of the Wilderness Act

According to the Wilderness Act of 1964, the policy of Congress is to "secure for the American people of present and future generations the benefits of an enduring resource of wilderness."[44] "For this purpose," the Act continues,

> there is hereby established a Wilderness Preservation System to be composed of federally owned areas designated ... as "wilderness areas", and these shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use as wilderness . . . .[45]

Wilderness designations exist to protect lands where the presence of humanity is temporary and nature remains "untrammeled." The Wilderness Act incorporates romantic ideals into legal language:[46]

> A Wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of Wilderness is further defined to mean in this chapter an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation . . . .

In the Act, Congress acknowledges that Wilderness areas are not to simply be "preserved," but instead "managed" by federal agencies to protect natural conditions.[47] The general purpose of the Act is to manage certain federal lands in "such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."[48]

Overall, the Wilderness Act requires a delicate balance between Congress's desire to maintain lands untrammeled by man and Congress's recognition that such an idealistic view is subject to practical limita-

---

[42] *Id.*
[43] *Id.*
[44] 16 U.S.C. § 1131(a).
[45] *Id.*
[46] 16 U.S.C. § 1131(c).
[47] *Id.*
[48] 16 U.S.C. § 1133(c).

tions—this reality is evidenced by the various exceptions built in to the Act's statutory text discussed in further detail below.[49] Each management agency possesses independent management discretion over how to properly balance human uses with preservation of habitat and other resources of Wilderness areas in their respective jurisdiction; guided by the Wilderness Act, their enabling legislation, and the particular act designating the Wilderness.[50]

D. Wilderness Over Time

Federally designated Wilderness areas exist within each major category of federal lands managed by the four land management agencies—the Forest Service ("FS"), National Park Service ("NPS"), Bureau of Land Management ("BLM"), and U.S. Fish & Wildlife Service ("FWS") (collectively referred to in this article as "management agencies").[51] Geographically, the network of Wilderness areas established by the Act, known as the National Wilderness Preservation System, has grown from approximately 9 million acres at the time of enactment to well over 109 million acres[52]—including lands in 44 states.[53] The Wilderness Act did not initially include public lands managed by BLM but, in 1976 Congress enacted the Federal Land Management Policy Act ("FLMPA");[54] Section 603 of FLMPA directed the agency to evaluate its lands for wilderness characteristics and report to the President by 1991. Although the Wilderness Act provides the overarching definition and direction for Wilderness, subsequent acts have added the majority of acreage to the National Wilderness Preservation System.[55] Congress may pass an act to designate an individual area of Wilderness or incorporate multiple areas, for instance the Omnibus Act of 2009 designated two million acres of Wilderness in multiple states.

Management agencies lead the Wilderness designation process, which occurs in four steps—inventory, evaluation, analysis, and recom-

[49] WILDERNESS WATCH V. UNITED STATES FISH & WILDLIFE SERV., 629 F.3d 1024, 1040 (9th Cir. 2010).

[50] *See, e.g.*, CHAD P. DAWSON & JOHN C. HENDEE, WILDERNESS MANAGEMENT: STEWARDSHIP AND PROTECTION OF RESOURCES AND VALUES (4th ed. 2009).

[51] Bradley C. Karkkainen, *Biodiversity and Land*, 83 CORNELL L. REV. 1, 40 (1997).

[52] *See* Wilderness Fast Facts, http://www.wilderness.net (navigate to About Wilderness, then Fast Facts).

[53] Connecticut, Delaware, Iowa, Kansas, Maryland, and Rhode Island are the exceptions. There is also one Wilderness area in Puerto Rico. *See* Caribbean National Forest Act of 2005, Pub. L. No. 109-118, 119 Stat. 2527 (2005) (creating El Toro Wilderness).

[54] Pub.L. 94-579, 90 Stat. 2743, 43 USC § 1701 *et seq.*

[55] Creation and Growth of the National Wilderness Preservation System, Wilderness.net, http://www.wilderness.net/index.cfm?fuse=nwps&sec=fastfacts.

mendation—each requiring opportunities for public participation.[56] The following three criteria must each be present in order for an area to be considered for Wilderness: size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation. An Environmental Impact Statement must accompany all wilderness recommendations. More recently, Wilderness recommendations have been made to Congress from local, political efforts to craft a combination of land designations that identify some land as Wilderness and reserve other lands for particular types of recreation or other forms of development.[57] These efforts are designed to bring resolution to what can be an uncertain status for federal lands as quasi-wilderness and avoid the controversy that has stalled several Wilderness proposals.

For example, pursuant to FLPMA's Section 603 requirement in 1991, the BLM recommended 23 million acres—a relatively small portion of its over 245 million acres—as suitable for designation as Wilderness, which it divided into 191 "wilderness study areas" ("WSA").[58] From this, President George H.W. Bush made his recommendations for Wilderness to Congress and, for the most part, Congress failed to act to designate the identified BLM lands as Wilderness. In the meantime, all lands identified as wilderness study areas by BLM in 1991—WSAs—are managed by BLM to preserve their eligibility for designation by Congress as Wilderness.[59]

Over the last several administrations, there have been attempts to broaden or narrow the ongoing authority of BLM to identify lands suitable for Wilderness outside the Section 603 process. The Clinton administration urged the use of the FLMPA Section 202 planning authority to designate and manage "Section 202 WSAs" to preserve their eligibility as Wilderness. Extractive industry and state frustration over WSAs peaked at this time because BLM undertook a re-inventory of millions of acres of land in Utah that had, in the initial Section 603 inventory, been found to lack wilderness characteristics.[60] The re-inventory resulted in the identification of an additional 3.1 million acres of land with wilder-

[56] *See, e.g.,* Planning Regulations (36 CFR § 219.7(c)(2)(v)) and the Forest Service Handbook (FSH) 1909.12, Chapter 70 for direction and guidance for this process.

[57] *See, e.g.*, David A. Ramsey, Wilderness Act is Key to Local Economy, Johnson City Press (Apr. 22, 2016), http://www.tnwild.org/news/wilderness-act-is-key-to-local-economy/.

[58] Olivia Brumfield, *The Birth, Death, and Afterlife of the Wild Lands Policy: The Evolution of the Bureau of Land Management's Authority to Protect Wilderness Values,* 44 Lewis and Clark Environmental Law Review 1, 250 (2014).

[59] *Interim Management Policy and Guidelines for Land Under Wilderness Review*, 44 Fed. Reg. 72,014 (Dec. 12, 1979); *see also* 43 U.S.C. § 1782(c).

[60] *Utah v. Norton*, No. 2:96-CV-0870 (D. Utah Sept. 20, 1998).

ness characteristics. During the second Bush administration, Utah filed suit, arguing that after 1991, BLM did not have authority to identify new WSAs. BLM conceded in a settlement that its authority to designate WSAs ended in 1991, effectively creating a finite amount of WSAs designated under Sections 603 or 202 but affirmed it had authority under the FLMPA Section 201 "inventory" duty to identify and manage lands with "wilderness characteristics."[61]

In 2009 Secretary Salazar issued Secretarial Order No. 3310, which initiated a review of BLM policies for inventorying lands with wilderness characteristics.[62] Secretary Salazar sought to reverse the Bush administration's policies under the Utah Settlement and renew the Clinton Administration policy of protecting wilderness characteristics on BLM lands. [63] Under the Salazar policy, the inventoried lands with wilderness characteristics outside of WSAs would be classified as "wild lands"—a completely new category of public lands. The Secretarial Order required the BLM to apply a new standard: protecting the wild lands from impairment unless the agency documented reasons to exempt the area and planned mitigation measures.[64]

Congressional challenge to Secretary Salazar's "wild lands" policy quickly shadowed his efforts.[65] On April 14, 2011, House Republicans attached a rider to one of the most important bills in front of Congress,

---

[61] *Brumfield* at 267 (citing *Norton*, No. 2:96-CV-0870, noting that the settlement had no binding effect on BLM's duty and authority under sections 201 and 202, and that consequently BLM "remains free to inventory land for wilderness characteristics pursuant to § 201 and to protect land so as to leave wilderness character unimpaired under § 202 [,]" but without applying section 603's nonimpairment standard).

[62] See Phil Taylor, "Wild Lands" Policy Would Allow Limited Development, BLM Chief Says, N.Y. Times (Mar. 2, 2011), www.nytimes.com/gwire/2011/03/02/02greenwire-wild-lands-policy-would-allow-limited-developm-20171.html; Sec'y of Interior, Order No. 3310, Protecting Wilderness Characteristics on Lands Managed By the Bureau of Land Management (2010), available at http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/public_affairs/news_release_attachments.Par.26564.File.dat/sec_order_3310.pdf [[hereinafter Wild Lands Policy].

[63] See Maureen O'Dea Brill, Making the Case for Wilderness: The Bureau of Land Management's Wild Lands Policy and Its Role in the Storied History of Wilderness Protection, 4 Leg. & Pol'y Brief 7, 20 (2012).

[64] See George Cameron Coggins & Robert L. Glicksman, 3 Public Natural Resources Law § 25:12 at25-23 to 25-24 (2d ed. 2009).

[65] Secretarial Order 3310 (Dec. 22, 2010); *Western Caucus Protests DOI's Attempt to Resurrect Wild Lands Policy* (Aug. 2, 2012) http://www.barrasso.senate.gov/public/index.cfm/news-swc?ID=e9179683-e4b0-c79b-5f94-1bbd41221d9e; *see also Uintah County v. Salazar*, Nos. 2:10-cv-970- CW, 2:11-cv-391-CW (D. Utah) (challenging the BLM's "wild lands" designation as "de facto" wilderness management in contravention of the resource management plan).

the National Defense Appropriations Act.[66] The rider prohibited the Department of the Interior from implementing Secretary Salazar's Order No. 3310, thereby eliminating the BLM wild lands inventory and stalling the process of new wilderness protection across public lands.[67]

Despite the rejection of Order No. 3310, Secretary Salazar later revived his attempt to identify and protect additional BLM wild lands.[68] In 2012, BLM issued two new policies as part of the agency's field guidelines manual, adopting many of the substantive requirements of the Wild Lands Policy.[69] BLM Manual 6310 directed the agency to conduct new inventories to identify additional lands with wilderness tics,[70] and Manual 6320 required BLM field staff to consider wilderness characteristics in Resource Management Plans and project-level planning.[71] Consequently, BLM must now identify new areas that have wilderness characteristics and consider the effects to those wilderness characteristics before approving resource management plans or site-specific projects.[72]

---

[66] Department of Defense and Full-Year Continuing Appropriations Act of 2011, Pub. L. No. 112-10, § 1769, 125 Stat. 38 (2011). Despite the bill's importance, the White House threatened to veto the bill because of the numerous riders and provisions that House Republicans had attached. See Daniel Strauss, White House Threatens to Veto Defense Bill, The Hill (Jun. 23, 2011), http:// thehill.com/homenews/administration/168139-white-house-threatens-2012-defense-appropriations-bill-veto (last visited Oct. 10, 2013).

[67] See Brill, supra note 63, at 9; see also Rocky Barker, Budget Deal Stops BLM Wild Lands Inventory, Idaho Statesman (Apr. 12, 2011), http:// www.garp.org/news-and-publications/overview/story.aspx? altTemplate=PrintYellowBrixStory&newsId=27102.

[68] See Pub. Lands Council, 2011-2012 Annual Report: A Year in Review 19-20 (2012), available at http:// publiclandscouncil.org/CMDocs/PublicLandsCouncil/Annual%20Meeting/ANNUAL%20REPORT%2012.pdf.

[69] See id.; BLM, BLM Manual, available at http:// www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/blm_ manual.html (last visited Dec. 29, 2013).

[70] See BLM, DOI, Manual 6310, Conducting Wilderness Characteristics Inventory on BLM Lands 2-3 (2012).

[71] See BLM, DOI, Manual 6320, Considering Lands with Wilderness Characteristics in the BLM's Land Use Planning Process 2-3 (2012).

[72] BLM Manuals 6310 and 6320 implemented the requirements under FLPMA and NEPA that were recognized by the Ninth Circuit in 2010. In Oregon Natural Desert Ass'n. v. BLM, the court invalidated an RMP because the BLM failed to consider wilderness characteristics in the planning area. 625 F.3d at 1121. The court concluded that wilderness was among the values that Congress intended the BLM to consider in the FLPMA planning process, and therefore, NEPA required consideration of wilderness characteristics in the environmental analysis. See id. at 1122.

III. PROHIBITED ACTIVITIES IN WILDERNESS

Politically, every president since Lyndon Johnson has signed legislation adding acreage to the National Wilderness Preservation System,[73] attesting to the System's longstanding bipartisan political support. More recently, however, a battle has been waged over Wilderness designation between preservationists, who wish to expand Wilderness designations, and mountain bikers, who fight to limit such designations so that they can continue to legally access a network of trails that would be off-limits under the correct understanding of a Wilderness designation.[74]

The Wilderness Act separates prohibited activities into two categories. The first contains categorically prohibited activities including commercial enterprises and permanent roads.[75] The second category includes nine specific activities: (1) temporary roads; (2) motor vehicles; (3) motorized equipment; (4) motorboats; (5) aircraft landings; (6) mechanical transport; (7) structures or installations; (8) permanent roads; and (9) commercial enterprises.[76] These prohibitions rely on the congressional delineation that in Wilderness no "permanent improvements or human habitation" would be allowed.[77] All nine activities are generally prohibited except determined by a management agency to be "necessary to meet minimum requirements for the administration of the area for the purpose of this Act."[78]

Notable applications of this exception include: motorized travel for search and rescue;[79] grazing;[80] and the management of fire, disease, and

---

[73] On March 30, 2009, President Obama joined this list when he signed the Omnibus Public Land Management Act of 2009, Pub. L. No. 111-11, 125 Stat. 991 (2009) (to be codified in scattered sections of 16 U.S.C. and 43 U.S.C.). That act added over 2 million additional acres to the National Wilderness Preservation System. *See* Wilderness Fast Facts, *supra* note 52.

[74] For dueling articles on this debate, *see* George Wuerthner, The Mountain Bike Invasion of Wilderness Areas, Counterpunch (Jan, 2015), http://www.counterpunch.org/2015/01/01/the-mountain-bike-invasion-of-wilderness-areas/ and Vernon Felton, The Bigotry of Wilderness: Do Bikes Belong in Wilderness? (May 11, 2015), http://www.bikemag.com/features/opinion/web-monkey-speaks/the-web-monkey-speaks-the-bigotry-of-wilderness/.

[75] 16 U.S.C. § 1133(c);

[76] 16 U.S.C. § 1133(d); s*ee also* Frank Buono, *The Wilderness Act: The Minimum Requirement Exception*, 28 George Wright F., 2011, at 307, 308 (listing the prohibitions and exceptions).

[77] *Id.* § 1131(c).

[78] 16 U.S.C. § 1133(c).

[79] *Wilderness Watch, Inc. v. Bureau of Land Mgmt.*, 799 F. Supp. 2d 1172, 1184 (D. Nev. 2011).

[80] 16 USC § 1133(d)(4).

insects.[81] Management agencies appear to liberally apply the "minimum requirements" exception, taking advantage of this inherently subjective determination. For example, the NPS concluded that the use of helicopters to install structures to upgrade the telecommunications network in Denali National Park satisfied the minimum requirements exception.[82] The NPS acknowledged that "[t]hese actions are not legally necessary and do not insure the preservation of wilderness character," but emphasized, "they do support the public purposes of recreation, science, education, . . . conservation, and public safety." Courts, on the other hand, have taken a much narrower view of the exception.[83]

Congress too has built in exceptions to many of its Wilderness Acts, with examples ranging from motorized vehicles to climatological devices. The Arizona Desert Wilderness Act of 1990 authorizes border enforcement activities within the Wilderness lands of the Cabeza Prieta National Wildlife Refuge in Southern Arizona.[84] Motorboats are permitted on Little Beaver and Big Beaver Lakes in Michigan's Beaver Basin Wilderness.[85] The management agencies have the obligation "to manage maintenance and access to hydrologic, meteorologic, and climatological devices, facilities and associated equipment" in some of the new wilder-

[81] 16 USC § 1133(d)(1); *Sierra Club v. Lyng*, 694 F. Supp. 1260, 1275 (E.D. Tex. 1988) (holding that tree cutting to treat insect infestation is acceptable in Wilderness so long as it is not for timber interest).

[82] U.S. Dep't of the Interior, Nat'l Park Serv., Denali National Park & Preserve, Environmental Assessment for Telecommunications and Climate Monitoring Improvements in Denali National Park and Preserve 62–64 (2013).

[83] *See, e.g., Wilderness Watch, Inc. v. U.S. Fish & Wildlife Serv.*, 629 F.3d 1024, 1032, 1049 (9th Cir. 2010) (holding that, while sheep conservation was a legitimate purpose within the Kofa Wilderness area, the FWS had failed to establish that the water tanks placed by FWS for sheep threatened by drought and high temperatures were a necessary minimum requirement for Wilderness administration); *Wilderness Watch v. Mainella*, 375 F.3d 1085, 1089–90, 1095–96 (11th Cir. 2004) (rejecting the Park Service's argument that transporting tourists in a passenger van across the Cumberland Island Wilderness in order to provide public access to historical structures was "necessary" for administration because they made access more convenient and had "no net increase" in impacts to the land); *Californians for Alternatives to Toxics v. United States Fish & Wildlife Service*, 814 F. Supp. 2d 992, 1019 (E.D. Cal. 2011) (finding that the agencies improperly elevated the conservation of the Paiute cutthroat trout over the preservation of other endemic species, and enjoining the eradication program because it would "impede progress towards preserving the overall wilderness character.").

[84] Arizona Desert Wilderness Act of 1990, Pub. L. No. 101-628, § 301(g)(1), 104 Stat. 4469, 4479 (1990).

[85] Omnibus Public Land Management Act of 2009, Pub. L. No. 111-11, § 1653(b), 123 Stat. 991, 1043 (2009).

ness areas.[86] Also, military overflights are allowed in several of the new Wilderness areas.[87]

Although the Wilderness Act explicitly furthers the purpose of preserving areas in which "the imprint of man's work [is] substantially unnoticeable,"[88] it also provides that Wilderness is an important venue for recreation: "An area of Wilderness is further defined . . . [as] undeveloped Federal land . . . [containing] outstanding opportunities for solitude or a primitive and unconfined type of recreation . . . ."[89] Indeed, many preservation leaders have effectively argued that appropriate recreational uses are essential for the continued protection of Wilderness areas in American society.[90]

A brief comparison of two recreational activities—one allowed, horses, and one disallowed, mountain biking—illustrates the subjectivity of "exceptions" to Wilderness management. Wilderness advocates and land management policies support horse-enabled recreation with seeming blind nostalgia. Supporters of horses in Wilderness areas point to the Act's specific mandate that Wilderness areas be managed consistent with "historic" uses.[91] Likewise, the Forest Service and National Park Service understand the use of horses for recreation and transportation as historic and, therefore, appropriate in Wilderness areas.[92] Simply because the managing agencies have determined horses to be a historical use, the four-legged beasts carrying heavy supplies or passengers are permitted in Wilderness areas. Certainly, the use of mountain bikes could arguably be considered as historic as the use of horses, especially where mountain bikers have traditionally used trails that are only now under consideration for Wilderness designation.[93]

---

[86] *Id.* § 1103(c)(1), 123 Stat. at 1004.

[87] *See id.* § 1503(b)(11)(A), 123 Stat. at 1036 (Owyhee Public Land Management); s*ee also id.* § 1803(g)(1), 123 Stat. at 1056 (Eastern Sierra and Northern San Gabriel Wilderness, California); *id.* § 1972(b)(5)(A), 123 Stat. at 1078 (Washington County, Utah).

[88] 16 U.S.C. §1131(c).

[89] 16 U.S.C. §1131(c).

[90] Ira Spring, *If We Lock People Out, Who Will Fight to Save Wilderness?*, 7 INT'L J WILDERNESS 17 (Apr. 2001).

[91] 16 U.S.C. § 1133(b) states that Wilderness areas "shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservative and historical use."

[92] Letter from R. Max Peterson, Chief of the Forest Service, to Glenn Odell, President, National Off-Road Bicycle Association, and all foresters within the USFS (Nov. 8, 1983); Letter from Chester L. Brooks, Superintendent, Rocky Mountain National Park, to Nat Boswick (Nov. 29, 1982).

[93] *See, e.g.*, the Blue Joint and Sapphire Wilderness Study Areas, *supra* note 1.

Horses are not native to the United States,[94] nor is their existence older than man's invention of the wheel.[95] In terms of disruption, horses can diminish the Wilderness experience in ways similar to opponents' views on mountain bikes: they travel at a faster speed, create more noise, and can dominate the trail. In terms of impact, horse trails are significantly more degraded by use than biking trails.[96] This raises doubts as to whether the preservationists' resistance to mountain biking is actually based on the Act or simply a desire to shut out a user group preservationists see as disruptive to its own Wilderness experience. As discussed in detail below, the management agencies take on bicycles may be flawed.

The Wilderness Act makes no explicit mention of bicycles. However, preservationists read "mechanical transport" to simply mean a broader category of transport other than motorized vehicles.[97] True, both mechanized and motorized transports are plainly excluded. But the contemporary debate over use of mountain bikes in Wilderness looks into the extent and meaning of mechanized transport and whether Congress clearly intended to prohibit bicycles as a form of mechanical transport. Did the Act intend to prohibit low-impact, human-powered bicycle transport, considering that other forms of similar recreation tools aiding humans in accessing Wilderness including snowshoes, backcountry skis, and rafts

---

[94] For discussion on this point, *see* Jay F. Kirkpatrick, Ph.D, Are North America's Wild Horses Native?, The Science and Conservation Center, Billings, Montana (Oct. 7, 2014); *cf.* Animal rights groups asserted that, unlike the history retold in scientific textbooks, horses are actually native to the United States and "an integral part of the environment" *In Def. of Animals v. U.S. Dep't of Interior*, 737 F. Supp. 2d 1125 (E.D. Cal. 2010) (declining to address whether horses are native but denying injunctive relief that would stop BLM's scheduled round-up of wild horses and burros from herd management area).

[95] Megan Gambino, *A Salute to the Wheel*, Smithsonian.com (Jun. 17, 2009).

[96] A 2006 study by the National Park Service stated that "horse and ATV trails are significantly more degraded than hiking and biking trails . . . . [T]he proportion of trails with severe erosion is . . . 24% for ATV trails, 9% for horse trails, 1.4% for hiking trails, and .06% for bike trails." Assessing and Understanding Trail Degradation: Results From Big South Fork National River and Recreation Area, National Park Service: Final Research Report at 34-35, http://www.pwrc.usgs.gov/prodabs/pubpdfs/6612_marion.pdf; *but see* Eden Thurston and Richard Reader, Impacts of Experimentally Applied Mountain Biking and Hiking on Vegetation and Soil of a Deciduous Forest, 27 Environmental Management 3, 397-409 (2001) (""We've found that hikers have the same effect as bikers do, regardless of the number of trips along the path. In reality, both are equally damaging to the environment, but there is increased trail wear because twice the number of people are now using the trails.").

[97] *See, e.g.*, Statement of the Sierra Club on Proposed Regulation of the Secretary of Agriculture For Governing the Administration of National Forest Wilderness, Sept. 30, 1965, p.3, "Most likely mechanical transport was meant to refer to traveling contrivances powered by living power sources such as wagons drawn by horses, bicycles, and wheeled cargo carriers."

with oarlocks are presently permitted by management agencies in Wilderness?[98] Perhaps not.

IV. A NEW RECREATION MOVEMENT SEEKS TO ENTER THE WILDERNESS

Mountain biking—an almost unknown sport when the Wilderness Act was passed in 1964—has exploded in popularity to over 40 million individuals participating in the activity.[99] Participation numbers are not the only growth for the sport, the cyclists' political voice is becoming louder and stronger too. Arguing that this class of public land users should be allowed into the Wilderness to experience naturalness, solitude, challenge and inspiration, mountain bikers dispute preservationists' understanding of mechanical transport.[100]

Following the ideals of Muir, Leopold, Zahniser and the like, preservationists believe that Wilderness areas are unique "windows," in that they allow visitors "to see our past, present, and . . . future" and, therefore, should remain untouched in pristine condition.[101] Preservationists value Wilderness specifically for the lack of human use.[102] In support of solitude, preservationists assert that pristine areas should be protected because Wilderness areas are sources of aesthetic pleasure, serve important symbolic functions, are necessary in order to maintain ecosystem stability, and these areas offer opportunities for individuals to engage in personal growth through reflection.[103] Most preservationists want to keep Wilderness areas completely off-limits to mountain bikers.[104]

---

[98] U.S. Dep't of Agric. Forest Serv., *Forest Service Manual* § 2320.5(3) (1990); 43 CFR § 6301.5.

[99] Outdoor Industry Foundation, 2015 Mountain Biking Activity Report (Aug.25, 2015).

[100] For a full discussion on competing, conflicting demands for Wilderness, *see* Jan G. Laitos & Rachael B. Gamble, *The Problem with Wilderness*, 32 Harv. Envtl. L. Rev. 503, 504 (2008).

[101] Nathan L. Scheg, *Preservationists vs. Recreationists in our National Parks*, 5 HASTINGS W.-NW J. ENVTL. L. & POL'Y 47 (Fall 1998) ("Preservationists see the national parks as unique windows.... They claim we are able to see what our planet was like thousands of years ago, what it is like today, and what it is likely to become.").

[102] Jan G. Laitos & Rachel B. Reiss, *Recreation Wars for our Natural Resources*, 34 ENVTL. L. 1091, 1099 (2004) (recognizing dramatic change in natural resource use).

[103] *See* Scheg, *supra* note 101, at 51-52 (discussing reasons preservationists give for the need to protect "natural areas").

[104] Joseph L. Sax, MOUNTAINS WITHOUT HANDRAILS: REFLECTIONS ON THE NATIONAL PARKS 115 (1980) ("By preservationists, I mean those whose inclinations are to retain parklands largely (though not absolutely) as natural areas, without industrialization, commercialized recreation, or urban influences."); *id.* at 14 ("The preservationist is like

From another perspective, mountain bikers argue that the Wilderness areas should be open to whatever form of quiet, non-motorized recreation people prefer.[105] Biking advocates point to various scientific studies as support for the position that mountain biking is no more damaging to the environment and wildlife than hiking, and much less damaging than horseback riding.[106] To mountain bikers, one scientific truth is clear: all forms of outdoor recreation—including canoeing, backcountry biking, hiking and horseback riding—cause some degree of impact to the environment, so their low-level recreational impact is not a viable reason to exclude the activity.[107] Mountain bikers rightly insist that their human-powered bicycles must not be confused with motorized dirt bikes or other high-impact off-road motorcycles.

Moving past the two sides of the public argument, agency interpretation has not consistently taken a position rejecting bicycles. In 1966, the Forest Service wrote formal regulations to implement the Wilderness Act, and defined "mechanical transport" to mean a cart, sled, or other wheeled vehicle that is "powered by a non-living power source."[108] This initial agency interpretation reflects agency focus on the impact of the power, noise, and emissions of motor vehicles; under this regulation, bicycles are not excluded from Wilderness. The Forest Service later reversed course by issuing a declaration banning bicycles in 1977,[109] providing in relevant part: "[t]he following are prohibited in a National Forest Wilderness: . . . (b) [p]ossessing or using a hang glider or bicycle."[110]

Another regulation, still in effect for other purposes, guided permissible bicycle operation in Wilderness from 1981 to 1984, providing that individual National Forest officers could use discretion to permit or deny bicycle use on a case by case basis. "When provided by an order, the fol-

---

the patriot who objects when someone tramples on the American flag. It is not the physical act that offends, but the symbolic act.").

[105] *See* Scheg, *supra* note 101, at 47 ("Recreationists ... see the national parks as areas that should be open for everyone to use as they see fit…. [and that] the forms of recreation in which people choose to engage are irrelevant.").

[106] *See* Gary Sprung, *Natural Resource Impacts of Mountain Biking, International Mountain Biking Association*, https://www.imba.com/resources/research/trail-science/environmental-impacts-mountain-biking-science-review-and-best-practices (discussing various scientific studies finding that mountain bikes do not cause more impact on natural resources than other trail users).

[107] A. W. Bjorkman, *Off-road Bicycle and Hiking Trail User Interactions: A Report to the Wisconsin Natural Resources Board*, Wisconsin, Wisconsin Natural Resources Bureau of Research (1996).

[108] 36 CFR § 293.6(a).

[109] 36 C.F.R. §261.16; *see* Prohibitions, 42 Fed. Reg. 2956, 2959 (Jan. 14, 1977).

[110] *Id.*

lowing are prohibited: . . . (h) [p]ossessing or using a bicycle, wagon, cart, or other vehicle."[111] The Forest Service flipped one last time in 1984, after various groups, including the Sierra Club and Wilderness Society, successfully convinced the agency to remove the reference to bicycles in the discretionary 1981 regulation.[112] The practical effect of this change was to conclusively eliminate bicycling in National Forest Wilderness.

With respect to the other management agencies, a National Park Service,[113] regulation prohibits "[p]ossessing a bicycle in a Wilderness area established by Federal statute."[114] Likewise, the Bureau of Land Management explicitly defines "mechanical transport" as "any vehicle, device, or contrivance for moving people or material in or over land, water, snow, or air that has moving parts. This includes . . . bicycles . . . ."[115]

Though the management agencies lack unified regulations defining the activities that may take place within Wilderness, each individual agency regulation contains the same blanket prohibition of mountain bikes.[116]

As a result, mountain biker coalitions consistently express concern that each new proposal to enlarge the nation's Wilderness inventory means loss of trails they have historically ridden. This resistance has made it more difficult for Congress to pass legislation creating new Wilderness Areas.[117] This tug-of-war has reached an impasse and it is time for mountain bike supporters to take more proactive steps than battling Wilderness designations.

---

[111] 36 C.F.R. §261.57(h); *see* Prohibitions and Rewards and Impoundments, 46 Fed. Reg. 33518, 33521 (June 30, 1981).

[112] *See* Special Uses; Prohibitions, 49 Fed. Reg. 25447, 25448, 25450 (June 21, 1984) (to be codified at 36 C.F.R. pts. 251, 261).

[113] The first three agencies clearly prohibit bicycle use in Wilderness, but by contrast, the U.S. Fish & Wildlife Service does not have any regulation that governs bicycle use generally. 50 C.F.R. §35.5 (prohibiting use of 'mechanized transport' in Wilderness areas administered by the U.S. Fish & Wildlife Service).

[114] 36 C.F.R. §4.30(d)(1).

[115] Id. §6301.5.

[116] Appel, *supa* note 24, at 87–88.

[117] Theodore J. Stroll, *Congress's Intent in Banning Mechanical Transport in the Wilderness Act of 1964*, 12 Penn St. Envtl. L. Rev. 459, 460 (2004).

V. THREE TRAILS: OPTIONS TO RESOLVE THE WILDERNESS MOUNTAIN BIKE CONTROVERSY

To ensure the right to mountain bike, supporters have three options: (1) work to establish companion designations adjacent to Wilderness areas; (2) argue in court that Congress intended to allow bicycles through the plain language of the Wilderness Act; or (3) lobby Congress to amend the Act.

1. Companion Designations

The International Mountain Bicycling Association ("IMBA"), the leading mountain biking advocacy group, has focused its efforts on pushing for boundary changes or alternative designations that still allow bikes. IMBA is recognized as the foremost group fighting for better mountain biker access,[118] and its approach can be summed up in two words: strategic compromise. To limit restrictions on mountain biking as a result of a Wilderness designation, IMBA works with environmental groups, management agencies, and legislatures to create "companion designations." These congressional designations, such as National Conservation Areas, National Recreation Areas, National Protection Areas, and National Monuments offer similar safeguards to Wilderness designation but without the bike ban.[119] As examples, the Lewis and Clark Mount Hood Wilderness Act in Oregon protects traditional bicycling trails under a strong National Recreation Area designation[120] and the Rocky Mountain National Park Wilderness Act in Colorado employs a boundary adjustment to allow the completion of a 16-mile trail along the Park's western boundary where bikers and hikers share the trial.[121]

To be sure, even companion designations are hard fought when preservationists believe that the designation lacks rules sufficient to protect preservation values. IMBA is lobbying Congress to amend the Act and working with agencies to write better, more robust regulations so

---

[118] Jamie Hale, *Do Mountain Bikes Belong in the wild? Battle brewing over bike access to federal land*, The Oregonian (Apr. 7, 2016) http://www.oregonlive.com/travel/index.ssf/2016/04/do_mountain_bikes_belong_in_th.html.

[119] For example in 2009 IMBA partnered with Oregon Wild on a bill to designate 34,000 acres of National Recreation Area within a new 127,000-acre Wilderness. John Bradley, *Mountain Bikes Should Be Allowed in Wilderness Areas* (Feb. 16, 2010) http://www.outsideonline.com/1848481/spurning-rubber.

[120] Lewis and Clark Mount Hood Wilderness Act, S. Rep. No. 110-172 (2007).

[121] Rocky Mountain National Park Wilderness Act part ot the Omnibus Public Land Management Act, H. Rep. No 146 (2009).

that mountain bike friendly companion designations will protect wilderness qualities on federal lands while concurrently promoting outdoor recreation that includes mountain biking.

2. Statutory Interpretation

Review of the statutory text raises two interdependant questions: (1) what is the best interpretation of the act given its structure, language, and history, and (2) even if the best interpretation would allow bicycles, would courts find that under the statute, agencies must unambiguously allow bicycles or will courts defer to agency interpretation.

Preservationists argue that bicycles are forms of "mechanical transport" unambiguously banned by the terms of the Wilderness Act itself. Under the rules of statutory construction, courts must give each term used by Congress a distinct meaning, since Congress would not have spelled out each term separately if it did not intend the terms to have somewhat different meanings.[122] Preservationists look to the treatment of aircraft and motorboats to find the intended meaning. Those forms of transportation are enumerated as banned devices.[123] Aircraft and motorboats fit within the general term "motor vehicles," yet Congress saw fit to specifically list aircraft and motorboats. According to preservationists, it follows, then, the term "mechanical transport" logically includes uses that are not motor-powered because Congress treated motor vehicles and motorized equipment separately.

The text of the Act itself implies that Congress's concern was the prohibition of heavy, bulky, or scarring equipment—it intended to keep Wilderness areas "in their natural condition."[124]

At least one court, the Ninth Circuit Court of Appeals, has noted potentially conflicting directives embedded in the Wilderness Act.[125] On one hand, Congress directed the land management agencies to *preserve*[126] Wilderness character, but on the other it required that Wilderness areas be *used*,[127]—"devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use."[128] The court concluded,

---

[122] *See, e.g.*, *TRW Inc. v. Andrews*, 534 U.S. 19, 31 (2001) (explaining "reluctance to treat statutory terms as surplusage").

[123] 16 U.S.C. § 1133(c).

[124] 16 U.S.C. §1131(a) (italics added).

[125] *Wilderness Watch, Inc. v. U.S. Fish & Wildlife Serv.*, 629 F.3d 1024, 1033–34 (9th Cir.2010).

[126] 16 U.S.C. §1133(b) (2006) (emphasis added).

[127] *Id*. at §1131(c) (emphasis added).

[128] *Id*. at §1133(b).

> We cannot discern an unambiguous instruction to the Service. Rather, those competing instructions call for the application of judgment and discretion. We may be able to identify violations at the margins but, in this case, the Act is not so clear that we can identify precisely what the Service must do and must not do. We conclude that the purpose of the Wilderness Act with regard to conservation is ambiguous.[129]

Despite this noted ambiguity between the dual "preservation" and "use" language in the Act, management agencies have decided that long-term conservation of Wilderness does not include mountain biking.

Legislative history informs the mechanical transport issue and rseveals that Congress "meant to prohibit mechanical transport, even if not motorized, that (1) required the installation of infrastructure like roads, rail tracks, or docks, or (2) was large enough to have a significant physical or visual impact on the Wilderness landscape."[130] Statements that the Act sought to stop modern infrastructe—including roads, mines, recreational facilities, and commercial establishments that would permanently deprive a unique area of its primitive character—fill both the House and Senate reports.[131] In response to a question on what a primitive and unconfined type of recreation might be,[132] the chairperson of the House Committee on Interior and Insular Affairs, Representative Wayne N. Aspinall, responded, "it just simply means that there will not be any manmade structures about in order to embarrass and handicap the enjoyers of this particular area."[133] By passing the Act, Congress wanted to "slow down the relentless process of development."[134]

Other key House and Senate backers of the Act thought that Wilderness was meant to develop physical fitness and adventurous habits of mind and they quoted President-elect John F. Kennedy regarding the virtues of the "traditional bike to school that helped to build young bodies"[135] and concluded that Wilderness areas give us a chance to "develop

---

[129] *Wilderness Watch*, 629 F.3d at 1033 (quoting High Sierra Hikers Ass'n v. Blackwell, 390 F.3d 630, 647-48 (9th Cir. 2004).

[130] Stroll, *supra* note 117at 477 (2004); Tim Lydon, *Biking in Wilderness? It Aint Gonna Happen*, High Country News (Mar. 21, 2016).

[131] 110 Cong. Rec. 17427, 17430, 17434, 17435, 17437-39, 17442, 17444, 17446-48, 17453, 17454-56 (1964).

[132] 110 Cong. Rec. 17443 (1964).

[133] *Id.*

[134] Id. at 17439 (statement of Rep. Cohelan).

[135] Wilderness Preservation System: Hearings Before the Subcomm. on Public Lands of the Comm. on Interior and Insular Affairs, House of Representatives, 87th Cong., 2d Sess. (1962) 1050, 1097 (statement of Sen. Anderson, one of two Senate sponsors of the

physical fitness and adventurous habits of mind, as well as find relief for jaded minds, tense nerves, and soft muscles."[136] Based on this discussion, it seems unlikely that the forefathers of the Act would have thought mountain biking unsuitable for Wilderness.

Further review of legislative debate reveals that the House wanted to preclude mechanical transport, whether or not motorized, that would require an artificial infrastructure and permanent alteration of the physical environment. Following subcommittee and committee hearings in June 1964, the House of Representatives reduced "nor any other mechanical transport or delivery of persons or supplies" to "no other form of mechanical transport," the language now found in Section § 1133(c) of the Act. The legislative record establishes that this amendment did not widen the prohibition. Congress amended the clause "solely for the purpose of clarification. The substance and intent of the original language and of the substitute language are the same."[137] The phrase "mechanical transport or delivery of persons or supplies" suggests the carrying of groups of human beings as passengers, or the conveyance of supplies as cargo, on a road in a mechanical conveyance like a wagon. Congress intended to prohibit the mass transport of passengers—not exploring Wilderness under one's own power. Non-motorized mechanical transport used to carry people or material, requiring an artificial built-up infrastructure and causing damaging alteration of the physical environment is prohibited, but exploring Wilderness by mechanically aided human-powered transport is not.

The Senate passed a substantively identical version of the Act. Like the House, the Senate wanted to preclude mechanical load-bearing conveyances and other mechanical transport that would require an artificial infrastructure or alteration of the physical environment.[138]

Whether or not "mechanical transport" encompasses bicycles is a continuing debate. However, arguing interpretation is an uphill battle. Even if the term "mechanical transport" in the Wilderness Act does not

---

Act, sought to be placed in the record by Rep. Saylor, House author of the Wilderness Act).

[136] *Id.*

[137] Statement of Representative Baring, on June 18, 1964, in the unpublished hearing To Establish a National Wilderness Preservation System etc., House of Representatives, 88th Cong., 2d Sess. (1964) 121, 131. The committee was considering amendments to the House version of the Wilderness Act, H.R. 9070, recommended on June 3, 1964, in a committee print. See Subcomm. Amendments to H.R. 9070, 88th Cong., 2d Sess. (Comm. Print No. 23) (1964) 14, lines 9-25, 15, lines 1-6.

[138] 109 Cong. Rec. 5945 (1963).

include bicycles as a matter of law, the management agencies have the discretion to ban them, as they explicitly have.[139]

3. Congressional Action

Congress has entrusted the management of Wilderness areas to administrative agencies. These agencies are required to protect and manage[140] the areas "in such manner as will leave them unimpaired for future use and enjoyment as Wilderness, and so as to provide for the protection of these areas, the preservation of their Wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as Wilderness."[141] In managing these areas, the agencies must exercise their discretion to determine the best policy directives for the long-term preservation of Wilderness in light of the legislatively prohibited and permitted activities. That mandate requires them to construe the terms of the Wilderness Act to ensure that their actions comport with its directives.

A national mountain biking group called Sustainable Trails Coalition has drafted a bill—the Human-Powered Wildlands Travel Management Act of 2015[142]—that would give local land managers, such as U.S. Forest Service supervisors, the ability to decide whether riders can use sections of trail in designated Wilderness, either for recreational biking or for trail maintenance or other work employing wheeled tools. The draft legislation does not seek universal acceptance for bikes; rather, it would allow management agencies to work with local constituents and consider portions of Wilderness where biking would be appropriate, such as historically used bike trails. Although arguments to amend the Wilderness Act have been unsuccessful in the past,[143] the Human-Powered Wildlands Travel Management Act could bestow clarity on managing agencies and recreation groups seeking better direction in Wilderness areas.[144]

As the bill awaits Congressional action, 116 conservation organizations from across the United States published a letter asking lawmakers

---

[139] *See* Stroll, *supra* note 117 at 481–82.

[140] *See* 16 U.S.C. § 1131(c) (providing that wilderness "is protected and managed so as to preserve its natural conditions").

[141] *Id.* § 1131(a).

[142] Sustainable Trails Coalition, FAQ, http://www.sustainabletrailscoalition.org/faq/.

[143] A sign of unsuccessful proposals is the fact that the Act itself never has been significantly amended so its basic structure remains the same. *See* 16 USC § 1131 *et seq.*

[144] As an example of those seeking better direction, in 2015 a group of snowmobile organizations sued the Forest Service claiming it lacks clear rules or guidelines for defining potential wilderness areas, especially in an area that has historically allowed snowmobiling and mountain biking. *See Ten Lakes Snowmobile Club et. al v. the U.S. Forest Service, et. al*, 15-cv-00148 (filed Nov. 12, 2015).

to reject any proposed changes allowing mountain bikes in Wilderness.[145] Perhaps more revealing of the political difficulty of amending the Wilderness Act is the fact that not all mountain bikers agree— IMBA has also publically opposed the bill.[146]

VI. CONCLUSION

Time changes everything. Fifty years after the enactment of the Wilderness Act, a new generation of users, the mountain bikers, passionately seek to participate in the Wilderness experience. Recreation and conservation are the fastest growing uses of federal lands and, arguably, these two uses are now surpassing extractive industries to become the dominant uses of public lands.[147] Importantly, recreation users are also one of the most economic producing uses of public lands.[148] Public interest lies in combining these ideals: protecting an environment worth experiencing.

Of the three options discussed, the most effective route to incorporate active agency management allowing mountain bikers in Wilderness while simultaneously protecting the Act's values is to support the Human-Powered Wildlands Travel Management Act. A clarifying amendment to the Wilderness Act is the ideal option for two reasons: (1) it will fall in line with the original low impact recreational use intent of Congress evidenced by the text of the Act and legislative history and (2) it will reverse the falling support that new wilderness area designations currently suffer as a result of mountain bikers opposition to designations that would prevent them from riding. Congress can strengthen the Act while simultaneously compromising to limit mountain bikes by defining the meaning of mechanical transport and the authority of the land management agencies to interpret the Act to allow for flexible management

---

[145] Brett Haverstick, *116 Conservation Groups Tell Congress: Keep Bikes Out of Wilderness*, The Wildlife News (Mar. 23, 2016) http://www.thewildlifenews.com/2016/03/23/116-conservation-groups-tell-congress-keep-bikes-out-of-wilderness/.

[146] IMBA sees the bill as a bad idea and is concerned that an amendment invites risk that others will seek to change the Wilderness Act into something they want to suit their needs. *See* Vernon Felton, *Are Mountain Bikers About to Get Their Day in the Wilderness?*, Nov. 30, 2015, http://www.outsideonline.com/2038461/mountain-bikers-could-get-their-day-wilderness.

[147] Jan G. Laitos, *The Transformation on Public Lands*, 26 Ecology L.Q. 140, 160 (1999) (discussing the rise in support for public lands and reduced commodity development on or near these lands).

[148] Dr. Daniel J. Stynes, *Economic Significance of Recreational Uses of National Parks and Other Public Lands*, NPS Social Science Review, Vol. 5, No. 1 (2005), https://www.nature.nps.gov/socialscience/docs/archive/SSRR_7.pdf.

of mountain bike users in specifically designated Wilderness areas. The agencies managing Wilderness must understand the proposed amendment to the Act as change to allow representation of diverse non-motorized quiet user interests and foster increased public support for Wilderness protection. As it stands, the future of the Wilderness Act is uncertain.[149]

With current rates of population growth, metropolitan development, and the rising popularity of mountain biking, it is difficult to imagine a future where individuals will continue to support Wilderness designations if they are limited from experiencing those lands on a mountain bike. [150] Moreover, Wilderness areas are only worth protecting if the American public says they are.[151] But if preservationists continue to resist mountain bikers' efforts to gain access, they risk a public perception shift against Wilderness designations altogether. And for a Congress plagued by polarization and stalemate, any proposed Wilderness bill must be supported by a broad base of interests with strong local support.[152]

At this time in history, when technology and devices increasingly consume human existence,[153] land management agencies are concerned about new generations getting outdoors.[154] These agencies are working to build continuing support for federal lands and it simply does not make sense to keep mountain bikes off all the uniquely beautiful Wilderness lands; restrictions should be site-specific decisions. Perhaps surprisingly, even wilderness icon Aldo Leopold recognized the practical limitations of designating stagnant Wilderness. In1925 he wrote,

---

[149] Martin Nie & Christopher Barns, *The Fiftieth Anniversary of the Wilderness Act: The Next Chapter in Wilderness Designation, Politics, and Management*, 5 Ariz. J. Envtl. L. & Pol'y 237 (2014).

[150] Douglas O. Linder, *New Direction for Preservation Law: Creating an Environment Worth Experiencing*, 20 Envtl. L. 49, 68 (1990) ("The argument that natural areas ought to be preserved because of their experiential potential goes far beyond aesthetics and environmentalism.").

[151] Thomas A. More, et al., How Valid are Future Generations' Arguments for Preserving Wilderness?, USDA Forest Service Proceedings RMRS-P-15-VOL-2. 2000, pp. 81–85, http://www.fs.fed.us/rm/pubs/rmrs_p015_2/rmrs_p015_2_081_088.pdf.

[152] For discussion on compromise and collaboration, *see* Martin Nie & Christopher Barns, *supra* note 149 at 278–90 (2014).

[153] *See, e.g.*, Aaron Smith, *The Best (and Worst) of Mobile Connectivity*, Pew Research Center (Nov. 30, 2012), http://www.pewinternet.org/2012/11/30/part-iv-cell-phone-attachment-and-etiquette/.

[154] For example, Every Kid in the Park, https://www.everykidinapark.gov; Youth Initiative, https://www.doi.gov/youth/about; Lets Go Outside, https://www.fws.gov/letsgooutside/; More Kids in the Woods, http://www.fs.usda.gov/detail/conservationeducation/home/?cid=STELPRDB5340044; Lets Move Outside, http://www.letsmove.gov/lets-move-outside.

> Wilderness is a relative condition. As a form of land use it cannot be a rigid entity of unchanging content, exclusive of all other forms. On the contrary, it must be a flexible thing, accommodating itself to other forms and blending with them in that highly localized give-and-take scheme of land-planning which employs the criterion of "highest use."[155]

It is in the best interest of both preservation advocates and mountain bikers who value Wilderness to settle the question of human-powered mountain bicycle transport cooperatively. Mountain bike coalitions will bring additional support and resources to trail maintenance to prevent negative impacts to Wilderness including erosion and degradation of existing trails. More importantly, this currently alienated group will instantly transform into supporters rather than fighters of Wilderness designation. Managing federal lands in a way that balances recreational use with the purpose of Wilderness designations is within reach. Congress should carefully consider this opportunity to strengthen the Wilderness Act by once and for all clarifying management agencies' ability to allow mountain bikers on the trails on a case-by-case basis.

In the words of Howard Zahniser, the primary author of the Wilderness Act, "[w]e have a profound, a fundamental need for areas of [W]ilderness—a need that is not only recreational but spiritual, educational, scientific, essential to a true understanding of ourselves, our culture, our own natures, and our place in all Nature."[156] Now, more than ever, humans need Wilderness. It is time to support access to Wilderness on mountain bikes, too.

---

[155] Aldo Leopold, Wilderness As a Form of Land Use, 1 J. Land & Pub. Util. Econ. 398, 399 (1925).

[156] Howard Zahniser "Wildlands, A Part of Man's Environment," in *A Place to Live, The Yearbook of Agriculture, 1963* (Washington, DC: United States Department of Agriculture, 1963).

Wringing Wonder from the Arid Landscape of Law

Robert L. Fischman*

* Richard S. Melvin Professor of Law, Indiana University Maurer School of Law. Many thanks to Sandi Zellmer for her suggestions. The author is grateful for the research support of the Indiana University Maurer School of Law. Please direct comments and questions to rfischma@indiana.edu.

ABSTRACT

Charles Wilkinson's estimable contribution to public land law scholarship is widely cited but only partly understood. From the mid-1970s to the mid-1980s he upended the field by elevating the diffuse public interest, displacing creation and adjudication of private property interests as the field's focus. However, his subsequent scholarship grappled with an even more important challenge that has been far less noted. Beginning in the late 1980s, Wilkinson explored how legal institutions should determine the pluralistic, public interest. In trailblazing articles and books, he rose to the challenge with site-specific details, compelling narratives, and aspirational themes. This work undermined the dominance of exogenous preference accounting as a means of identifying the public interest. Instead, often employing methods from the humanities, Wilkinson promoted planning as a deliberative, value-shaping process for crafting resource management objectives. His scholarship of the past thirty years redefined the relevant inquiries for public land law scholarship. In particular, he established bioregionalism, time, culture, and wonder as place-building concepts essential for translating justice and equity into public natural resources decisions.

Table of Contents

I. INTRODUCTION

It is easy to celebrate the multi-faceted work of Charles Wilkinson. His public service has given voice to many lives and communities. His teaching has transformed ambitions, including my own.[1] His wide-ranging writing has inspired uncounted thousands. Canvassing Professor Wilkinson's full influence would require an article that would swallow any single issue of this law journal. Therefore, I limit my own tribute to the aspect of his many works I know the best: Wilkinson's profound contribution to public land law scholarship.

Wilkinson made his mark originally with conventional, but thoroughly documented and insightful, scholarship. In particular, his duet of articles on applying a public trust to federal resource management laid a modest but reasonable foundation for creative use of fiduciary concepts in federal law.[2] Also, the magisterial, double-issue article with Michael Anderson on the National Forest Management Act (NFMA)[3] continues to be the standard, authoritative source on U.S. Forest Service organic legislation and implementation.[4] Along with the first two editions of the Federal Public Land and Resources Law casebook with George Coggins,[5] these articles remade the field and established Wilkinson as the leading innovator in public land law.

Before this phase of Wilkinson's work, natural resources law emphasized the creation and adjudication of private rights.[6] Afterward, no serious scholar of public land law could ignore the diffuse public interest as a major influence. Indeed, the focus of the past 35 years of public land law research across the academy generally centers on the best way to determine and incorporate the public interest, particularly in resource con-

---

[1] At the University of Michigan School of Law, I took Indian Law and Public Land Law from Professor Wilkinson in the Spring 1986 semester.

[2] Charles F. Wilkinson, The Public Trust Doctrine in Public Land Law, 14 U. CALIFORNIA-DAVIS LAW REV. 269 (1980); Charles F. Wilkinson, The Headwaters of the Public Trust: Some Thoughts on the Sources and Scope of the Traditional Doctrine, 19 ENVTL. L. 425 (1989). Bob Adamcik and I have described the limitations of the trust concept in federal law in *Beyond Trust Species: The Conservation Potential of the National Wildlife Refuge System in the Wake of Climate Change*, 51 NATURAL RESOURCES J. 1 (2011).

[3] Pub. L. No. 94-588, 90 Stat. 2949 (1976).

[4] Charles F. Wilkinson and H. Michael Anderson, Land and Resource Planning in the National Forests, 64 OREGON L. REV. 1 (1985). A single article occupying a double issue (number 1& 2) of a law journal may well be unprecedented. It remains the only law journal issue I have ever purchased in order to have a personal copy.

[5] George C. Coggins and Charles F. Wilkinson, Federal Public Land and Resources Law (1st ed. 1981 and 2d ed. 1987).

[6] Michael C. Blumm and David H. Becker, From Martz to the Twenty-First Century: A Half-Century of Natural Resources Law Casebooks and Pedagogy, 78 U. COLO. L. REV. 647, 649-650 (2007).

servation. Charles Wilkinson built the fulcrum and lifted scholarship into a different domain.[7]

For many, this spectacular first act would sustain a comfortable career continuing to publish traditional legal scholarship. However, this is where the story of Wilkinson's major impact on public land law gets interesting. Around the time he arrived at the University of Colorado, he had pivoted toward more challenging research and more literary writing. He already succeeded in reframing scholarship of federal resource management around the principle of pluralistic, public interest. But, how should agencies and elected officials gauge and determine what the public interest is in particular circumstances? Wilkinson launched a decades-long effort to answer that question with publications rich with site-specific detail, compelling narratives, and aspirational themes. This phase of Wilkinson's scholarship defied conventional notions of legal writing and inspired many reformers. My aim is to explore the unique contribution of this line of work to public land law, connect it to broader scholarly themes, and assess its impact.

II. BIOREGIONALISM & HOME

Regionalism links much of Wilkinson's adventurous scholarship of the past three decades.[8] To understand how this is important in shaping public land law, one must distinguish it from decentralization. Decentralization focuses on moving authority from agencies or governments with relatively broad geographic jurisdiction to ones covering a smaller area.[9] Decentralization generally spurs federal delegation of more power to states and local jurisdictions empowered by states.[10] Federalism serves as

---

[7] The best description of the transformation in the field remains Wilkinson's own, The Field of The Field of Public Land Law: Some Connecting Threads and Future Directions, 1 PUBLIC LAND LAW REV. 1 (1980) (using traditional, case-oriented scholarship to make the case for a new way to understand public land law). Wilkinson continued to refine his picture of the field through a remarkable series of scholarly dispatches as the Public Land Law Review (later called the Public Land and Resources Law Review) turned 5, 10, 21, and now 33 years old. I know of no comparable series of contributions to a journal by a professor not on the faculty of the school publishing the journal. The series speaks to Wilkinson's dominant role in public land law.

[8] Wilkinson, The Law of the American West: A Critical Bibliography of the Non-Legal Sources, 85 MICHIGAN LAW REV. 953, 955 (1987) (claiming that, just as the South's experience with slavery and segregation created a regional law, so too does the West's aridity and high concentration of federal lands).

[9] George Cameron Coggins, "Devolution" in Federal and Land Law: Abdication by Any Other Name…, 3 HASTINGS W.-N.W. J. ENVTL. L & POL'Y 211 (1996).

[10] Decentralization outside of the federalism context commonly refers to state laws that delegate power to local governments. Jerry Frug, Decentering Decentralization, 60

the most important legal category for implementing decentralization.[11] But that conversation is constrained by state and tribal sovereign boundaries.

In contrast, regionalism emerges from flexible boundaries defined more by culture.[12] This is especially true of the strain of regionalism most closely associated with Wilkinson's scholarship—bioregionalism. Bioregionalism emerges from a deep understanding of a particular place.[13] Wilkinson considers it a "subtle, intangible, but soul-deep tie" to place and community.[14] It seldom aligns with state or other jurisdictional boundaries. Wilkinson follows John Wesley Powell and Wallace Stegner in his call for the watershed to be an optimal boundary definer.[15] Bioregionalism places greater weight on the ideas of those who have dwelled there the longest. In this respect it is difficult to disentangle Wilkinson's work on Indian law with his impact on public land law. For it is the aboriginal Americans who can claim moral high ground based on the time they have dwelled in a region. Wilkinson's work in both areas of law recognizes the temporal dimension[16] of regionalism as crucial to defending the special status of the aspirations of the people who live in places where public resource disputes occur.

This is a delicate balance because, for federal lands, there is an enormous public (all United States citizens) to whom lawmakers must answer. Why not just consider national goals and step down quotas to individual land units? That describes a dominant approach to federal land management, promoted by post-war economists, such as the influential Marion Clawson,[17] and embodied in legislation such as the Resources

---

U. CHI. L. REV. 253 (1993); Richard C. Schragger, Decentralization and Development, 96 VA. L. REV. 1837 (2010).

[11] Robert L. Fischman, Cooperative Federalism and Natural Resources Law, 14 N.Y.U. ENVTL. L.J. 179 (2005).

[12] Often a dominant city will define a region (e.g. the Portland bi-state region).

[13] Kirkpatrick Sale, Dwellers in the Land 173 (1985) (bioregionalism "is taking the time to learn the possibilities of place"). Wilkinson refers to this as an "ethic of place." Charles F. Wilkinson, Law and the American West: The Search for an Ethic of Place, 59 U. COLO. L. REV. 401, 405 (1988) [hereinafter "An Ethic of Place"].

[14] An Ethic of Place at 406.

[15] *Id.* Powell called for state boundaries that match watersheds in his 1878 report "Lands of the Arid Region", which Wallace Stegner revived in Beyond the Hundredth Meridian: John Wesley Powell and the Second Opening of the West (1954). Wilkinson himself nods to these two extraordinary works in his own book title "Crossing the Next Meridian". The Powell report (2d ed.) can be found at the web site of the agency he directed from 1881-94: http://pubs.usgs.gov/unnumbered/70039240/report.pdf.

[16] *See* Charles F. Wilkinson, American Indians, Time, and the Law: Native Societies in A Modern Constitutional Democracy (1987).

[17] *See* Marion Clawson, The Concept of Multiple Use Forestry, 8 ENVTL. L. 281 (1978). Clawson also served as director of the Bureau of Land Management from 1948-1953, during which time he has been credited with laying a "foundation for future con-

Policy Act (RPA).[18] The RPA envisioned Forest Service resource management algorithmically, a set of logical rules that distribute system-wide objectives to ranger district decisions. Yet, Wilkinson has noted that local people have "knowledge, expertise, and a lot at stake" in federal land decision-making.[19] And, "federal agencies are fraught with inefficiencies and bad incentives."[20]

On the other hand, granting control over public lands to states or local communities would close off too many options for future generations and narrow the scope of benefits. Wilkinson adamantly opposes this kind of devolution as a loss of "far too much: too much openness, too much freedom, too much protection against the thunder heads that lie thick above our children's heads, and even darker ones that lie above our grandchildren's."[21]

Navigating between these positions, Wilkinson calls for a more nuanced bioregionalism responsive to a wide range of local and national values through deliberative democracy.[22] It is a kind of local home-building. In fact, this idea has a deep historical taproot. But for a quirk of fate, management decisions about most of the federal lands would actually be administered through a "Home" rather than "Interior" Department. In 1849 a lame-duck President Polk signed the law authorizing three cabinet departments to augment the existing set, State, Treasury, and War, that had been in place since the Washington Administration.[23] I remember Professor Wilkinson quizzing his public land law class in 1986 about which president presided over the largest increase in U.S. land area. As I

servation management" of the kind required by FLPMA in 1976. James R. Skillen, The Nation's Largest Landlord: The Bureau of Land Management in the American West 33 (2009).

[18] Pub. L. No. 93-378, 99 Stat. 476 (1974).

[19] The Public Lands and the National Heritage at 500.

[20] *Id.*

[21] *Id.* Nonetheless, advocating devolution of federal land management to states remains an electoral boon for politicians, such as Utah Senator Mike Lee. Fischman & Williamson, The Story of *Kleppe v. New Mexico*: The Sagebrush Rebellion as Un-Cooperative Federalism, 83 U. COLO. L. REV. 123 (2011).

[22] An Ethic of Place is Wilkinson's seminal contribution to the idea of bioregionalism in the law. Cass Sunstein promoted the rise of deliberative democracy theory in the legal literature with Interest Groups in American Public Law, 38 STANFORD L. REV. 29 (1985). The political science literature has developed both the theory and practice of deliberative democracy into a rich sub-field. See, e.g., John S. Dryzek, Deliberative Democracy and Beyond (2002); Deliberative Systems (Parkinson & Mansbridge eds. 2012.

[23] Henry Barrett Learned, The Establishment of the Secretaryship of the Interior, 16 AM. HISTORICAL REV. 751 (1911). Three days later, fresh from his inauguration, President Taylor nominated the first secretary. Henry Barrett Learned, The Establishment of the Secretaryship of the Interior, 16 AM. HISTORICAL REV. 751, 770 (1911).

recall, no student correctly identified the one-termer James Polk.[24] The new federal territories considerably intensified the need for coordinated administration of public land law, which had been divided among the existing three departments, each of which had little interest in the subject. Congress responded with that 1849 statute entitled "An Act to establish the Home Department."[25] Perhaps Wilkinson would urge us to revive that name.[26] For his conception of public land law is to view land, the places, as homes. Like all homes, the people who dwell in them can see things easily missed by the visitor, qualities animated by stories and experiences. For instance, Wilkinson understands Ash Meadows National Wildlife Refuge through the stories of Pauline Estevez,[27] and Camp Creek through the penetrating observations of Wayne Elmore.[28]

"Sense of place" is a term commonly used to describe the humanities-infused, literary style of writing that Wilkinson increasingly turned to in the past two decades as he labored to infuse the home concept into public land law. Wilkinson signaled this shift in scholarship as early as 1987 with his "critical bibliography" of literary and historical sources of the roots of "the law of the American West."[29] The sources described by Wilkinson are as important to understanding the old rules of open access as they are to the current armed stand-offs over grazing. In fact, Wilkinson claims that the "regular flashes of contentiousness" help distinguish the West as a distinct place.[30]

As a Michigan Law Review editor at the time, I remember puzzling over Wilkinson's bibliography manuscript, which proceeded like nothing else I'd read before in a law journal. In retrospect, I understand it was a declaration of relevance for a new set of sources to invigorate and interpret public land law. Wilkinson has built upon that foundation ever since. It was also a bold manifesto that there could be a "law of the American

---

[24] This little historical digression is part of my tribute to Wilkinson, who conveyed to me the importance (and delight) of history in understanding public land law.

[25] Ch. 108, 9 Stat. 395 (1849). The idea of a Home or Interior department dates to the era of the constitutional convention. Learned, *supra* not 23, at 752. The legislative debates in the 1840s over establishment of a new department framed the issue in terms of the relative roles of states and the federal government. *Id.* at 768 (quoting Senator Calhoun of Georgia, troubled by any expansion of centralized power, exclaiming "there is something ominous in the expression 'The Secretary of the Interior.'")

[26] Alas, the 2002 Homeland Security Act took the name in a different direction. Pub. L. No. 107–296, 116 Stat. 2135 (2002).

[27] Charles Wilkinson, Listening to All the Voices, Old and New: The Evolution and Land Ownership in the Modern West, 83 U. DENVER L. REV. 945 (2006).

[28] Charles F. Wilkinson, Crossing the Next Meridian at 294 (1992).

[29] Wilkinson, *supra* note 8.

[30] Wilkinson, *supra* note 13, at 401. (The South shares the distinction for violence, which bolsters Wilkinson's claim in the Law of the American West that the South is the only other region with such a distinctive character).

West." I am still not entirely persuaded that such a law exists.[31] But I remain convinced that understanding public land conflict and envisioning a collaborative way forward require a grasp of his diverse collection of non-legal sources. The article launched a new approach to resolving the perennially fierce disputes over federal land management through engagement with richly observed and deeply considered literature.[32] Along with the subsequent "Ethic of Place" article,[33] it established the tone for a new scholarship of public land law that insisted we take seriously the ineffable and unquantifiable values embedded in the public interest concept.

Though "sense of place" is the more common bioregional term, I think "home" better captures the heart of Wilkinson's work on place and people. For it is "home" where we take "the time to learn the possibilities of place."[34] Deeply understanding a place[35] through time is what Wilkinson argues we need to improve public land management. His bioregionalism insists that all facets of the community respect each other despite their heterogeneity.[36] This task of making a home in the landscape is a daunting project best described by Wendell Berry as "the forever unfinished lifework of our species."[37] Wilkinson noted in 2006 that he had "come to think of lawsuits over public lands as much in terms of place as law."[38] Kirkpatrick Sale, whom Wilkinson has cited as an influence,[39] emphasizes the importance of lore which gives meaning to a landscape.[40] This deep understanding of place distinguishes Wilkinson's view from the de-centralizers, who generally do not condition devolution of power on some assurance of understanding or demonstrated sustainability over time.

I have always thought that the BLM suffers from not having named units like the other public land agencies. Wilkinson's attention to the long-neglected environmental, recreational, and (yes) spiritual value of the BLM properties comes from his perception that they are places with

---

[31] Wilkinson's body of work also incorporates contradictory notions. *See* Charles F. Wilkinson, The Field of Public Land Law—A Ten-Year Retrospective, 10 PUBLIC LAND L. REV. 19, 20 (1989) ("the future of the West is a national, not a regional matter, for our nation has always lodged many of its best dreams in the West").

[32] It also provided students of public land law, myself included, with a hefty summer reading list.

[33] Wilkinson, *supra* note 13.

[34] Sale, *supra* note 13, at 173.

[35] Sale, *supra* note 13, at 42.

[36] Wilkinson, *supra* note 13, at 407.

[37] Wendell Berry, Home Economics 138 (1987).

[38] Wilkinson, *supra* note 27, at 945.

[39] Charles Wilkinson, The Eagle Bird: Mapping a New West at 140 (1999); An Ethic of Place at n.9.

[40] Sale, *supra* note 13, at 115.

their own legacy and stories.[41] While the named national monuments, national conservation areas, and areas of critical environmental concern have started to remedy this shortcoming, there are vast expanses of unnamed BLM areas. They are the lost places with fewer national advocates than the national parks, national forests, and national wildlife refuges. A place without a name is a home without an address. That places require specific names emerges from Wilkinson's appeals to attend to the "particularity" that animates the land.[42] It is this principle of bioregionalism that leads Wilkinson to applaud Judge Karlton's ridicule of the Forest Service roadless area study that reduced major features of an area to "highly generalized descriptions, such as 'mountain' or 'river.' One can hypothesize how the Grand Canyon might be rated: 'Canyon with river, little vegetation.'"[43]

It is not that "canyon with river, little vegetation" is inaccurate. Instead, Wilkinson's key point is that it misses what makes the canyon important: human culture and people's souls. Whether making the Grand Canyon a home or a civic monument of reflection and contemplation,[44] it is the people who bring meaning to the landscape when they make it home.[45]

Crossing the Next Meridian, Wilkinson's 1992 book, popularized the apt "lords of yesterday"[46] moniker for the old laws that still influence resource management.[47] It is probably Wilkinson's most widely adopted idea. My students tell me they remember the phrase above all others long after they take my public land law class. The book is also significant for organizing its discussion of public land law around place-based case studies. But they are case studies centered on *people* as the focus of concern.[48] Yes, the places are grand, but they are important for inspiring the people who live and work there. The central focus on people who make a place home distinguishes Wilkinson's work from de-centralizers and

---

[41] Charles Wilkinson, Fire on the Plateau: Conflict and Endurance in the American Southwest (1999).

[42] Wilkinson, *supra* note 27, at 950 & 960 (citing as an example of "particularity" Edward Abbey's "vivid descriptions of desert plants, animals, minerals, air, and land formations.")

[43] Wilkinson, *supra* note 31, at 20 (quoting *California v. Bergland*, 483 F. Supp. 465 n.22 (E.D. Cal. 1982)).

[44] Joseph L. Sax, Mountains Without Handrails (1984).

[45] Wendell Berry, Home Economics 138 (1987).

[46] His scholarship began focusing on the beautiful expression "lords of yesterday" in 1988 with An Ethic of Place at 404. I recall the term from his teaching in 1986.

[47] Wilkinson, *supra* note 28.

[48] There are flashes of an even broader conception of community in Wilkinson's work, along the lines of including "animals as part of the community within which we live. Even if we stop short of recognizing rights in these animals, we should nevertheless accord them independent respect."

wilderness warriors who focus on efficiency or pure adventure rather than people.[49]

While Wilkinson ultimately endorses planning as the path to sustainability,[50] he is careful—in his lawyerly manner—to distinguish his proposal from technocratic forms of planning (such as the timber harvest "FORPLAN" of the 1970s and '80s)[51] less oriented toward public participation.

> When I say planning, I mean it in the broadest sense: the process of a community coming together; identifying problems; setting goals—a vision—for a time period such as twenty or forty years; adopting a program to fulfill those goals; and modifying the program as conditions change. [Sensible yet visionary planning] … can open our minds to the possibilities for our communities—our neighborhoods, schools, businesses, environment, and culture—so that we can build flexible arrangements ….[52]

In other words, places arise from people creating homes out of the landscape.

Wilkinson knows that people need to earn a living, but distinguishes cut-and-run operations as "for business, not living."[53] Planning and decentralization are good only to the extent they facilitate home-making. Make no mistake, the process is vague and messy.[54] That makes it indelibly human: in Wilkinsonian bioregionalism, people figure as important as the physical landscape.[55] Wilkinson attempts to thread the needle by declaring that the "ethic of place attempts to pull out the best in us but it does not purport to be all things to all people."[56] Wilkinson believes that consensus rather than winner-take-all litigation is the preferred approach to bioregional planning.[57] Above all, he envisions planning as a creative, endogenous exercise that both reflects and reconstitutes the community.

---

[49] Wilkinson, *supra* note 13, at 405.

[50] Wilkinson, *supra* note 28, at 300.

[51] Randal O'Toole, Reforming the Forest Service 54-55 (1988).

[52] Wilkinson, *supra* note 28, at 300.

[53] Wilkinson, *supra* note 27, at 949.

[54] An Ethic of Place at 409 ("dissenting parties often leave angry, determined to undercut the temporary solution bred of combativeness.") Environmental historian William Cronon makes the point that "home" is where we make a living. William Cronon, The Trouble with Wilderness; or, Getting Back to the Wrong Nature, *in* Uncommon Ground: Rethinking the Human Place in Nature 69, 89 (William Cronon ed. 1996).

[55] Wilkinson, *supra* note 13, at 405.

[56] *Id*. at 405.

[57] *Id.* at 409. However, contradictions remain in Wilkinson's views. His exhortation that "federal action should be the product of agreements that come from the ground up" may not be consistent with establishment of the Grand Staircase Escalante National Monument. An Ethic of Place at 410.

If this all sounds vague and in-the-clouds, then Wilkinson's application of planning for sustainability in the national forests highlights the practical legal consequences of embracing the humanities view of public land management.[58] Wilkinson is clear that restrictions on judicial review of plans significantly dampen incentives for public participation.[59] Despite the twin blows to accessing judicial review in *Ohio Forestry Association*[60] and *Southern Utah Wilderness Alliance*,[61] he continued to advocate reforming national forest planning. His service on the Committee of Scientists is reflected in the report embracing "intangible qualities, such as beauty, inspiration, and wonder" as among the benefits of national forests.[62] And, he insisted upon their inclusion in the national forest planning standards for judging sustainability, which now include social factors.[63] This is a significant change for an agency that frequently viewed sustainability as steady yield of outputs. Wilkinson defended the vagueness of these intangibles by insisting that, like "free speech," the broad formulation can guide conduct through symbolism.[64] The vague notions gain specific meaning through repeated application to particular places:

> Read the Northwest Forest Plan and talk to the many people who are affected by it. They may or may not like the Plan, but I doubt that they will say that sustainability or ecosystem management are vague and abstract in the context [of the place.][65]

Spoken like a true American law professor, harkening to case-law reasoning, which starts from the particular and builds toward the general in order to give meaning to concepts.[66] Wilkinson's scholarship models how the legal method can contribute solutions to wrenching public land management disputes.

---

[58] Wilkinson, *supra* note 13, at 405 ("this ethic of place calls for reasonably concrete approaches to specific problems and it has a hard edge").

[59] The National Forest Management Act: The Twenty Years Behind, the Twenty Years Ahead, 68 U. COLO. L. REV. 659, 675 (1997).

[60] *Ohio Forestry Association v. Sierra Club*, 523 U.S. 726 (1988).

[61] *Norton v. Southern Utah Wilderness Alliance*, 542 U.S. 55 (2004).

[62] A Case Study at 312; Charles F. Wilkinson, Land Use, Science, and Spirituality: The Search for a True and Lasting relationship with the Land, 21 PUBLIC LAND & RESOURCES L. REV. 1, 11 (2000) (both citing The Committee of Scientists, Department of Agriculture, Sustaining the People's Lands: Recommendations for Stewardship of the National Forests and Grasslands Into the Next Century (1999)).

[63] 36 C.F.R. § 219.8(b).

[64] The National Forest Management Act: The Twenty Years Behind, the Twenty Years Ahead, 68 U. COLO. L. REV. 659, 679 (1997).

[65] *Id*.

[66] Edward H. Levi, An Introduction to Legal Reasoning 27 (rev. ed. 2013, 1949).

III. TIME & CULTURE

Indian law also clearly influenced Wilkinson's emphasis on the cultural dimension of resources law. As I have pointed out elsewhere, one of the distinguishing features of the Coggins & Wilkinson[67] reformation of public land law is the inclusion of "resources" generally, not limited to *natural* resources.[68] Wilkinson regards the term "cultural resources" as lacking passion and depth.[69] I suspect his judgment grows mostly from the "resource-ist," utilitarian approach suggested by the term.[70] Wilkinson criticizes the land-management agencies for failing to grasp the importance of ancient places and cultural landmarks as co-equals with the more traditional values, such as energy development.[71] He advocates a strong commitment to the historic and cultural markers of the past because he sees how they can instruct us today in sustainable use. They help build home from mere place. This temporal dimension resonates with the modern literary trends of western literature.

For instance, Ivan Doig, an author whom Wilkinson commends to scholars,[72] grapples deeply with the role of time in establishing place. In Winter Brothers,[73] Doig considers his connection to a nineteenth century diarist and lawyer, James Swan. Like the bioregionalists Wilkinson approvingly describes, Doig declares that he lives in a community of time as well as of people.[74] Doig is attracted to the West "not because it is the newest region of the country but because it is the oldest, in the sense that the landscape here—the fundament, nature's shape of things—more resembles the original continent."[75] Wilkinson's writings reflect this same connection to the past through landscape and people's stories. It is evident in his enchantment with the Colorado Plateau and the petroglyphs left behind by ancient peoples.[76] Wilkinson's bona fides as a serious scholar and lawyer offer permission and encouragement for the rest of us to consider the significance of our sense of wonder as we gaze over

---

[67] Federal Public Land and Resources Law (1st ed. 1981).

[68] Robert L. Fischman, What is Natural Resources Law?, 78 U. COLO. L. REV. 717, 737 (2007).

[69] Charles Wilkinson, Land of Fire, Land of Conquest: The Colorado Plateau and Some Questions for Its Future, 13 J. OF ENERGY, NAT. RES. & ENVTL. L. 337, 367 (1993) (calling it a "pale term").

[70] Fischman, *supra* note 68, at 78.

[71] Wilkinson, *supra* note 69, at 13.

[72] Wilkinson, *supra* note 8, at 984.

[73] Ivan Doig, Winter Brothers (1980). Another one of my mentors at the University of Michigan Law School, Mark Van Putten, introduced me to this book.

[74] *Id*. at 4.

[75] *Id*. at 120.

[76] *See* Wilkinson, Land of Fire, Land of Conquest: The Colorado Plateau and Some Questions for Its Future, 13 J. OF ENERGY, NAT. RES. & ENVTL. L. 337, 343 (1993).

Monument Valley.[77] The challenge is how to fit it into a relevant category of law. Doig thinks that connections to older times help deepen our roots in a place and understand our heritage. Wilkinson grapples with the ways that "law alters ownerships by responding to … voices."[78] His ear for those voices and the stories they animate launched a new way to conceive of reforming public land management.

"[W]hen land is at issue, culture can be every bit as real as any timber sale, open-pit mine, or ski area."[79] To his everlasting credit Wilkinson—the Native American advocate—listens also to newer voices in shaping a bioregional culture. This sits somewhat uncomfortably with the "cultural conservatism" of the West that is part of the romantic heritage valued in public land law.[80] Ultimately, I think Wilkinson reconciles these disparate voices through the reality that new and old, environmentalists and Mormon ranchers, need each other to restore the land.[81] Such a project is difficult, lengthy, and cannot have a pre-determined outcome. But it is the kind of work that Wilkinson endorses and participates in. His research has always reflected an instinct to jump into the game as a facilitator[82] or advisor.[83] It also influenced the Forest Service planning rule defining social and economic sustainability party in cultural terms.[84] Yet work remains to pilot the role of culture. The Mormon ranchers of Arizona mostly disagree that reintroduction of wolves to that state is "a powerful moral statement" or "a vibrant symbol of what a great and good people can do."[85] Like the reformation of the Forest Service, Wilkinson provides us with "signs that point in opposite directions."[86] A good scholar leaves behind pitons for the next generation.

Organizing public land management around a "home" department or concept appeals to a deep sense of place. But balance requires undomesticated experiences of foreignness and peril. The geographer Yi-Fu

---

[77] *Id*. at 343.

[78] Wilkinson, *supra* note 27, at 951.

[79] *Id*.

[80] Wilkinson, *supra* note 13, at 424.

[81] Wilkinson, *supra* note 27, at 945.

[82] *See* Listening to All the Voices at 945 (mediating a dispute between the Park Service and the Timbisha Shoshone Tribe).

[83] Tony Davis, Bush Camp Backpedals on Toppling Monuments, High Country News (Sept. 25, 2000) ("In 1996, Wilkinson helped Interior Department Solicitor John Leshy draft Clinton's proclamation creating the Grand Staircase-Escalante National Monument in Utah."). http://www.hcn.org/issues/186/6034.

[84] A Case Study in the Intersection of Law and Science at 307 (serving on the NFMA Committee of Scientists); 36 C.F.R. § 219.8(b).

[85] Land Use, Science, and Spirituality at 11-12.

[86] Charles Wilkinson, Heeding the Clarion Call for Sustainable , Spiritual Western Landscapes: Will the People be Granted a New Forest Service?, 33 PUBLIC LAND & RESOURCES L. REV. 1, 45 (2012).

Tuan calls this dialectic "space and place."[87] If everywhere is home ("place") then there is nowhere ("space") to be a stranger, an outsider, a cowboy. Place may lose is meaning if it is not surrounded by a more perilous space for exploration, testing, and adventure. Wilkinson is no proponent of domestication of our federal lands. His meditations on Utah's Kaiparowits Plateau make it clear that wildness and remoteness are cherished values in the landscape.[88] In that respect, time may serve as the space that counter-balances the place of culture.

Limits are important in defining a place. Obviously, geographic limits form place boundaries. But, when Doig despairs that "limits" is not a word commonly recognized in the West, he is lamenting the lack of sustainability in land use.[89] Wilkinson's work on the Forest Service planning rule contributes to a growing recognition of limits. Appreciating the heart of Wilkinson's devotion to the Colorado Plateau or the Rogue River Watershed requires understanding that public land law is all about setting limits, which—in turn—define who we are through self-restraint. The wilder spaces on public lands can delimit-by-contrast places of home. Putting aside the carrying capacity of land for economic use, we need spaces to test ourselves, to come of age, to introspect, and to touch the sublime. Wilkinson's scholarship on public land law recognizes that culture is central to define these limits. He sketches an alternative to the resource-ism that would program decisions through algorithms that merely sum preferences. The role of culture is messy but necessary if public lands are to shape our better natures rather than just satisfy our immediate wants.[90] As Wendell Berry simply stated, the "only thing we have to preserve nature with is culture."[91] Iris Marion Young has argued that the symbols, meanings, and stories that help construct culture deserve "distinct consideration in discussions of social justice" beyond mere distributional equity.[92] Wilkinson's work adds strength to her calls for deliberative processes that ensure that voices of marginalized groups are considered in decision-making. Oppression and "de-politicizing the process of public policy formation"[93] by allocating decision-making to welfare economists can silence self-expression of minority cultures even

---

[87] Yi-Fu Tuan, Space and Place: The Perspective of Experience (1977).

[88] The Public Lands and the National Heritage at 504; Land of Fire, Land of Conquest: The Colorado Plateau and Some Questions for Its Future, 13 J. OF ENERGY, NAT. RES. & ENVTL. L. 337, 367 (1993).

[89] Doig, *supra* note 73, at 141.

[90] Mark Sagoff, The Economy of the Earth (1988) (exploring the difference between endogenous processes in which deliberation shapes the outcomes of political debates, and exogenous environmental policies designed to satisfy wants).

[91] Berry, *supra* note 45, at 143.

[92] Iris Marion Young, Justice and the Politics of Difference 23 (1990).

[93] *Id*. at 10.

where the members have achieved material equality. Wilkinson concedes that cultural differences make deliberative decision-making difficult but no less valuable.[94] Respect, he argues, will go a long way toward building stronger community plans for sustainability.[95] Young and other political philosophers would call it justice.

IV. WONDER & JUSTICE

Aristotle related wonder to the moral disposition giving rise to philosophy, what we might call investigation triggered by curiosity.[96] Wilkinson's scholarship reflects this response to the puzzling patterns displayed by law and its effects. The lived experience of the law—especially the application of natural resources statutes and regulations to particular places giving rise to a "law of the land"[97]—is difficult to generalize. It is even difficult to study, requiring painstaking parsing of plans, field visits, and interviews. Therefore, few legal scholars have bothered to investigate the qualitative outcomes (one might say "stories") that result from application of public land law. Wilkinson, though, breathes life into the "law of the land" by developing narratives that show how rules affect and shape people's lives.[98] Wilkinson himself possesses the moral disposition to participate in a pilgrimage along Oregon's Illinois River, journeying to "a place to shake your head in wonder at the beauty."[99] It then leads him to consider just what the law should do about such a treasure. Wilkinson has the clear-mindedness and courage to describe his approach as giving romanticism a role to play in shaping the management of federal lands.[100]

A romantic form of wonder has long animated aspects of public land law. Perhaps the most influential American legislation in world conservation is the 1872 act establishing Yellowstone National park, in part to preserve "natural curiosities or wonders."[101] This kind of ineffable wonder challenges the technocratic approach to valuing natural re-

---

[94] Wilkinson, *supra* note 39, at 137.

[95] *Id*. at 145.

[96] Aristotle, Metaphysics, book 1, §982b

[97] Robert L. Fischman, Leveraging Federal Land Plans Into Landscape Conservation, 6 GEO. WASH. J. ENERGY & ENVTL. LAW, no. 3, Winter 2016, 46, 46.

[98] Daniel J. Philippon makes a similar argument for the role of the humanities in sustainability studies. He claims that literary and cultural narratives provide meaning and perspective. Daniel J. Philippon, Sustainability and the Humanities: An Extensive Pleasure, 24 AMERICAN LITERARY HISTORY 163 (2012). Wilkinson is the chief proponent of that notion in public land law.

[99] Wilkinson, *supra* note 27, at 957.

[100] Wilkinson, *supra* note 13, at 424.

[101] 17 Stat. 32 (1872).

sources. It is beyond our ken to untangle which aspects of this wonder are programmed into human genes as "biophilia" and which are cultural artifacts. But, wonder is widely credited for motivating great scientists[102] as well as and lawmakers.[103] Once "curiosity is sparked," people will seek the facts and greater understanding.[104] Wilkinson's work shows reverence for the understandings delivered by science,[105] even as they may contradict venerable cultural understandings.

As a teacher, though not to the exclusion of covering doctrine, Wilkinson certainly emphasized the importance "of awakening the senses rather than memorizing facts."[106] Whether an inspirational story about the Siletz people, Theodore Roosevelt, or the primeval forest of the Menominee Reservation, Wilkinson subscribes to the importance of holistic wonder. As a scholar, Wilkinson opened the door for the rest of us to describe the real, felt stakes in dispute. For instance, in recounting landmark litigation over federal reserved water rights at Devil's Hole National Monument,[107] he puts aside the popular understanding of the case as ranchers versus fish. Instead, he relates how real people value Devil's Hole, not just for recreation, but also for beauty[108] and "desert magic."[109] And even with "love."[110]

As a writer, Wilkinson is capable of majestic language, no better manifest than in the title chapter of *The Eagle Bird*. In that essay, he grapples with "bloodless" legal writing that fails to capture the wonder of the land and biota it attempts to manage: "The law is the place, above all others, where our nation has chosen to lodge many of our highest ideals, our best dreams, our deepest passions. Still, laws almost always are flat, lifeless."[111]

Other than section 2 of the Wilderness Act, which he discusses as the exception that proves the rule, Wilkinson criticizes law-drafting as too crabbed to identify the wonders that inspire conservation of the pub-

---

[102] Richard Dawkins Unweaving the Rainbow (1998); E.O. Wilson, Naturalist (2006).

[103] E.g. 17 Stat. 32 (1872).

[104] Lisa H. Sideris, The Secular and Religious Sources of Rachel Carson's Sense of Wonder, in Rachel Carson Legacy and Challenge (Lisa H. Sideris and Kathleen Dean Moore eds. 2008) (citing Rachel Carson, The Sense of Wonder (1965)).

[105] Wilkinson, *supra* note 28, at 294.

[106] Sideris, at 245. Wilkinson applies this to teaching in The Eagle Bird at 15 ("Entering law students begin sentences with 'I feel.' By graduation they respond with 'it depends.'").

[107] *Cappaert v. United States*, 426 U.S. 128 (1976).

[108] The Law of the American West at 955; Listening to All the Voices at 947; An Ethic of Place at 424.

[109] Wilkinson, *supra* note 27, at 947.

[110] *Id*. at 947 & 957

[111] Wilkinson, *supra* note 39, at 10.

lic lands. Rising to his own challenge, Wilkinson does much to raise awareness in the legal literature about places (especially BLM lands on the Colorado Plateau) where wonder is more subtle than Yellowstone.[112] He is correct that a word like "majesty" is as important—and no less clear—than "due process."[113] Indeed, "how is it possible to be precise about eagles without knowing of majesty?"[114] Similarly, Wilkinson defends "beauty, imagination," and even "cultural conservatism" as important concepts on par with "the market" or "the environment."[115] All of these notions of our highest aspirations ultimately should lodge in the law, even if existing statutes seldom measure up.[116] Wilkinson's scholarship raised the importance of public natural resources law as a vehicle for expressing collective aspirations.

In his influential essay on the limitations of wilderness preservation as an expression of an ethic of place, William Cronon argues that wilderness is a place that invokes wonder as a state of mind.[117] By now, it should be clear that Wilkinson anticipated Cronon's separation of wonder from wilderness. Cronon argues that cultivation of wonder for places that fail to meet legal wilderness definitions is essential to understand the role of humans in nature and to develop an appropriate environmental ethic. Unless we experience the wonders of nature even at home, we will be trapped in a dualist world where nature is "out there," away from us.[118] Wilkinson recognized this imperative all along, and found "the striking power of place" to force upon us wonder across federal land categories, not just in parks or wilderness areas.

While soaring in his scholarship, Wilkinson keeps his legal-eagle sights also on the role of lawyers as advocates. For instance, he makes the case for the practical as well as the philosophical value of words evoking wonder:

> A federal judge can more easily see the force behind the statute when he or she is alerted by bright words. It is not hard to mistake a call to arms …. Administrators, too, know that law is built on words, and they will squirm at vivid words from Congress; and sometimes they may make different decisions.[119]

---

[112] Wilkinson, *supra* note 41.
[113] Wilkinson, *supra* note 39, at 14.
[114] *Id*.
[115] Wilkinson, *supra* note 13, at 424.
[116] *Id*. at 425.
[117] William Cronon, The Trouble with Wilderness; or, Getting Back to the Wrong Nature, *in* Uncommon Ground: Rethinking the Human Place in Nature 69, 88 (William Cronon ed. 1996).
[118] *Id*.
[119] Wilkinson, *supra* note 39, at 15.

Building on Patricia Limerick's work,[120] Wilkinson directs attention toward the way law implicitly distributes power through geographic decisions in accordance with the seemingly bland commands of statutes. He unmasks the powerful forces of cultural dominance animating public land law.[121] Along the lines of "environmental justice" scholarship, Wilkinson worried about the distributional inequities of pollution and sacrifice areas. His narratives of the "Big Buildup" during and after World War II in the West[122] highlighted the industrial legacy of federal planning.[123] That legacy generated tremendous national benefits.[124] But, the flooding of sacred tribal areas, the despoliation of surface coal mining, and the contamination from uranium development also hurt people.[125] The costs, often on public lands or lands managed by the United States in trust for tribes, continue to be borne locally and inequitably. On the other hand, Wilkinson is also clear that environmental protection can also impose disparate *harms*:

> [we need] to appreciate the inequities. Those jolting changes affect some individuals disproportionately, and many loggers, ranchers, and commercial fishers have been neither amused nor comforted by the fact that their communities have rebounded in the recreation economy, for which they have no interest or training.[126]

Wilkinson gave voice to the people bearing those costs and offered lessons as timely as ever. Today, climate change has already created losers in the global build-up: from residents of Kivalina, Alaska to citizens of Pacific Island nations.[127] How will the law represent American justice this time around?

V. CONCLUSION

Charles Wilkinson established unimpeachable academic credentials with comprehensive treatments of many of the key developments of public land law from the 1970s. He articulated key themes that seem obvious

---

[120] Patricia Limerick, The Legacy of Conquest (1987).

[121] Wilkinson, *supra* note 39, at 113.

[122] Fire on the Plateau at 185; Listening to All the Voices 945.

[123] Fire on the Plateau at 185 ("The Big Buildup of the Colorado Plateau eclipsed virtually every other industrial effort on earth.")

[124] *Id*. at 183 & 213-14.

[125] *Id*.

[126] Wilkinson, *supra* note 27, at 948.

[127] *Native Village of Kivalina v. ExxonMobil Corp.*, 696 F.3d 849 (9th Cir. 2012) (Clean Air Act precludes federal common law nuisance claim by a city damaged by the effects of climate change).

only in retrospect. That is an accomplishment worth celebrating at any law school. But then he transformed his scholarship to employ analysis displaying greater affinity with the humanities. Legal scholarship had long made room for social science. Wilkinson opened scholarly discourse on public land law to the critical tools aimed at understanding human culture. Wilkinson found a way to incorporate the values of for bioregionalism, home, time, culture, wonder, and sense of place into legal scholarship. Through books, essays, and articles, he reinterpreted what it means to pursue equity and justice in public land law.

In legal scholarship it is more important to ask the right questions, to frame the normative inquiry, than it is to influence courts or legislatures. I have great respect for the law reformers and their concrete role in positive law. But, Wilkinson's research will endure as great public land law scholarship because it transformed our *inquiries* about how the law can best reflect our national aspirations. The first phase of his work focused attention on a public interest as the overarching concern of public land law, supplementing the formerly dominant private rights analysis. The second phase connected new ideas to the relevant legal questions about how to gauge the public interest. Saying that federal agencies must serve the public interest is an empty slogan without methods and standards for determining the public interest. So, Wilkinson undertook a multi-decade project to reimagine the procedural and substantive values of the public interest. He offered an alternative to the neo-liberal, welfare-economic tools favored by federal administrators for cumulating private preferences into a public interest. His deliberative approach to the public interest is as much a home- or place-building tool as it is a method to incorporate local culture and knowledge into public land management. And, it represented a significant break with traditional public land law scholarship.

As a former student, I am grateful for Wilkinson's inspiration. As a public land law scholar, I am grateful for Wilkinson's pioneering work because it elevated the importance of everything I and other public land commentators write. It raised the status and impact of my research because Wilkinson connected public land law to broader themes of interest to everyone who thinks seriously about American law. Public land law scholarship benefits from connections to the legal discourse on deliberative democracy, distributional justice, cultural diversity, law & literature, and sustainability. Otherwise, it becomes an echo chamber preoccupied with ever more recondite issues of little interest beyond the circles of specialists.

Persuading in a literary style, connecting to narratives of nature and spirituality, and gaining recognition for non-utilitarian approaches is more difficult to attain for most of us than cranking out another survey of

cases or critique of regulation. That may limit Wilkinson's influence because few law professors have the wit, wisdom, or courage to follow his lead. But, even if we do not spot a successor in the literature, Wilkinson's scholarship will continue to inspire law reformers, and law professors. It demonstrates what a person with real gifts can accomplish when he looks beyond the conventions of legal scholarship. Now that he has revealed to us a vast new legal landscape to explore, it beckons.

Speech

In Love With the Wild: Thoughts About the Public Lands in the 21st Century*

Bill Hedden†

* 2016 Distinguished Lecture for the Getches-Wilkinson Center for Natural Resources, Energy, & the Environment

† Bill Hedden is the Executive Director of the Grand Canyon Trust. Under his leadership, the Trust has helped clean up emissions from the region's coal fired power plants and remove radioactive wastes from the bank of the Colorado River. Hedden developed a leading program for reducing grazing damage on public lands, including purchasing two ranches covering 850,000 acres on the Grand Canyon's North Rim. The organization has led in developing ecologically sensible forest restoration programs and partnering with the Hopi and Navajo tribes on sustainable economic development. Hedden has a B.A. and Ph.D. in biology from Harvard University2002.

Years ago, the writer and activist Terry Tempest Williams and I stood on the sidewalk in front of the Whitney Museum in New York asking passersby if they knew what the BLM is. Terry makes me do things like that. The first nine cosmopolitan people had no idea whatsoever, so Terry, who had bet that somebody would know, cheated. She spied a woman wearing heavy turquoise jewelry crossing the street and ran over to accost her. The woman, freshly arrived from Idaho, broke the streak with a rudimentary understanding of our nation's largest land manager, and confirmed through our deeply scientific polling that almost nobody outside the West knows much about the public lands. To Terry, Utah born and bred, this was a shock, but not to me, a native son of New Jersey.

I had never been west of Pennsylvania when I met my wife, Eleanor, in graduate school, and I knew nothing whatsoever of the public lands beyond a sense that there was more to the National Park Service than historic parks and monuments like Gettysburg or the Statue of Liberty. I could have named Yellowstone and Yosemite, but honestly, the list wouldn't have been very long, and the understanding of how they were managed was murky. Eleanor, who had been exploring Utah's canyon country all her life, soon remedied the situation, bringing me over the winding route from Salt Lake to the Escalante country and changing my life for good.

I had no experience of immense open country not covered with *No Trespassing* signs, was completely unprepared for the heights and wildness of the Utah plateaus north of Bryce, and lost my heart in the redrock canyons of Deer Creek and the Escalante River. The canyons stunned me, and if my life of activism has amounted to anything, it was all nascent in those first days of awe and delight. It's a common occurrence, but unlike most who love the place from afar, we moved deep into southern Utah as soon as we could manage it. In our case that meant camping outside for most of two years while we worked at any jobs we could find and built our home on $5,000 of savings. We cooked on a tiny fire, bathed under a waterfall in the creek, and watched from our sleeping bags as coyote families called and the milky way wheeled overhead throughout the night. Now that the calluses and scars have softened, we remember it as an incomparably romantic time in our lives.

Some of you may have noticed that I gave the organizers of this talk an unusual portrait photograph. Since they had already obviously lost their minds by inviting me to give this lecture, I thought I'd make their job even harder by giving them a picture of a big fish to advertise the talk.

I like the image for several reasons, not least because the fish,

which is a muskellunge, is really a marvelous creature. I hasten to add that she went back into the lake and swam away healthy, if not happy about our encounter, a few seconds after the picture was taken. I also like the photo because it captures me in the kind of moment of joy I have experienced throughout my life in encounters with wild creatures in wild places. And finally, I chose the image of me involved in a pursuit that a friend once called "playing with a wounded animal on a string" to remind myself that I have not been blameless or without impact as I have enjoyed a privileged existence in the midst of the public lands. Like other rural westerners, my life has been shaped in every way by the surrounding presence of of our 640 million-acre common inheritance, and I have had far more than my fair share of the benefits. These days, I mostly think about how I can return the favor.

So, this talk begins with a report from the field, so to speak, a description, from an activist and stakeholder, of what it's like to live surrounded by deep, wild public lands. I think of this first part of my talk as a personal description of what the public lands can mean to an individual life. And then, following that, I will broaden the scope and look ahead, asking how our relationships with these lands must evolve in the 21st century. It is necessary to speak in new ways about these matters at a time when the very concept of public lands is once again under assault from the Congress and from state legislatures, attacked through well-funded disinformation campaigns, and, if all the rest isn't clear enough, the land itself occupied by armed militias—our inheritance under threat from people who have not felt lucky to earn a living off of lands and resources belonging to all of us, but who feel resentful nonetheless and determined to take everything for themselves. The American people are in danger of losing something of inestimable value without really knowing what it is and, more importantly, without having a modern conception of what role this globally unique endowment might play in helping us find a way to live in harmony with our ever more stressed planet.

So, picking up the story back around our little campfire, the valley where we live is bordered on the north by the gorge of the Colorado River. We basically drive through the Grand Canyon to get to town, with the backcountry of Arches National Park across the river. Immense cliffs, mesas, and towers front BLM Wilderness Study Areas on the east and west; and the bowl of the valley is completed on the south by the snowy peaks of the Manti-La Sal National Forest. It would be a national park anywhere else, but here it's just a stretch of nice country.

In the early years I worked on the river as a boatman and on hot summer evenings we and the neighbors would go swimming at an especially nice beach. We were young and healthy and saw no need for

bathing suits and it is funny now, forty years later, to see tourist cars crowded in that area as visitors search for the fabled "nude beach." When we needed to make concrete or mortar, we shoveled pick-ups full of sand from along the river and gathered stone for the house from talus slopes in the mountains. In fall it was easy to get ponderosa and aspen firewood from the forest, or pinon and juniper from the lower country. For forty years, I have been the ditchmaster of an irrigation company that draws water for our community's trees and gardens from a creek arising on forest service and BLM lands. To break from work, I fish in lonely trout streams, eating raspberries and rose hips beside the pools. I recall driving into Arches on a snowy December day when there was not another set of tracks on the road, not another person there to see the squalls move through the otherworldly landscape, a sudden shaft of light flaring across a pink turret backed by the white fastness of the La Sals. The next day I went into those mountains to cut a Christmas tree. It was a hard place to get rich, but a very good place to be poor.

I was not scholarly enough to know how the federal lands had built our country, paying war debts, facilitating westward expansion and trans-continental railroads, endowing institutions of higher learning, providing building materials, minerals, energy resources, and the water that allowed development of the arid regions. Those benefits flowed widely and unacknowledged throughout the background of American society; but for me and my neighbors, the public lands shaped our everyday reality in the most mundane ways.

I knew people who lived almost completely outside the cash economy. One cut juniper posts and used them to fence a rancher's federal grazing allotment in trade for a mining claim. He developed the claim and then traded for a dozer. After doing every imaginable kind of dirt-work on his homestead, he did the same for a friend with a broken down sawmill, repaired the mill and cut lumber for his house. No prizes for guessing where the logs came from. He helped fence cows out of my orchard and I hand-dug a well for him near the creek. It's an entirely sensible way of living that is passing out of the world. I viscerally understand the anger felt by many rural people who want a return to those simpler days, even as I believe that they have completely misplaced the blame.

My desert idyll soon suffered a deep inflection caused, appropriately enough, by a federal project. The Arab oil embargo had, among much else, stimulated the nuclear power business, and the U.S. Department of Energy was tasked with developing perpetual repositories for the accumulating high level nuclear wastes. The initial plan was to choose one location from among five sites in the West, while simultaneously beginning a search for a second site east of the

Mississippi. DOE was looking at salt domes in Louisiana and Texas, welded tuff in Nevada, and basalt at the already contaminated Hanford nuclear site beside the Columbia River; but their favorite geology was in the Paradox Basin of southeastern Utah. Here, DOE scientists, concerned only with geochemistry, zeroed-in on salt beds along the western edge of Arches and at the southern entrance to Canyonlands. We joked that the primary criterion for the nation's first high level nuke dump seemed to be that it had to sacrifice a national park.

Moab was a uranium town, so the multi-billion-dollar project was the subject of intense discussion. The orthodoxy arising from city and county officials was that we would gladly host the repository. I was converted from a concerned citizen to a leading activist through my response to one particularly simple minded assertion by the boosters. When they said, "We dug this stuff out of the ground here, so we have a patriotic duty to take it back," I couldn't resist pointing out that high level nuclear waste is nothing like uranium ore, or even the concentrated yellowcake coming out of the Atlas Mill. People started asking me what the dump was really going to be like and why the country wanted to hide it away in our backyard, and within two months Governor Matheson had appointed me as the citizen representative to the state task force that was Utah's official liaison with DOE.

I was cast in the role of chief opponent of the project, managing to expose all of the logistical and cost disadvantages of the Utah sites and highlighting the potential travesty of building the dump on the doorstep of a glorious national park. Perhaps this holding action was successful, though in the end, all of our studies and meetings came to seem irrelevant when Louisiana Senator Bennett Johnston, who chaired the Committee on Energy and Natural Resources, resolved the issue through what everyone called the *Screw Nevada Bill.*

This blunt bit of politics let Johnston's home state and every other candidate state off the hook and terminated the search for an eastern site as long as there was universal agreement to force the repository on Nevada. Ever after, until the program was defunded in 2011, opposition to the Yucca Mountain site was a perquisite for holding a major political office in the Silver State. Now, despite the presence of the wastes at reactors across the country, it is a nearly incontestable fact that nobody in America is willing to have the high level waste dump nearby.

I tell this story, despite its odd ending, because it was my first experience with the outsize involvement rural citizens in the western states can have in federal decision making. Where I grew up, you'd have to devote a career to becoming dogcatcher, but here I was debating national policy with the Secretary of Energy after mere months of

involvement. The complaint that easterners and distant Washington bureaucrats shouldn't be imposing their foolish ideas on beleaguered westerners is arrant nonsense. Any local with half a brain can make a major mark in the public lands states. I know this to be true.

Living in a small town during the various phases of the Sagebrush Rebellion, I gradually became dismayed at the way our elected officials misunderstood our economy and needs. In a county that is the gateway to two national parks, we depend heavily on federal jobs, tourism, and, largest of all, transfer payments arising from a quality of life economy.

Things were booming for clever entrepreneurs. But, instead of emphasizing education so our kids might share in the success, or the construction of high speed internet to support telecommuters, or the even more important protection of the public land assets everything hinged on, community leaders instead groused endlessly about the collapse of the mining industry, blaming the feds instead of the market. Doubling down on that clear thinking, they ranted about grazing restrictions in the least agricultural county in Utah. And, in the early nineties, the county commission ignored the impending closure of our hospital and repeatedly spent our $50,000 monthly mineral lease payment on an Environmental Assessment for the infamous Book Cliffs Highway. This boondoggle would have pushed a major haul road from the hydrocarbon fields in the Uinta Basin down through some of America's wildest country and over the road construction nightmare of the Book Cliffs to Interstate 70 and the transcontinental railroad.

In the end, some real local news coverage, and radical misjudgment of informed public opinion by the county commissioners, led to an overthrow of the commission form of government and a free-for-all election for a new county council. I ran against 12 other candidates for one of the seats and won election, if you could call it winning, to a new seven-member council heading a wildly divided county that had been left a budget soaked in red ink as a going away present from the commissioners. Proceedings for a recall election began on the day we took office.

It was a fascinating experience that shaped the perspectives I am presenting here. The new council sorted out the budget and quickly killed the Book Cliffs Highway project. We used the mineral lease funds instead to save our hospital from closure. The sagebrush rebels were convinced that we were about to reintroduce wolves to the school playgrounds; but the voters were pleased by this bout of non-ideological good governance.

As a councilmember, I got to redraw the boundary of Arches National Park, incorporating the glorious, stream filled canyons north of

Delicate Arch. I stopped the plans of the Nuclear Regulatory Commission to leave 16 million tons of toxic uranium mill tailings marinating in the groundwater beside the Colorado River, and I led the way on the Department of Energy project to remove them to a geologically favorable site in the Cisco Desert. It seemed as though we locals were being asked to resolve major public lands issues on a weekly basis. But the story I want to emphasize here is about our fitness for that heavy role.

Soon after our election, Governor Leavitt and the Utah delegation decided to assemble a bill to settle, once and for all, the Wilderness "problem" in Utah. Their method was straightforward: ask the commissioners to tell them what should be Wilderness in each county and release all the rest. Our Council was ideologically divided, with three devotees of land protection, three passionate advocates of extraction in all its forms, and a friendly guy who liked everybody and just wanted us to get along. We were systematically considering all the proposed wilderness in the county and the swing voter, sitting beside me, was voting for designation of one area and against designation of the next, without reference to geography. When we got to Mill Creek Canyon, the watershed for the City of Moab, it was time for a "No" vote, and so it was decided to throw open this Wilderness Study Area to development.

I muttered something about it being the stupidest thing we had done since being elected, and the decider asked me why. I told him that we'd just missed the opportunity to protect our water supply and he replied blankly, "Oh, Mill Creek, is that the place up behind the old drive-in movie theater?" He had just cast the deciding vote shaping major federal legislation and he didn't even know what we were talking about. Experience has shown that his act was not really an anomaly. I keep that in mind when I hear about locals being the people who know the lands best. The unworthy bill that arose from that effort was mercifully killed by Bill Bradley's Senate filibuster, a Jersey boy imposing some sense on the rural West.

Now, somewhere along here, in a talk like this one, I am supposed to say that public land policy needs reform—that we need to involve local governments and citizens more deeply to take advantage of their expertise and honor their stake and unique local circumstances. Yet, despite the chorus of complaints, we almost never learn anything specific and factual about what has been done to damage the interests of local jurisdictions. So, it is with serious caveats that I acknowledge the kernel of truth in that position.

On the other hand, I far too rarely hear emphasized the prosaic idea

that the framework for managing public lands works pretty well amongst competing demands; or that it would work far better if we gave the land management agencies consistent and enlightened political direction and provided budgets that allowed for robust science staffs and the kind of genuine public involvement that would lead to creative alternatives as envisioned when NEPA was passed.

As a Councilmember, I was barely beginning to learn the ins and outs of public lands when my life took one of those strange turns lives take, and I found myself in a role never repeated before or since in Utah and perhaps not in other western states, either: I became a full-time, professional environmentalist, working for the Grand Canyon Trust, while sitting on a rural county government. Suddenly I didn't have to work long hours making furniture to support my family, while fitting government work into the cracks; and having the standing of an elected official with the focus and resources of a conservation group behind me was a privileged position that let me explore some new angles in conservation work on the Colorado Plateau.

Don't worry, I'm not going to recount the war stories of a career of activist campaigns. Instead, I'd like to spend my remaining time describing a few key issues that point toward principles we should keep in mind as we craft a new vision for the public lands. Having a compelling, modern vision is probably the best antidote to the militias and legislators who want to take over and privatize our inheritance. It is an auspicious time for thinking about these things. We often talk about how the environmental constituency is stagnating, white, affluent, and reaching retirement age—people who first became concerned during the days of Rachel Carson and the flaming Cuyahoga River. But there is immense energy arising among young people today who realize that the world they are inheriting is ricocheting into scary, uncharted territory.

This generational transfer will not be a gentle evolution of environmentalism as we have practiced it. Our successors will determine the future of our public lands according to whether they believe those 640 million acres can be a useful asset in managing a climate run amok, in providing habitats for legions of species on the brink, in delivering breathable air and usably clean water. I'd argue that this new activism will be more pragmatic than environmentalism has been, evaluating decisions based on full life-cycle analyses, and addressing the inhumane systems responsible for our predicament; but I'd bet that the new environmentalism will be more visionary as well, necessarily embodying concern for all of humankind, and all our co-travelers on this planet.

The young activists I know want reason to believe that the future does not have to be all adaptation to ever grimmer circumstances. They

want to know that the future also holds the prospect of great beauty and meaning. They are asking nothing less than the overarching question: "How shall we live that it might be so?" We owe it to them to offer the boldest, wisest advice we can conjure from our experience. So, here I want to offer a collection of thoughts about how America's unique endowment of public lands can be the scene of a globally important experiment in how protecting and restoring the world around us can help us save ourselves. Not one of these ideas originates with me, but I hope there is value in pulling them together into a single picture that points in the direction we need to go.

I'll begin in the spring of 2009 when a scary drought in southeastern Utah momentarily broke into a violent wind storm, blowing dust in every direction. At my house, the sky turned an unhealthy green and then ominously darkened as a small tornado churned up the Colorado River canyon and burst into our valley, passing within twenty feet of my house. This black hole of energy tore trees out of the ground by their roots and flung large branches hundreds of feet across our field before disappearing. We'd never seen anything like it and, as we shook our heads, it began to hail in one of those storms where the ice crystals bounce a foot off the ground and the deer in the yard run chaotically until they find shelter under a tree. Just as it occurred to me to worry about the roof and car windshield, the hail turned to mud. It poured mud from the sky for half an hour. I wondered if frogs were about to begin falling next.

We know now that 2009 and 2010 were extraordinary years for spring storms that stripped disturbed land across the southwest and deposited the dust on the Rocky Mountain snowpack. The runoff from the warmly blanketed snow occurred six weeks early in those years, accelerating evapotranspiration and reducing water flows in the Colorado River by 900,000 acre-feet, or more than the amount used by Denver, Las Vegas, Phoenix, and Tucson combined.

It has been dry and windy in the southwest since time immemorial, but these levels of soil loss are the bitter harvest of our modern land uses. After the ranchers and miners arrived in the 1880s, the amounts of dust on the mountain snow rose as much as 700 percent, and then stabilized at five times prehistoric levels. Today, as temperatures rise and soil crusts wilt, more dirt than ever is being scoured into the air, and this is coming home to us through the water supply, where it hurts. Our management of land is important in every way we can imagine, right down to stabilizing the soil surface, and it's important in many ways we haven't understood yet. Aldo Leopold's guidance is still succinct wisdom for a complex and consequential world: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when

it tends otherwise." Shelves of land management agency manuals could be replaced with those two sentences.

And note, please, this is not a throwaway line: In his new book, *Toward a Natural Forest,* former Deputy Chief of the Forest Service, Jim Furnish, concludes with the observation that, "The transition of our public forests to timber production after the Second World War was a policy choice, enabled and led by the Forest Service. We can make a similar policy pivot to manage public lands primarily for diverse habitats, clean water, restoration, carbon stores, and other environmental values, while still producing wood products sustainably." The remarkable thing is that, if we summon the will, we can actually make such pivots in the management of public land, where no such emergency response is possible on private lands.

The most widespread use of our public lands is grazing, and I'd like to focus on that briefly to highlight the stakes of current management and suggest how we can do better. There are 760 million acres of rangelands in the United States and half are public lands in the West. Many, especially in the arid regions, are grossly overgrazed. Rather than being carbon sinks, overgrazed lands have become carbon sources. It is estimated that preservation and restoration of healthy rangelands could sequester an additional 200 million tons of atmospheric carbon dioxide each year for many decades. That's 3.3 percent of the greenhouse gases from our fossil fuel combustion. As the Department of Energy has observed, using natural processes to store carbon in terrestrial ecosystems is the most viable and cost effective way to offset emissions.

But, let me come at this from the more tangible direction of grassland health, since we are all numb to discussions of greenhouse gases. Shortly after President Clinton designated the Grand Staircase-Escalante National Monument in 1996, I had the chance to do something good for the Escalante River, the place where I first fell in love with the West. Through personal friendships made as an elected official, I was able to take the bull by the horns, so to speak, and negotiate a private deal with four ranching families to end grazing throughout the sublime length of the Escalante River and most of its tributary canyons. The BLM ratified that agreement in 1999 through an amendment of the resource management plan. Perhaps they wouldn't have been brave enough to do it, but Governor Mike Leavitt wrote approving of the deal as did the Utah Division of Wildlife Resources. I think it is worth quoting from that agency letter, because even the bland bureaucratic prose can't disguise a mounting sense of the marvels that healthy country can give us.

> There are important wildlife values in the area that would be enhanced by the proposed changes in livestock grazing. Riparian vegetation and understory cover along the Escalante River and several tributaries would be protected and improved…Healthy and abundant streamside vegetation benefits native fishes like the flannelmouth and bluehead suckers, and improves water quality by providing cover and food resources, regulating water temperature, filtering and trapping sediments, and increasing water storage for release over longer periods… Moreover, upland grasses, forbs, and vegetative cover would increase and provide better habitat for Southwest willow flycatchers, mule deer, desert bighorn sheep, rabbits, and other small mammals, which are in turn prey species for predators such as mountain lions, bobcats, coyotes, foxes, and raptors… Increasing vegetative cover can also improve watershed quality, reduce soil erosion…and enhance recreational and aesthetic values.

All that and substantial carbon sequestration too. That is what Aldo Leopold was getting at. Are changes like that achievable at scale? Not if we continue in thrall to the myth of the cowboy. Not if land management continues to be a pawn in our political paralysis. But what if we reviewed everything about how we are using all 640 million acres of public land with a primary focus on climate, on ecosystem integrity, and on beauty, and did it like our lives depended on it? What if, as Jim Furnish suggests, the land management agencies were given the central mission of sequestering carbon and providing healthy, interconnected habitats? If that sounds politically naïve, I'm guilty as charged; but I'd argue that anybody who thinks we can get by without that kind of change is scientifically naïve.

Of course, saying that we want healthy habitats is not the same thing as getting them at a time when the world is changing so fast. Do we need to become interventionist gardeners establishing durable new systems in the Anthropocene, or should we keep our clever ape fingers off of things we don't understand? I have a strong preference for protecting the biggest areas of wild country possible, connecting them, and drawing their boundaries along ecosystem or watershed lines so that they are still manageable when the surrounding country is developed. Even though these areas may change from what they have been, nature will make good use of them, and this is the most affordable form of insurance available to us. Where possible, degraded areas should be subjected to conservative, adaptive restoration that is planned so that we efficiently learn what works and what does not. This must be approached with a great deal of humility, since it so easy to get wrong, and the stakes are so high.

The federal agencies are already tasked with considering the costs and risks of climate change by Executive Order. The trouble is, they are still mainly managing for old ideas of multiple use while our understanding of the impacts is evolving at a terrific rate. Every time we look, the costs are drastically higher. To understand why, consider that estimates of the social cost of carbon do not yet include damages from things like ocean acidification, loss of the Artic sea ice, melting permafrost, large scale forest diebacks, or changed ocean currents. I wonder if those disasters, taken collectively, will impose any social costs? Nobody has any real idea how to price the projected loss of up to one third of the species of life on earth.

These knowledge gaps have consequences. Federal forests in the northwest hold some of the densest carbon stores of any terrestrial ecosystem, perhaps 150 percent of annual U.S. carbon emissions. In its Preferred Alternative for managing federal forests in western Oregon, BLM used 2013 data to calculate that climate costs may be double the benefits from timber production, and amount to $91,000 for every timber related job; costs they were willing to sweep aside in order to get out the cut. But new cost-of-carbon models from last year reflect the fact that climate change will not only destroy property and reduce crops, but also cripple the global economy's ability to grow. When this more accurate information is used, economists calculate that BLM's Preferred Alternative for Oregon will entail climate costs nearly thirty times higher than timber benefits, and each timber job will cost society $1.6 million. Now, cost of carbon models are in their infancy, so these numbers aren't gospel, but how badly out of whack does the balance need to get before we assign new meaning and value to the public lands now, while it can still make a difference?

Probably nowhere are all these issues drawn in starker terms than the *Keep It In The Ground Campaign.* The Secretary of the Interior is the largest manager of energy assets in the U.S. and, perhaps, the world. More than 20 percent of current U.S. carbon emissions come from fuels mined on federal lands, and, as yet, the energy companies only have their hands on a small fraction of what's out there. A prominent recent study showed that making an agile pivot and ending the federal leasing of fossil fuels could keep 450 gigatons of carbon dioxide equivalents out of the atmosphere. This is more that a quarter of all global emissions permissible if we aim to keep warming below 2 degrees centigrade. That is the target the U.S. committed to in the Paris Accord, and it's a truly excellent idea for people who enjoy advanced civilization. The most recent scientific research on vanishing ice packs, suppressed ocean circulations, and the emergence of superstorms declares, in rather unscientific language, that we are in a global emergency. Fortunately,

people are rising to meet the challenge.

Last fall I attended a summit of environmental leaders where we discussed the reasonable path forward on climate change: conserve as much as we can; convert everything to electricity; decarbonize the grid; and build as much distributed renewable generation as possible. For the public lands, people were heartened that the administration is beginning efforts to develop measurement tools for scoring and tracking the potential carbon emissions from different actions on different landscapes. Building on that knowledge, the pros conceived a phased strategy to first stop mining federal lands for the worst fuels, beginning with coal and nightmares like tar sands and oil shale, and turning later to take on oil, and, ultimately, natural gas. The campaign to keep coal in the ground was already underway, with an early victory in the January moratorium on federal coal leasing.

Well, the activists were out ahead of us, and not just on coal. The Obama administration has already tried, with limited effect, to turn most of the big knobs we have on emissions through actions like mileage standards and the Clean Power Plan. Looking deeper, it didn't take activists long to track the problem back to the ultimate source of the carbon fuels beneath public lands. With low oil prices idling drill rigs everywhere, bidders at federal auctions were paying virtually nothing for the right to drill, inciting protests that have already blocked these so-called "climate auctions" of oil and gas in Utah, Montana, Wyoming, and Washington, D.C.

Just as the Republicans seem to have underestimated the anger of the voters in their primaries, everybody is underestimating the determination of the climate movement. They mean it when they say "Keep it in the Ground." No more fossil fuel extraction from federal lands…period. It will be fascinating to watch what happens when this immovable object meets the irresistible force of the energy companies. On the side of the protesters is the stark reality that unless we swiftly make the kinds of changes they are demanding, there will be more and more awful evidence that they are right, however much all of us might wish it was not true.

The final thread I want to follow reaches far back into time, because, of course, the landscapes I've been talking about have stories stretching back forever. Their modern incarnation as America's public lands is a relatively new status resulting from a fascinating, sometimes awful, story that is usually neglected to our great impoverishment. So, let me arbitrarily enter that great story by noting that today, April 21st, is the 180th anniversary of the Battle of San Jacinto. It was there in 1836 that Sam Houston's army of Texians won the decisive battle of the Texas

Revolution, defeating Santa Anna's Mexican army in just 18 minutes. When Santa Anna signed a peace treaty three weeks later, the short-lived Republic of Texas became an independent country claiming disputed title to 390,000 square miles of territory carved out of the Republic of Mexico all the way up through western Colorado to the Wyoming border.

We don't talk much about the complex history of Spanish exploration and conquest in America. How many know that the same Garcia Lopez de Cardenas, who visited the South Rim of the Grand Canyon in 1540 with Hopi guides, was later convicted of war crimes for his brutal role that winter in the Tiguex War against the Tiwa people along the Rio Grande? It was the earliest named conflict between Europeans and the Indigenous people in America, and predated the Declaration of Independence by a gulf of time equivalent to the one that has passed since our country was founded.

Much later, but still very early in the West, in 1765 the party of Juan Maria Antonia Rivera became the first Europeans to see the Colorado River in Utah, more than a century before the remarkable Mormon San Juan Expedition entered that territory by crossing Glen Canyon at the Hole in the Rock. Rivera recorded in his journal an exploration of the canyons upstream from Moab, during which they spent a night camped on or near the land that claimed me as its caretaker two hundred years later. These histories offer fascinating insights about our place in the world, but the stories are rarely told of the Hispanic explorers and settlers, or of Blacks, whose status as slave or free was the principal question at issue when the Republic of Texas was admitted as a state in 1848.

It is time we begin to more actively recognize the roles played by diverse peoples in the making of this country. The public lands are an ideal place to do it, since they have been a key part of our democratic experiment at least since the first Homestead Act in 1862. This goes beyond just historical understanding of how we came to be the people we are; we need to invite the widest spectrum of Americans into the enjoyment of our public lands and into the conversation about how we want to manage our shared inheritance in the future. We need to reach those nine out of ten New Yorkers who would think I was speaking Urdu if they were dropped into the audience tonight.

President Obama has made a fine start in broadening our view with the designation of places like the Cesar Chavez and the San Gabriel Mountains national monuments. If our public lands don't continue to evolve along with our society, they risk becoming irrelevant, bereft of defenders just when they need them most.

And this brings me back to those Tiwa people whose pueblos were attacked by Coronado's men, or to the Hopi who guided Cardenas to the Grand Canyon and stood with the violent and otherworldly Conquistador on the East Rim within sight of the ancient Hopi Salt Trail pretending that they didn't know a way down into the sacred abyss. They and many other indigenous peoples are still among us, having endured genocide, smallpox, relocation, forced acculturation, and other horrors too numerous to recount. These peoples have found ways to live within the terms imposed by this continent for thousands of years, based on a relationship of reciprocity with the world, rather than dominion. What should be their role in determining the management of the lands they once inhabited? Might we not have some urgent need of their wisdom? It is long past time to bring the Native Americans formally into the process of managing the lands where they lived, where their ancestors are buried, and where they still gather medicines and sustenance and visit sacred sites. It will require a bold act of leadership to launch this historic new era, and I am excited to say that one is in the offing.

Congress passed the Antiquities Act in 1906, just forty years after the atrocities and forced deportations of the Navajo Long Walk and a mere sixteen years after the massacre at Wounded Knee. By the time Congress took action, the indigenous population of America had been reduced by 97 percent; yet the purpose of the 1906 law was to protect the prehistoric ruins and artifacts rather than the living victims of this campaign of genocide. When modern Indians talk about being invisible, this is what they mean. In the entire 110-year history of the Antiquities Act there has never been a Native American campaign for a national monument, until now.

Today, the Navajo, Hopi, Zuni, Uintah and Ouray Ute, and Ute Mountain Ute tribes have formally united to secure a presidential proclamation establishing a 1.9 million-acre Bears Ears National Monument. This is the extraordinary cultural, ecological, and scenic landscape stretching from Canyonlands National Park south to the San Juan River in southeastern Utah. The land holds a globally significant record of their long inhabitation in the form of innumerable rock art sites, ancient villages, cliff dwellings, trails, and burial grounds, and is still in active use to this day.

The five tribes of the Bears Ears Inter-Tribal Coalition have developed a visionary and workable plan for America's first national monument that will be collaboratively managed by the tribes and the federal government. Their proposal envisions a world-class center for the integration of Native American traditional knowledge and western science at Bears Ears. The Coalition's proposal has been favorably received by the White House and appointees in the Obama

Administration at the departments of Interior and Agriculture. The parties are negotiating over the terms of collaborative management.

The Coalition's effort is so important in the nationwide evolution of tribal sovereignty that a further twenty southwest tribes have endorsed the proposal and it has been recognized as among the highest priorities of the National Congress of American Indians. It is now considered a leading candidate for an end-of-term national monument designation by President Obama.

This work represents a unique opportunity to secure a new kind of national monument that restores relations between Native Americans and their ancestral lands. The Coalition's proposal for Bears Ears also offers a chance for a profound kind of healing—of past injustices, of the land, and of relations among all people—native and non-native alike. I have never been involved with a project that seems more right and more important than this one.

From the idea of healing let me shift slightly to close with a thought about beauty. Even if governments act rapidly and decisively at the international scale, we are in for some rough bumps on the road ahead. Activists will experience unrelieved urgency and frustration as natural and social systems wobble and fray. But, when our love turns to grief, we will have to find ways to turn that grief into even stronger love and beauty.

How could something as fragile and evanescent as beauty stand up to implacable planetary geophysics run amok? How do we find meaning when the financial and energy companies take each new president aside and tell her how it is going to be? Well, beauty seems purposely woven into the fabric of our world and is not as frail as it seems. Goethe said, "The beautiful is a manifestation of secret laws of Nature, which, but for this appearance, had been forever concealed from us." Every system scientists probe turns out to be vastly more intelligent, adaptive, and interrelated than they originally supposed—never the reverse. Reciprocity is often more important than Darwin's competition.

Perhaps beauty is a gift that might be our best guide to dealing with dark times. I have argued for Aldo Leopold's literal truth that selecting the more beautiful option is the best guide to land management decisions. Do you not find it heartening that redressing wrongs between peoples might kindle a synthesis of modern and ancient wisdom that could yield critical missing pieces to the riddle of how we should live? Isn't it humbling to see that restraint and forbearance in our use of the natural resources we never made and cannot replace might lead us to a more prosperous future? I am overwhelmed with gratitude when I fully see the glory of the other creatures and the unfathomable depth of the creation

we share, and believe with all my being that our best path into the future is through a compassionate, giving love affair with all of the creation.

Notes & Comments

The Truth Behind International Climate Agreements: Why They Fail and Why the Bottom-Up Model is the Way Forward. A Game Theory Analysis

Krishna Prasad*

* J.D. candidate, University of Colorado Law School.

Table of Contents

I. INTRODUCTION

Climate change is one of the biggest problems facing the world today. It is no longer just environmental groups who are warning of the threat. In 2014, the Pentagon released a report in which they determined that climate change was the greatest threat to national security, citing rising sea levels, more violent storms, and increased widespread droughts.[1] Major companies have also joined the call for action, with eighty-one companies signing the American Business Act on Climate Pledge, which calls for these companies to reduce their emissions and invest in clean energy.[2] The companies - including giants such as Apple, Walmart, Target, PG&E, and Monsanto - that have signed the pledge have over $3 trillion in revenue and a total market value of over $5 trillion.[3] Due to the enormity of the problem and the large voices calling for solutions, it is clear that it is time to take action.

The last time the world faced a major international environmental problem, countries banded together and took swift measures to solve the crisis. In 1974, a research paper by Sherwood Rowland and Mario Molina indicated that chlorofluorocarbons (CFCs), chemicals commonly used in aerosols, air conditioning, and refrigeration, were drifting into the upper atmosphere and damaging the ozone layer.[4] In 1987, just thirteen years after the Roland and Molina paper, the world came together to sign the Montreal Protocol, an aggressive international agreement designed to curb the use of CFCs and prevent further damage to the ozone layer.[5] Thanks to the success of the Montreal Protocol, the ozone layer has begun to increase after years of decreasing, and a potential extra two million cases of skin cancer by 2030 have not occurred.[6]

It was not long after the Montreal Protocol that the world began to

[1] Coral Davenport, *Pentagon Signals Security Risks of Climate Change,* THE NEW YORK TIMES (Oct. 13, 2014), http://www.nytimes.com/2014/10/14/us/pentagon-says-global-warming-presents-immediate-security-threat.html.

[2] The White House Office of the Press Secretary, FACT SHEET: White House Announces Commitments to the American Business Act on Climate Pledge (Oct. 19, 2015) (on file with author).

[3] *Id.*

[4] Cass. R. Sunstein, *Of Montreal and Kyoto: A Tale of Two Protocols*, 38 ENVTL. L. REP. 10566, 10567 (2008).

[5] *See* Montreal Protocol on Substances that Deplete the Ozone Layer, *opened for signature Sept. 16, 1987,* 1522 U.N.T.S. 29 (entered into orce Jan. 1, 1989) [hereinafter Montreal Protocol].

[6] Associated Press, *Earth's protective ozone layer is beginning to recover, a U.N. panel reports,* THE WASHINGTON POST (Sept. 15, 2014) https://www.washingtonpost.com/national/health-science/earths-protective-ozone-layer-is-beginning-to-recover-a-un-panel-reports/2014/09/15/a814ba9c-39c2-11e4-9c9f-ebb47272e40e_story.html.

turn its attention to climate change. In 1988, just one year after the signing of the Montreal Protocol, Dr. James Hansen, a scientist with NASA, told a congressional committee that carbon dioxide buildup was causing the global warming trend.[7] Shortly following Hansen's testimony, 165 countries signed the United Nations Framework Convention on Climate Change in 1992 (UNFCCC).[8] The UNFCCC is an international treaty which serves as a framework for international cooperation to fight climate change.[9] The UNFCCC called on the signatory countries to come together and create a binding international agreement to fight climate change.[10]

However, unlike the success of the Montreal Protocol, there has not been a successful strong international agreement on climate change to complement the UNFCCC. The United States famously never ratified the Kyoto Protocol and Canada dropped out in 2011, citing the fact that the goals of Kyoto were unreachable due to a lack of agreement between the United States and China.[11] Subsequent attempts to reach an agreement have not been successful either. The parties to the Kyoto Protocol, including the United States, will meet every year, unless otherwise specified, for a Conference of the Parties (COP).[12] The COP aims to add to the existing protocol and negotiate further deals.[13] Unfortunately, this negotiation has been unsuccessful, as evidenced by the 2000 climate talks, the 2009 Copenhagen Accord, and the 2014 talks in Lima, which all failed to produce an agreement.[14]

---

[7] Philip Shabecoff, *Global Warming Has Begun, Expert Tells Senate,* THE NEW YORK TIMES (June 24, 1988), http://www.nytimes.com/1988/06/24/us/global-warming-has-begun-expert-tells-senate.html?pagewanted=all.

[8] *See Generally* United Nations Framework Convention on Climate Change, *opened for signature June 4, 1992,* 1771 UNTS 107 (entered into force Mar. 21, 1994). [hereinafter UNFCCC]

[9] United Nations, *Background on the UNFCCC: The international response to climate change,* UNITED NATIONS FRAMEWORK ON CLIMATE CHANGE CONVENTION, http://unfccc.int/essential_background/items/6031.php (last visited March 9, 2016 11:47 AM).

[10] UNFCCC, *supra* note 8.

[11] *Kyoto Protocol Fast Facts,* CNN (March 30, 2016 1:12 PM) http://www.cnn.com/2013/07/26/world/kyoto-protocol-fast-facts/.

[12] United Nations, *Conference of the Parties*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/bodies/body/6383.php (last visited Feb. 24, 2016).

[13] *Id.*

[14] ICTSD, *COP 6: US-EU Differences Blamed for Failure of Climate Change Negotiations,* INTERNATIONAL CENTER FOR TRADE AND SUSTAINABLE DEVELOPMENT (Nov. 28, 2000), http://www.ictsd.org/bridges-news/bridges/news/cop-6-us-eu-differences-blamed-for-failure-of-climate-change-negotiations (arguing that the meeting failed to produce an agreement due to a number of disagreements between the US and the EU on vital issues); John Vidal, Allegra Sratton & Suzanne Goldenberg, *Low targets,*

Robert Putnam's two-level game theory perfectly explains why the Montreal Protocol succeeded, and why the Kyoto Protocol and other international climate agreements failed. Two-level game theory states that in any international negotiation, there is a second ongoing negotiation on the domestic level in order to determine what kind of agreement can ultimately be ratified by the relevant domestic legal procedures.[15] A two-level game theory analysis suggests that it is unlikely that there will ever be a strong international climate agreement because the United States would need two-thirds of the Senate to ratify any such agreement. Due to the Senate's current conservative tilt and the industry opposition to any strong international climate agreement, which in turn influences the Senate, the United States will only ever be able to ratify an international agreement if it is weak on emissions requirements. The inability of the United States to ratify a strong international climate agreement has helped shift the world towards a bottom-up approach[16] to climate change. In addition to the problems posed by Level II issues in the United States, this shift to a bottom-up approach has come about because it allows countries and regional governments to take quicker decisive action on climate change without having to wait for international negotiators to hammer out their differences.

The outcome of the recent COP in Paris exemplifies the global shift to a bottom-up world. Unlike the COP failures in 2000, 2009, and 2014, the meeting in Paris resulted in the signing of a substantial international climate agreement.[17] While some have criticized the deal for not doing

goals dropped: Copenhagen ends in failure, THE GUARDIAN (Dec. 18, 2009), http://www.theguardian.com/environment/2009/dec/18/copenhagen-deal (quoting a chief negotiator as saying the accord has "the lowest level of ambition you can imagine. It's nothing short of climate change scepticism in action. . ."); Geoffrey Lean, *How the Lima climate change talks failed,* THE TELEGRAPH (Dec. 15, 2014), http://www.telegraph.co.uk/news/earth/11293478/How-the-Lima-climate-change-talks-failed.html (arguing that the issues in climate change are just too big for negotiators to successfully confront and solve).

[15] *See* Robert D. Putnam*, Diplomacy and Domestic Politics: The Logic of Two-Level Games,* 42 INT'L ORG. 427 (1988).

[16] A top-down approach refers to a system where countries agree to international forms of organization and compliance, each party is expected to follow the agreement exactly, and a body that represents the member states of the agreement governs the agreement.) *See* Rafael Leal-Arcas, *Top-Down Versus Bottom-Up Approaches For Climate Change Negotiations: An Analysis,* 4 THE IUP J. OF GOVERNANCE AND PUB. POL'Y. 7, 8 n.5 (2011). Conversely a bottom-up approach refers to a system with no global form of compliance where various mitigation efforts happen on a city, community, state, or single national level. *See* Steve Rayner, *How to Eat an Elephant: A Bottom-Up Approach to Climate Policy,* 10 CLIMATE POL'Y 615, 617 (2010).

[17] Emily Gosden, *Paris Climate Agreement 'A Major Leap For Mankind'*, THE TELEGRAPH (Dec. 12, 2015), http://www.telegraph.co.uk/news/earth/paris-climate-change-conference/12047909/Paris-climate-change-agreement-a-major-leap-for-mankind.html.

enough, it is still a major achievement when compared to past climate agreements.[18] The Paris Agreement aims to limit each country's temperature rise to two degrees Celsius with a goal of reducing that number to one point five degrees Celsius.[19] The Paris Agreement was unique because it was the first international agreement to embrace the bottom-up approach, asking each country to submit their own plan to reduce emissions.[20] Each country pledges to follow their plan and update their goals in five years' time.[21] Furthermore, the Paris Agreement also acknowledges and supports state and regional governments (also known as subnational governments) efforts to fight climate change.[22] The support for subnational governments goes beyond mere words. The Paris Agreement makes it easier for less developed countries to secure access to funds from initiatives like the Green Climate Fund, and thus aids local governments in building resilience to climate change[23] and funding policies and initiatives in the fight against climate change.[24]

In light of the pledge and review decision at the COP 21 in Paris, this paper will look at how the world transitioned to a bottom-up approach and why it is the best way forward. This journey will begin by analyzing what Robert Putnam's two-level game theory is, what it means, how it works, and how it can explain the difficulty in securing an international climate agreement. Next, it will look at the negotiations and success of the Montreal Protocol compared to the negotiations and subsequent failure of the Kyoto Protocol using the two-level game theory to explain why the Montreal Protocol succeeded and the Kyoto Protocol failed. Finally, the analysis will conclude by discussing why the two-level game theory means that a bottom up, pledge and review approach is

[18] *Id.*

[19] Fiona Harvey*, Paris climate change agreement: the world's greatest diplomatic success,* THE GUARDIAN (Dec. 14, 2015), http://www.theguardian.com/environment/2015/dec/13/paris-climate-deal-cop-diplomacy-developing-united-nations.

[20] Natasha Geiling, Todd Stern: After The Paris Climate Agreement, Countries Of The World 'Are Not Going Back', THINK PROGRESS (Dec. 15, 2015), http://thinkprogress.org/climate/2015/12/15/3732172/todd-stern-paris-climate-agreement/.

[21] *Id.*

[22] See Paris Agreement to the United Nations Framework Convention on Climate Change, opened for signature Apr. 22, 2016, U.N. Doc. FCCC/CP/2015/L.9 (Dec. 12, 2015) (stating the parties to the Agreement intend to "mobilize stronger and more ambitious climate change action by all Parties and non-Party stakeholders, including . . . subnational authorities").

[23] David Jackson, COP21 Paris Agreement Recognizes Role of Subnational Levels of Government in Strengthening Resilience to Climate Change, UNCDF (Dec. 14, 2015), http://www.uncdf.org/en/cop21-paris-agreement-recognizes-role-subnational-levels-government-strengthening-resilience-climate.

[24] *Id.*

the best way forward in order to ensure that there is concrete action taken to mitigate the effects of climate change.

II. ROBERT PUTNAM'S TWO-LEVEL GAME THEORY

Robert Putnam's two-level game theory is an examination of international negotiations and the criteria needed to successfully reach an international agreement.[25] The theory centers on the idea that there are two levels of negotiations - the international and subnational level - in any international negotiation, and that every party involved in a negotiation – at both the international and subnational level - has a range of acceptable outcomes known as a win-set.[26] Additionally, in the context of a climate change agreement, it is important to focus on the attitudes of the four largest emitters of greenhouse gasses (China, the USA, the European Union, and India) towards mandatory emissions cuts.[27]

A. Level I and Level II Negotiations

A central premise of Putnam's two-level theory is that there are in fact two levels of negotiations going on during any international negotiation:[28] international and domestic.[29] The international negotiations are the current negotiations going on between two countries and are considered Level I negotiations.[30] These Level I negotiations are the more traditional talks that people think about when considering international treaties and agreements. Level I negotiations include, for example, the 2014-2015 negotiations between the United States and Iran over Iran's nuclear program or the negotiations between the United States, Canada, and Mexico that created NAFTA. Many believe that Level I negotiations are the only component required to enter into a successful international treaty. However, as two-level game theory demonstrates, there is a second layer of domestic negotiations taking place underneath an international deal.

These domestic negotiations take place between the Level I party responsible for negotiating an international agreement – the executive branch, in the context of the United States - and the Level II institutions

[25] Putnam, *supra* note 15.

[26] *Id.* At 434-437.

[27] Mengpin Ge, Johannes Friedrich & Thomas Damassa, *6 Graphs Explain the World's Top 10 Emitters,* WORLD RESOURCES INST. (Nov. 25, 2014), http://www.wri.org/blog/2014/11/6-graphs-explain-world%E2%80%99s-top-10-emitters.

[28] Putnam, *supra* note 15, at 433-34.

[29] *Id.*

[30] *Id.* At 434, 436.

responsible for ratifying the agreement – the Senate.[31] The Level II institutions are often the formal procedures needed for ratification, such as a two-thirds vote in the Senate, but can also include any formal or informal process required to endorse an international deal.[32] A wide array of sources - from governmental and public opinions to industry support for or opposition to a teaty - influence Level II negotiations.[33] Furthermore, the subsequent failure to ratify a treaty, either because a party chose to opt out or was unable to convince the Level II institutions to accept the deal, can have a profound effect on future negotiations between two parties, as it diminishes trust in the opposing party and hurts cooperation.[34] This problem is further compounded by the fact that most Level I negotiators are ignorant to the political realities influencing the Level II negotiations and institutions in other countries. [35]

In the United States, the president would be conducting the Level I negotiations at the international level while simultaneously conducting Level II negotiations with the United States Senate, because the Senate must ratify any treaty by a two-thirds vote. Furthermore, in a representative democracy, the affected industries and the public at large tends to be heavily involved in Level II negotiations.[36] For example, if the United States were negotiating a treaty with Canada on the trade of agricultural products, the executive branch would negotiate with Canada but also have to negotiate with the US Senate, which in turn is influenced by the agricultural industry, to find a deal that is acceptable to all parties. Level II negotiations then lead to an acceptable deal range, or win-set.

B. Win-Sets

In the most basic sense, a win-set is the range of possible final terms that a country can accept in an international negotiation and still manage to get the treaty ratified.[37] The desires of a country's Level II institutions and the affected industry heavily influence the range of a country's win-set.[38] In terms of getting a deal done, larger win-sets are better because they give more latitude to the international negotiators and therefore increase the chances of finalizing a deal.[39] However, having a larger win-

[31] *Id.* at 436.
[32] *Id.*
[33] *Id.*
[34] *Id.* at 438-39.
[35] *Id.* at 452.
[36] *Id.* at 433 ("During my tenure as Special Trade Representative, I spent as much time negotiating with domestic constituents (both industry and labor) and members of the U.S. Congress as I did negotiating with our foreign trading partner").
[37] *Id.* at 437.
[38] *Id.* at 437, 441-42.
[39] *Id.* at 437-38.

set is not always the most ideal scenario during negotiations. Countries with smaller win-sets can use the threat of no ratification, and therefore no treaty, to push the deal in a direction more favorable to their interests.[40] Therefore, the final treaty is more likely to resemble something close to what the country with a small win-set had desired.[41]

For example, if two countries, Country A and Country B, were attempting to negotiate a nuclear disarmament treaty, the extent of the treaty would depend on the size of each country's win-set. If Country A was fully committed to beginning the disarmament process and living in a world free of nuclear weapons and Country B was not committed to disarmament, the outcome of the treaty would likely be minimal disarmament. This is because Country A's win-set would be larger - any sort of disarmament treaty would begin the push to a nuclear weapon free world - while Country B's win-set would be smaller, as they would not favor a major disarmament deal and only be looking to agree to a miniscule amount of disarmament. Under these conditions, Country B would be able to exploit the latitude granted to Country A negotiators by virtue of their larger win-set and ultimately negotiate an agreement that included a limited amount of disarmament. The size of win-sets essentially correlates to leverage. The less likely it is that a country is willing to agree to a treaty (smaller win-set) the more leverage that country has in dictating terms in negotiations with countries who are more willing to agree to a treaty (larger win-set).

Three factors affect the size of a country's win-set: Level II preferences and coalitions, Level II institutions, and the strategies of Level I negotiators.[42] This section will briefly examine how each factor affects the size of a country's win-set.

1. Level II Preferences and Coalitions

In terms of Level II preferences, when the benefits/costs of an international agreement are high, the industry whose interests are affected will end up playing a very active role in the ratification process and will exert special influence over it.[43] When looking at how the industry's opinions will affect a Level I win-set, one must consider their preference for any agreement versus a "no-agreement" scenario.[44] If the relevant industry suffers no negative effects in a no-agreement scenario but would suffer some negative effects if an agreement occurs, then the

[40] *Id.* at 440.
[41] *Id.*
[42] *Id.* at 441-42.
[43] *Id.* at 445.
[44] *Id.* at 442.

win-set will be smaller.[45] For example, if the United States was negotiating an international agreement which would lead to price controls on pharmaceutical drugs, the pharmaceutical industry would oppose the deal because a no-agreement scenario, i.e., no price controls, would be preferable to the outcome of the negotiations. A no-agreement preference would lead to a smaller win-set for the United States, likely one that would not mandate price controls. An industry's preference for a no-agreement scenario can be one of the most important factors in determining not only a country's win-set but also the likelihood of international negotiations to result in a treaty. If the Level II institutions and coalitions of negotiating countries, especially major countries, prefer or are not adverse to a no-agreement scenario, there is no incentive to compromise in a negotiation. This lack of incentive will lead to a deal with weak controls, or to no deal at all. Therefore, in relation to the climate change world, for a strong deal to occur, it is important that none of the major parties' Level II institutions prefer a no-agreement scenario.

2. Level II Institutions

The nature of Level II institutions also plays a significant role in the size of a country's win-set. [46] The term "Level II institutions" refers to the ratifying body in each country.[47] The more complicated a ratification process is, the smaller a country's win-set will be.[48]Dictatorships typically have larger win-sets due to the fact they will not need to get public approval for a treaty.[49] The United States, however, will always have a smaller win-set in any international negotiation due to the fact that ratification requires a two-thirds vote in the Senate.[50] Senate ratification is quite a complex process and will usually involve approval from both political parties, as well as endorsement from the major organizations and industries affected by the deal.[51]

3. Level I Negotiators and Strategies

Level I negotiators and their strategies also play a role in the size of a country's win-set. [52] A Level I negotiator can increase the chance of ratification, thereby increasing his win-set, by offering incentives to the Level II institutions to help the ratification process.[53] For example, in the United States, if the president wished to increase chances of ratification,

[45] *Id.*
[46] *Id.* at 448.
[47] *Id*
[48] *Id.* at 436, 448.
[49] *Id.* at 448.
[50] *Id.*
[51] *See Id.* at 448. (sources supports, but does not directly state author's assertion)
[52] *Id.* at 450.
[53] *Id.*

they could offer senators projects, such as public works projects, or support for those senators' states in order to 8bring them on board.[54] Furthermore, if a Level I negotiator enjoys immense popularity in their country, then ratification of any negotiated deal by the Level II institution is more likely, which serves to increase the country's win-set.[55] For example, in the United States, it is likely that President George W. Bush would have had an easier ratification process, thereby a larger win-set, for any international agreement he negotiated after the terrorist attacks of 9/11 due to his high popularity and approval ratings.[56] While the popularity of negotiators and the use of incentives can increase chances of ratification for an international agreement, they are unlikely to affect the chances of passing an international climate agreement in the United States. There are two reasons for this: first, incentives, such as public work projects, probably are not enough to overcome strong industry opposition,[57] and second, due to the massive partisan divide in the United States, it is unlikely that any president will enjoy a high enough popularity rating to obtain Senate ratification of a climate agreement.[58]

III. APPLYING TWO-LEVEL GAME THEORY TO INTERNATIONAL CLIMATE AGREEMENTS: WHY MONTREAL SUCCEEDED AND KYOTO FAILED

The success of the Montreal Protocol and the failure of the Kyoto Protocol provide case studies for applying the two-level game theory to

[54] *Id.*

[55] *Id.* at 451.

[56] *Presidential Approval Ratings -- Gallup Historical Statistics and Trends, GALLUP (Nov. 14, 2014 1:21 PM), http://www.gallup.com/poll/116677/presidential-approval-ratings-gallup-historical-statistics-trends.aspx.*

[57] : See Douglas Fischer, "Dark Money" Funds Climate Change Denial Effort, SCIENTIFIC AMERICAN (Dec. 23, 2013), http://www.scientificamerican.com/article/dark-money-funds-climate-change-denial-effort/ (stating that $558 million dollars has been given to climate change denial groups between 2003 and 2010); Food, Fossil Fuels, and Filthy Finance, OXFAM INTERNATIONAL (Oct. 17, 2014), https://www.oxfam.org/sites/www.oxfam.org/files/file_attachments/bp191-fossil-fuels-finance-climate-change-171014-en.pdf (finding that United States fossil fuel industry spends approximately $160 million a year on lobbying).

[58] See Political Polarization in the American Public, PEW RESEARCH CENTER (June 12, 2014), http://www.people-press.org/2014/06/12/political-polarization-in-the-american-public/ (finding that politically active Democrats and Republicans are becoming more and more ideologically opposed and polarized).

the world of international climate agreements because both agreements dealt with pressing international environmental problems - ozone at Montreal and climate change at Kyoto - that required collective and coordinated international action to solve.

The Montreal Protocol dealt with substances that deplete the ozone and was a success because it halted the use of these substances and has slowly reversed the damage to the ozone layer.[59] The Kyoto Protocol was the world's first attempt to deal with the problem of climate change and is widely considered a failure due to the fact that the United States failed to ratify the treaty and due to its lack of binding emissions cuts on developing countries such as China and India.[60] Isolating each protocol to examine what led up to the negotiations and then applying two-level game theory to the proceedings gives a clear and concrete explanation as to why the oft-used top-down iteration of international climate agreements is unlikely to succeed.

A. Montreal Protocol Success

In 1974, research surfaced which showed the world that CFCs were endangering and deteriorating the earth's protective ozone layer.[61] The CFCs in question were mainly aerosols used in air conditioning, refrigeration, packaging, and solvents in cleaning.[62] It was clear that the world needed to take immediate action to solve the problem, and by 1985, twenty countries had signed the Vienna Convention, which established a framework for negotiating a protocol to deal with CFCs.[63] In 1987, the world came together to negotiate and sign the Montreal Protocol.[64] Thirty years after the signing of the Montreal Protocol, there is evidence that it has succeeded in reversing damage done to the ozone layer and therefore avoiding a massive health crisis.[65] In order to

[59] Associated Press, *supra* note 6.

[60] Steven Gelis, Kyoto Protocol, 10 years later: Did deal to combat greenhouse emissions work and what of its future?, NATIONAL POST (Feb.14, 2015), http://news.nationalpost.com/news/kyoto-protocol-10-years-later-was-the-deal-to-combat-greenhouse-emissions-successful-and-what-of-its-future (stating that the Kyoto Protocol was flawed from the beginning, in part because the United States never ratified it and due to its lack of emissions cuts on China and India).

[61] Sunstein, *supra* note 4.

[62] Peter M. Morrisette, The Evolution of Policy Responses to Stratospheric Ozone Depletion, 29 U.N.M. NAT. RESOURCES J. 793, 795 (1989).

[63] *See generally* Vienna Convention for the Protection of the Ozone Layer, *opened for signature* March 22, 1985, 26 I.L.M. 1516. (entered into force Sept. 22, 1998).

[64] *See* Montreal Protocol, *supra* note 5.

[65] Associated Press, *supra* note 6. Ozone levels climbed by four percent over a period of thirteen years from 2000 and 2013. The United Nations has estimated that without the Montreal Protocol there would have been an extra 2 million cases of skin cancer by 2030.

understand why the Montreal Protocol negotiations worked so successfully, it is necessary to examine the win-sets of the United States and the European Union (then, the European Community) in both the lead up to the negotiations and during the actual negotiations themselves. Because developing countries were not present at the negotiations and because the negotiations were mainly between the United States and the European Community, these are the only two entities that warrant examination in this case-study.[66]

1. Pre-Negotiation Win-Sets

In the 1970s the United States accounted for almost fifty percent of the world's CFC use.[67] In the years immediately following the 1974 study, news coverage of the ozone depletion caused American consumers to cut their demand for aerosol sprays containing CFCs by more than half.[68] The United States Congress also responded to the changing political winds and amended the Clean Air Act to allow the EPA to better regulate CFCs.[69] Following the Clean Air Act amendment, in 1978, the EPA used the Toxic Substances Control Act[70] to ban CFCs from use in nonessential applications of aerosol propellants.[71] This had the effect of reducing American contribution to ozone depletion by about ninety-five percent.[72] While the American chemical industry did lobby against aggressive controls,[73] the United States was compelled to act due to the overwhelming evidence that public health was in danger and therefore immediate action was preferable.[74]

Europe, on the other hand, was not ready to take such quick and drastic measures. The general feeling in Europe was that the science behind ozone depletion did not warrant such drastic measures.[75] Furthermore, unlike their American counterparts, the European public was indifferent to the issue and were not putting pressure on their

[66] Moments in U.S. Diplomatic History: Negotiating the Montreal Protocol on protecting the Ozone Layer, ASSOCIATION FOR DIPLOMATIC STUDIES AND TRAINING (last visited Oct. 11, 2015), http://adst.org/2014/09/negotiating-the-montreal-protocol-on-protecting-the-ozone-layer/

[67] Sunstein, *supra* note 4.

[68] *Id.*

[69] Cass R. Sunstein, Montreal and Kyoto, A Tale of Two Protocols 9 (Univ. of Chi. Law Sch. Olin Law & Econ. Working Paper No. 302, 2006), available at http://www.law.uchicago.edu/files/files/302.pdf.

[70] Toxic Substances Control Act, Pub. L. No. 94-469, 90 Stat. 2003 (1976).

[71] Sunstein, *supra* note 69.

[72] *Id.*

[73] *Id.* at 10

[74] Sunstein, *supra* note 4.

[75] Sunstein, *supra* note 69 at 10.

governments to act.[76] Finally, and most importantly, European industry was strongly opposed to taking regulatory action. A UK company, Imperial Chemical Industries, was one of the larger CFC producers in the world and led the charge in Europe in fighting strong regulatory measures.[77] The United Kingdom was undoubtedly influenced by Imperial Chemical Industries' position and played a large role in shaping the European Community's early "wait and learn" response.[78]

In terms of win-sets for a negotiation, the above circumstances would point towards a weaker deal that the Europeans would favor. The United States would have had a larger win-set in the lead-up to the negotiations as they had already proven that they were willing to take the action that the American public demanded. Some may argue that this should have had the effect of reducing the American win-set, because they would demand equally strong responses from other parties; however, this would be an incorrect assessment. Because the United States had taken action already, they would not accept a no-agreement scenario. Instead, some sort of mandatory cuts for the Europeans would be preferable. Because the United States would not accept a no-agreement scenario, the United States' win-set would be larger, especially compared to the Europeans, since the United States would favor any sort of mandatory cuts. A larger win-set would allow the United States to be pushed in negotiations, especially by the Europeans' comparatively small win-set.

Unlike the United States, the Europeans had a very small win-set due to widespread industry opposition and the lack of public outcry. The industry in Europe strongly opposed regulations and would have preferred the no-agreement scenario, further shrinking the European win-set. Therefore, it is likely that at the time the only deal Europe would have accepted would have involved no mandatory cuts, or very miniscule cuts. This smaller win-set would have given Europe the advantage going into negotiations.

Given the circumstances and the win-sets at the time, one would expect the Montreal Protocol to represent something close to what the Europeans wanted: no mandatory cuts, and if any were required, they would be minimal. However, ultimately, the Montreal Protocol proved to be a strong agreement. Changes in the political and economic realities in the lead up to the negotiations, which altered the United States' and Europe's win-sets, explain why the Montreal Protocol ultimately proved to be a strong deal.

[76] *Id.*
[77] *Id.*
[78] *Id.* at 13.

2. Negotiating the Montreal Protocol

In the lead-up to the final Montreal Protocol negotiations, the European Community favored a simple freeze of CFC production at 1986 levels.[79] The United States favored a freeze followed by a ninety-five percent cutback over the next ten to fourteen years.[80] In a two-level game analysis, one would expect the final deal to either only have a freeze, or a freeze and minimal cut-backs, due to the comparative sizes of Europe's and the United States' win-sets. However, in reality, the final deal called for a freeze and then a 50 percent cutback by 1998.[81] A reduction in the American win-set and an expansion of the European win-set explains why the final agreement was much stronger than what the Europeans initially desired.

Change in industry preference helped reduce the American win-set. In 1986, one year before the final protocol negotiations, DuPont and other American chemical companies had developed safe alternatives to CFCs.[82] Now any deal which involved a significant reduction of CFC use would massively favor the American industry, which in turn led the industry to prefer a strong agreement.[83] Generally, the United States' strong preference for a deal would seem to make their win-set larger because any sort of agreement involving a freeze of CFC production would be more favorable to the industry than a no-agreement scenario. However, in the lead-up to the 1987 negotiations, it became increasingly clear that the American industry favored a strong aggressive international deal, one that included a broad phase-out of CFC use, and that prevented manufacturers from moving CFC production to non-signatory states.[84] Therefore, the industry helped shrink the American win-set as it could derive a massive commercial benefit from a strong agreement, and it continued to apply pressure to reach such an agreement.

Politics also played a role in shrinking the American win-set. In 1987, the United States Senate, the Level II institution responsible for ratification, by a vote of 80-2 passed a resolution asking President Regan to take aggressive action to deal with the CFC problem and protect the ozone layer.[85] The resolution called for the President to seek an international agreement with an immediate freeze on CFC production

[79] Morrisette, *supra* note 62 at 810.
[80] *Id.*
[81] Sunstein, *supra* note 4 at 10568.
[82] Sunstein, *supra* note 69 at 12.
[83] *Id.*
[84] *Id.*
[85] RICHARD E. BENEDICK, OZONE DIPLOMACY: NEW DIRECTIONS IN SAFEGUARDING THE PLANET 62 (Harvard Univ. Press 1991).

and insisted on no less than a fifty percent phase out of CFC use.[86] The passage of the resolution signaled another shrink in the American win-set. The fact that the Senate resolution called for at least a fifty percent phase out indicated that a less aggressive deal was now incompatible with the United States' position.

President Regan reinforced the desire for a strong deal when he sent a cable to the chief US negotiator, Richard Benedick, encouraging him to maintain a strong U.S. negotiating position.[87] These political maneuverings had the effect of reducing the size of the American win-set because now the negotiators had a mandate to seek a deal that contained no less than a fifty percent phase out. However, shrinking the American win-set alone should not have been enough to negotiate the final Montreal Protocol. Due to the original no-agreement preference of the Europeans, a successful Montreal Protocol required the growth of the European win-set.

While the United States was reducing their negotiating win-set, the European Community's win-set was actively growing. There were two major developments that helped expand the European Community's win-set: new scientific discoveries regarding the ozone layer and increased public pressure. In 1985 and then again in 1987, new findings indicated that an ozone hole above Antarctica had grown to the size of the United States.[88] This discovery softened the European stance when it came to mandatory cut-backs:[89] the danger of the ozone hole caused European environmental groups to pressure their governments for a deal.[90]

In the lead-up to the Montreal Protocol negotiations in 1987, the chief U.S. negotiator spoke multiple times, including to West German and Austrian newspapers, calling the European position on the deal "ridiculous. . . . and totally unacceptable."[91] These statements were important to help galvanize public support in Europe for a strong deal and put further pressure on the European negotiators to negotiate such an agreement.[92] A final reason that the European Community accepted a 50 percent cut back compromise is that the cutback was ultimately easier for their industry to achieve due to the fact that CFC substitutes in aerosols

[86] Sunstein, *supra* note 69 at 13.

[87] Benedick, *supra* note 85 at 73. For information on who the chief negotiator was *see* Richard Benedick, *Science, diplomacy, and the Montreal Protocol,* THE ENCYCLOPEDIA OF EARTH (Jun. 12, 2007 3:57 PM), http://www.eoearth.org/view/article/155895/ (Information on the chief negotiator).

[88] Sunstein, *supra* note 69 at 11.

[89] Morrisette, *supra* note 62 at 811.

[90] *Id.*

[91] BENEDICK, *supra* note 85 at 71.

[92] *Id.*

were readily available by this time.[93] Scientific developments regarding the state of the ozone layer combined with public pressure to address the issue had the effect of enlarging the European win-set. Rather than accepting simply a freeze or a no-agreement scenario, European negotiators were open to mandatory phase outs. This change in the European win-set ultimately allowed for a the parties to negotiate a strong deal in Montreal.

3. Conclusion

Today, nearly thirty years after the signing of the Montreal Protocol, it has been a resounding success. The ozone layer is regaining what it lost and risk of skin cancer has lowered significantly.[94] Successful negotiations on a strong deal occurred because the win-sets of the two main negotiating partners, the United States and the European Community, eventually aligned. For the United States, three different factors - public health concerns, industry support for a deal, and Senate preference for an agreement - combined to create a smaller win-set favoring a strong protocol. Of course, the American win-set was not so small as to allow no latitude: the United States did not prefer a no-agreement scenario and did not steadfastly stand by their original call for a ninety-five percent phase out. On the European side, an originally small win-set favoring no deal or only a freeze of CFC production at 1986 levels was eventually expanded, causing them to lose any preference for a no-agreement scenario, due to scientific advancement and public pressure. Ultimately, the United States and Europe successfully negotiated the Montreal Protocol because neither entity's Level I or II institutions preferred a no-agreement scenario and both entities had large enough win-sets to allow them latitude to negotiate successfully. Following the success of the Montreal Protocol, there were hopes that the world would reach a similar deal to address the climate change problem.[95] However, that hope quickly evaporated, due to the failure to negotiate a strong international climate agreement in Kyoto.

B. Kyoto Protocol Failure

Contrary to common perception, scientists knew of climate change long before the release of Al Gore's *An Inconvenient Truth*. Physicist John Tyndall first theorized the concept of climate change in 1864.[96]

---

[93] James H. Maxwell & Sanford L. Weiner, *Green Consciousness or Dollar Diplomacy? The British Response to the Threat of Ozone Depletion,* 5 INT'L ENVTL. AFF. 19, 31 (1993).

[94] Associated Press, *supra* note 6.

[95] BENEDICK, *supra* note 85 at 208-210.

[96] Steven Sherwood, Science controversies past and present, 64 PHYSICS TODAY

Thirty-two years later, in 1896, fellow physicist Svante Arrhenius expanded on Tyndall's research, predicting that in the future there would be warming caused by the burning of coal.[97] In 1988, ninety-two years after Arrhenius' prediction and one year after the successful Montreal Protocol negotiations, Dr. James Hansen of NASA stood before the Senate Energy and Natural Resources Committee and stated that the 130 year global warming trend was definitively attributable to human activity.[98] Four years later, in 1992, countries from all over the world negotiated and signed the UNFCCC, which called for global action on climate change.[99] Five years later, and with some maneuvering in between, many countries, including the United States, signed the Kyoto Protocol.[100]

Despite the fact that the United States signed the protocol, President Clinton never put it forward for ratification: he knew such ratification was impossible, due to the stance of the Senate.[101] President Bush ultimately withdrew the United States from Kyoto in 2001, citing the exemption of developing countries and the Kyoto Protocol's potential to harm the U.S. economy as the reasons he opposed the treaty.[102] For any international agreement to work and make meaningful emissions cuts, it needs the United States and China to ratify the deal, since these countries have the highest carbon emissions.[103] While the European Union still aims to comply with Kyoto,[104] it has not been successful in reducing global greenhouse gas emissions due to the lack of binding cuts on China

39, 40 (2011).

[97] *Id.*

[98] Shabecoff, *supra* note 7.

[99] UNFCCC *supra* note 8.

[100] Kyoto Protocol to the United Nations Framework Convention on Climate Change, opened for signature Mar. 16, 1998, U.N. Doc. FCCC/CP/1997/7/Add.1, 37 I.L.M. 22 (entered into force Feb. 16, 2005) [hereinafter Kyoto Protocol].

[101] Peter Saundry, Kyoto Protocol and the United States, THE ENCYCLOPEDIA OF EARTH (Feb. 26, 2013), http://editors.eol.org/eoearth/wiki/Kyoto_Protocol_and_the_United_States.

[102] Julian Borger, Bush kills global warming treaty, THE GUARDIAN (Mar. 29, 2001, 3:28 PM) http://www.theguardian.com/environment/2001/mar/29/globalwarming.usnews.

[103] See To succeed, international climate negotiations must be tailored to US and China, CARBON BRIEF (Nov. 11, 2013) http://www.carbonbrief.org/to-succeed-international-climate-negotiations-must-be-tailored-to-us-and-china (stating that any successful international climate agreement will need the US and China to agree to it). For emissions data see Each Country's Share of CO2 Emissions, UNION OF CONCERNED SCIENTISTS http://www.ucsusa.org/global_warming/science_and_impacts/science/each-countrys-share-of-co2.html#.VhqadXpViko (last updated Nov. 18, 2014).

[104] See generally Tracking progress towards Kyoto and 2020 targets in Europe, EUROPEAN ENVIRONMENT AGENCY (Nov. 7 2010), available at http://www.eea.europa.eu/publications/progress-towards-kyoto.

and the lack of ratification on the part of the United States.[105]

Due to the manner in which the Kyoto Protocol negotiations unfolded over the course of five years, from the UNFCCC signing to the final negotiations in 1997, the protocol makes for the perfect case study on the difficulties that still exist today in trying to find a strong international climate agreement. Applying Putnam's two-level game theory to the Kyoto Protocol negotiations reveals the multitude of hurdles that stand in the way of any international climate agreement. In order to fully understand why Kyoto did not work, it is important to begin with the background before the negotiations, namely the UNFCCC, the Berlin Mandate, and the Byrd-Hagel resolution.

1. Framing the Kyoto Protocol: The UNFCCC, the Berlin Mandate, and the Byrd-Hagel Resolution

The process for negotiating the Kyoto Protocol began with the signing of the UNFCCC in 1992 at a United Nations Conference on Environment and Development in Rio de Janeiro.[106] The United States signed the UNFCCC on June 12, 1992 and ratified it October 15, 1992.[107] The purpose of the convention was to create a framework for future international climate change negotiations.[108] The convention called for the parties to negotiate a protocol that would stabilize emissions levels of greenhouse gases at 1990 levels by the year 2000.[109] The fact that the United States ratified the UNFCCC is not significant because the convention does not mandate any binding emissions cuts on the parties.[110] So, while the United States signed and ratified the UNFCCC, win-sets and Level II institutions' preferences did not play a factor because there were no legal consequences for affected actors.

In 1995, three years after the signing of the convention, the parties to the convention (called the conferences of parties, or COP) met for the

[105] Gelis, supra note 60 (stating that the Kyoto Protocol was flawed from the beginning, in part because the United States never ratified it and due to its lack of emissions cuts on China and India).

[106] UNFCCC, supra note 8. For location of conference see United Nations Framework Convention on Climate Change, SCIENCE DAILY (Nov. 18, 2015, 7: 42 PM) http://www.sciencedaily.com/terms/united_nations_framework_convention_on_climate_change.htm

[107] Status of Ratification of the Convention, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/essential_background/convention/status_of_ratification/items/2631.php (last visited Nov. 18, 2015).

[108] *See generally* UNFCCC, *supra* note 8.

[109] UNFCCC, *supra* note 8 at art. 4 (2)(b).

[110] UNFCCC, *supra* note 8.

first time in Berlin.[111] The purpose of the COP was to begin negotiations and the procedures required to move towards the implementation of the directives laid out in the UNFCCC.[112] The outcome of the Berlin COP meeting was a document called the Berlin Mandate.[113] This mandate recognized that developing countries have a right to grow economically and that developed countries were responsible for the majority of "historical and current greenhouse gas emissions".[114] Thus, the mandate stated that when the parties come together to negotiate a final protocol, they would not impose any binding emissions cuts on developing countries.[115] This mandate reinforced the view of developing countries like China and India, who argued that the developed countries created the climate change problem, and developing countries should not have to stall their economic growth when the wealthy developed nations had benefited for years from greenhouse gas emitting technology.[116]

The Berlin Mandate did more than just eliminate the developing countries' win-sets. The mandate also had the effect of drastically shrinking the American win-set. In June of 1997 the United States Senate—in response to the Berlin Mandate—passed the Byrd-Hagel Resolution.[117] The Byrd-Hagel Resolution, which passed by a vote of 95-0, stated in no uncertain terms that the United States should not sign any agreement that required mandatory emissions cuts for the United States without also mandating emissions cuts for developing countries; in addition, the resolution stated that no mandatory emissions cuts should be accepted if such cuts would harm the United States' economy.[118] This resolution, therefore, created an extremely small win-set for the United States: its Level II institution had sent a clear message that it would not accept cuts unless developing countries also accepted cuts. Since developing countries were not going to accept cuts due to the Berlin Mandate and their own miniscule win-sets, the only way the Senate would accept a treaty was if the United States was not given any mandatory emissions requirements. The Senate had made it clear that they did not mind a no-agreement scenario (and may actually have preferred it), thus severely minimizing the likelihood that the world

[111] Conference of the Parties (COP), UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/bodies/body/6383.php (last visited Nov. 18, 2015).

[112] *Id.*

[113] *See* United Nations Framework on Climate Change, Conference of the Parties, Berlin, Ger. *The Berlin Mandate,* U.N. Doc. /CP/1/CP.1 (1995).

[114] *Id.* at art. (I)(1)(d).

[115] *Id*. at art. I(1)(d) and art. II(1)(b).

[116] Sunstein, *supra* note 4 at 21.

[117] S. Res. 98, 105th Cong. (1997).

[118] *Id.* at 1(A).

could negotiate a successful deal at Kyoto.

2. The Kyoto Protocol Negotiations

The final negotiations over the Kyoto Protocol took place in December of 1997 and the world adopted the final protocol on December 11, 1997.[119] These final negotiations were the conclusion of a process that began with the first COP meeting in Berlin in 1995.[120] Due to the Byrd-Hagel resolution, the United States entered the final negotiations with a very small win-set. The United States' win-set would only allow them to accept an agreement that either called for equivalent emissions cuts from developing countries like China and India, or an agreement that would call for no mandatory emissions cuts for the United States. Conventional wisdom would suggest that due to the United States' small win-set, the final protocol should resemble something that would fit in this win-set. The outcome, however, was the opposite. The Kyoto Protocol called for the United States to reduce emissions by seven percent below 1990 levels and required no mandatory emissions cuts for developing nations.[121]

Unlike the Montreal Protocol, the Kyoto Protocol did not feature two negotiating parties' continuously evolving win-sets eventually meeting and therefore striking a deal. Instead, the Kyoto Protocol featured a multinational bargaining process in which many parties had small win-sets which were opposed to the negotiating constraints imposed on the United States by the Byrd-Hagel resolution. Unlike the United States—who had a small win-set favoring no heavy action thanks to the Senate—major international negotiating parties, such as the European Union (EU), had small win-sets favoring strong action on international climate change.[122]

There are three related explanations for the outcome of the Kyoto Protocol, which seemingly ignored the win-set of one of the highest

[119] *Making those first steps count: An Introduction to the Kyoto Protocol,* UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/essential_background/kyoto_protocol/items/6034.php (last visited Feb. 13, 2016).

[120] *Towards a Climate Agreement,* UNITED NATIONS, http://www.un.org/climatechange/towards-a-climate-agreement/ (last visited Feb. 13, 2016).

[121] Kyoto Protocol, *supra* note 100 at Annex B.

[122] On average European member states felt ecologically vulnerable to the effects of climate change, believed that abatement costs wouldn't be high, and that their industry was ready to capitalize on an increased demand for clean energy. These factors would mean that European member states would try to push climate change action forward. See DETLEF F. SPRINZ & MARTI WEIß, DOMESTIC POLITICS AND GLOBAL CLIMATE POLICY IN INTERNATIONAL RELATIONS AND GLOBAL CLIMATE CHANGE 67, 80 (Urs Luterbacher & Detlef F. Sprinz eds., 2001).

emitters and a party crucial to any hope of a successful protocol. First, the international support for a strong climate deal was too much for the United States to overcome, no matter how small their win-set was. Second, the international community had a fundamental misunderstanding about domestic politics in the United States and the meaning of the Byrd-Hagel resolution. Finally, the United States Senate would not ratify any internationally supported climate change protocol because industry opposition was too strong.

a. International Support for a Strong Climate Change Deal Overcame the United States' Win-Set

Throughout the Kyoto Protocol negotiations, there was strong international support for a deal that required heavy emissions cuts for developed countries. The G77, an intergovernmental group of developing countries, desired uniform emissions cuts by at least fifteen percent for all developed countries.[123] The EU also favored strong action and a high reduction of greenhouse gas emissions.[124] Finally, the Association of Small Island States - an association of countries most vulnerable to the effects of climate change - were pushing for deep emissions cuts by developed countries.[125] These negotiating positions demonstrate that on some level, that the international community, like the United States, also had a small win-set, albeit one favoring a strong international deal. The competing small win-sets only made it harder for the United States to negotiate an agreement favorable to the Byrd-Hagel resolution.

The consolidation and integration of the EU allowed the Europeans to match the United States' bargaining power, thus making life more difficult for the US negotiators. The EU had gained influence and bargaining power in international negotiations and politics over the years thanks to strategic delegation by member countries.[126] Because membership in the EU required accepting any treaty to which the EU was a party, the EU was able to avoid the domestic constraints of each of their member countries' Level II institutions.[127] This group model also gave the EU a stronger bargaining position than each individual country would have.[128] The EU was then able to combine their desire for a strong

[123] Diana Liverman, *Conventions of climate change: constructions of danger and the dispossession of the atmosphere,* 35 J. OF HIST. GEOGRAPHY 279, 291 (2009).

[124] Elena McLean & Randall Stone, The Kyoto Protocol: Two-Level Bargaining and European Integration, 56 INT'L STUD. Q. 99, 102 (2012).

[125] Liverman, *supra* note 123.

[126] Strategic delegation refers to the idea of member countries giving up a certain amount of autonomy over domestic policy. *See* McLean, *supra* note 124, at 100-101.

[127] *Id.* at 100.

[128] *Id.*

climate agreement with their influential bargaining position and push back against the United States' small win-set.

Because of the constraints imposed by the Byrd-Hagel resolution, and despite international support for a strong deal, the US negotiators made an effort to tailor the Kyoto Protocol to their Level II institution, the United States Senate.[129] In early 1997, the US negotiators proposed that the protocol include an evolution clause which would negotiate emissions targets for all countries, including developing countries, by 2005.[130] The negotiators believed that this proposal fit into the spirit of the Berlin Mandate because developing countries would not have to accept emissions cuts in the Kyoto Protocol itself.[131] However, the evolution clause never came to pass.[132] It faced fierce opposition from not only developing countries but also from the EU.[133]

Another attempt to satisfy the Byrd-Hagel resolution occurred in October of 1997 when President Clinton gave a speech suggesting that the United States would commit itself to 1990 emissions levels by 2008-2010.[134] This proposal did not sit well with the international community, who generally assumed that the Kyoto Protocol would require emissions cuts below the 1990 level.[135] The US negotiators also opposed any implementation of short-term emissions reduction targets, a major business and industry issue, as a way of trying to harmonize the view of the Senate and the international community.[136]

These proposals, and their rejection, show that the United States effectively had their win-set nullified in the negotiating process. The small win-sets of the other negotiating parties, particularly the EU, who were able to match the United States' bargaining power through integration and consolidation, made it near impossible for the US negotiators to leverage the United States' own small win-set and force the negotiations to go in a direction that would have satisfied Byrd-Hagel. Furthermore, a fundamental misunderstanding by the international community of the workings of domestic politics in the United States and the meaning of the Byrd-Hagel resolution only served to further undermine and nullify the effects of the United States' small win-set.

---

[129] Joanna Depledge, *Against the Grain: The United States and the Global Climate Change Regime,* 17 GLOBAL CHANGE PEACE & SECURITY 11, 15-19 (2005).
[130] *Id.* at 15.
[131] *Id.*
[132] *Id.* at 16.
[133] *Id.*
[134] *Id.*
[135] *Id.*
[136] *Id.* at 17.

b. The European Union Did Not Understand the Byrd-Hagel Resolution

One of the features of two-level game theory is that in international negotiations, Level I negotiators are often ignorant of the Level II negotiations and institutions in other countries.[137] This ignorance was on full display throughout the course of the Kyoto Protocol negotiations. A number of European negotiators believed that the Byrd-Hagel resolution was just a bargaining tactic and that the Clinton Administration had the political experience and strength to push a deal through the Senate.[138] A few years after the conclusion of the Kyoto Protocol negotiations, one member of the German delegation stated that the consensus among European negotiators was that the Byrd-Hagel was "just another resolution" and that "Parliaments pass resolutions all the time, without governments paying attention."[139]

This skepticism about the Byrd-Hagel resolution, combined with the strong international support for an aggressive climate deal, helps to explain why the EU rejected many American proposals and ignored the American's small win-set. Furthermore, it was unlikely for the United States to get any internationally acceptable deal ratified by the Senate due to heavy industry opposition. Finally, it was unlikely for the United States to get any internationally acceptable deal ratified by the Senate due to heavy industry opposition.

c. Industry Opposition to the Kyoto Protocol was Too Strong to Overcome

While the US negotiators had many of their proposals that were friendly to the Byrd-Hagel resolution rejected, they still managed to have some Byrd-Hagel friendly proposals accepted into the final Kyoto Protocol. The United States proposed numerous "flexibility mechanisms," including multi-year targets and emissions-trading and banking.[140] The international community eventually agreed to these proposals despite some initial skepticism.[141] The US negotiators likely thought that the Senate would be more accepting of these market friendly proposals as opposed to a command and control type agreement which would rest all the compliance power with the government.[142] Furthermore, the negotiators somewhat managed to bring developing

[137] Putnam, *supra* note 15, at 452.

[138] Jon Hovi, Detelf Sprintz & Guri Bang, *Why the United States did not become a party to the Kyoto Protocol: German, Norwegian, and US perspectives,* 18 EUR. J. OF INT'L REL. 129, 137-38 (2010).

[139] *Id.* at 138-39.

[140] Depledge, *supra* note 129, at 16.

[141] *Id.* at 17.

[142] *Id.*

countries under the umbrella of the Kyoto Protocol in order to try to satisfy the demands of the Byrd-Hagel resolution.

The US negotiators tried to accomplish this inclusion of developing countries through the insertion of the Clean Development Mechanism (CDM) into the protocol.[143] The CDM began as a proposal called the Green Defense Fund (GDF) put forward by the Brazilian delegation.[144] The GDF eventually changed into the CDM due to negotiations between the US negotiators and their Brazilian counterparts.[145] The CDM allowed developed countries to exceed their emissions requirements so long as they funded projects in developing countries that reduced an equivalent amount of emissions and promoted sustainable development.[146] The US negotiators saw the CDM as a way of trying to satisfy the Byrd-Hagel resolution.[147] Ultimately, the efforts of the US negotiators to insert provisions that were potentially friendly to the Byrd-Hagel resolution were irrelevant due to strong industry opposition to any sort of deal in the United States.

As previously discussed, Putnam's two-level game theory teaches that in a representative democracy, the interests of affected industries play a strong role in deciding a country's win-set because these industries are a part of country's Level II institutions.[148] For the United States and the Kyoto Protocol, this meant that US negotiators at Kyoto not only had to worry about negotiating with other parties, but also had to keep in mind how the affected industry—which was any fossil fuel related industry—viewed the deal and what kind of action they desired.

In addition to the fossil fuel industry, car makers, corn farmers, steel mills, and coal miners also opposed the Kyoto Protocol.[149] These industries launched a very successful lobbying campaign within the United States Congress.[150] This lobbying caused the United States to pull away from the rest of the world's position on climate change and take a hardline stance when it came to including developing countries.[151] Furthermore, The Global Climate Information Project, an industry coalition, launched a $13 million dollar advertising campaign with the

[143] *Id.* at 16.

[144] Franck Lecocq & Philippe Ambrosi, *The Clean Development Mechanism: History, Status, and Prospects,* 1 REV. OF ENVTL. ECON. AND POL'Y 134, 134 (2007).

[145] *Id.*

[146] *Id.* at 134-35.

[147] Depledge, *supra* note 129, at 16.

[148] *Putnam supra* note 15, at 448.

[149] *Id.*

[150] *Id.*

[151] *Id.*

goal of defeating any international climate treaty.[152] This intense lobbying by industry groups is what pressured the Senate into passing the Byrd-Hagel resolution.[153] It was the intense lobbying practiced by the industry that made it near impossible for the United States to negotiate a friendly deal.

3. Conclusion

Unlike the success of the Montreal Protocol, time has lessened the world's opinion of the Kyoto Protocol. The Kyoto Protocol has failed to slow or even reduce carbon emissions; they have actually increased since its signing in 1997.[154] Through a two-level game theory analysis, it is clear that the Kyoto Protocol was doomed from the start. On one end of the spectrum sat the EU, who wanted to take aggressive action on climate change, and developing countries, who believed that only developed countries should be responsible for making emissions cuts. On the other end of the spectrum sat the United States Senate, the American Level II institution, who demanded no mandatory emissions cuts unless the mandate included developing countries. Stuck in the middle was the United States' negotiating delegation and executive branch, the Level I institution.

The US negotiators could not play a typical two-level game and force other countries to agree with their small win-set. Other countries' demand for action meant that almost every negotiating party had a small win-set and the United States stood alone in its position on soft action on climate change. Ultimately, President Clinton signed the Kyoto Protocol as a merely symbolic gesture.[155] The Clinton Administration never tried to submit the Kyoto Protocol to the Senate for ratification, acknowledging that it had no chance of passing due to the lack of mandatory emissions cuts for developing countries.[156] President Bush ultimately pulled the United States out of the treaty in 2001.[157] While the Kyoto Protocol failed to achieve any significant climate action, its failure serves to inform the world about the futility of trying to negotiate similar top-down international climate agreements.

---

[152] *Id.*

[153] *Id.*

[154] Duncan Clark, Has the Kyoto Protocol Made Any Difference to Carbon Emissions?, THE GUARDIAN (Nov. 26, 2012), http://www.theguardian.com/environment/blog/2012/nov/26/kyoto-protocol-carbon-emissions.

[155] Laurie Goering, Clinton Signs Pact On Global Warming, THE CHICAGO TRIBUNE (Nov. 13, 1998), http://articles.chicagotribune.com/1998-11-13/news/9811130120_1_greenhouse-gas-emissions-greenhouse-gases-global-warming

[156] Saundry, *supra* note 101..

[157] *Id.*

IV. BEYON KYOTO: WHY A STRONG CLIMATE AGREEMENT NEVER MATERIALIZED

There have been eighteen different COPs in the years between the signing of the Kyoto Protocol in 1997 and the signing of the Paris Agreement in December of 2015.[158] None of the eighteen COPs managed to produce any form of strong international agreement. The main reason that no aggressive deal has materialized is because of the nature of the two-level game. While almost twenty years have passed since the signing of the Kyoto Protocol, many of the factors have not changed. In the United States, Level II opposition and industry opposition to any aggressive international deal remains very strong. This opposition means that the United States still has too small of a win-set to make any sort of aggressive international agreement.

Fossil fuel companies in the United States still spend an inordinate amount of money funding climate change denial studies.[159] Industry opposition to climate change action spent almost $140 dollars funding climate change denial efforts between 2003 and 2010.[160] ExxonMobil spent large amounts of money in 2014 and 2015 lobbying against climate change action.[161] Recent congressional resolutions about climate change evidence the effects of this intensive lobbying by the industry. In January of 2015, the United States Senate voted to agree that climate change was real but that the Senate denied any manmade involvement in it.[162] Furthermore, at the end of 2015, the Senate and House passed a joint resolution disapproving of the Clean Power Plan, the method by which the United States will comply with the Paris Agreement.[163] Industry lobbying helps to create Level II opposition to climate change which prevents any aggressive international action, as evidenced by negotiations that took place after the signing of the Kyoto Protocol.

---

[158] *Meetings,* UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE http://unfccc.int/meetings/items/6240.php. (last visited Mar. 16, 2016)

[159] Peter C. Frumhoff & Naomi Oreskes, Fossil fuel firms are still bankrolling climate denial lobby groups THE GUARDIAN (Mar. 25, 2015) http://www.theguardian.com/environment/2015/mar/25/fossil-fuel-firms-are-still-bankrolling-climate-denial-lobby-groups

[160] Fischer, *supra* note 57.

[161] Suzanne Goldenberg, *ExxonMobil gave millions to climate-denying lawmakers despite pledge*, THE GUARDIAN (July 15, 2015), http://www.theguardian.com/environment/2015/jul/15/exxon-mobil-gave-millions-climate-denying-lawmakers.

[162] Suzanne Goldenberg, US Senate refuses to accept humanity's role in global climate change, again, THE GUARDIAN (Jan. 22, 2015), http://www.theguardian.com/environment/2015/jan/22/us-senate-man-climate-change-global-warming-hoax.

[163] S.J. Res. 24, 114th Cong. (2015).

Attempts to negotiate an aggressive international climate deal following the signing of the Kyoto Protocol serves as further proof that any such deal is near impossible to achieve. In 2000, at the COP six in Moscow, there was an attempt to negotiate further agreements and operational matters under the context of the Kyoto Protocol.[164] However, these talks fell apart due to differences between the United States and Europe on many different matters.[165] In 2009, there was another COP meeting, this one ending with an agreement called the Copenhagen Accord.[166] On its surface, the agreement looked hopeful because it called for the United States, Brazil, China, and India to make emissions cuts.[167] However, in reality the accord was not legally binding: instead it was a political framework.[168] Furthermore, the accord called for legislative backing for the United Sates to take climate action, which did not happen.[169] Finally, the talks in Lima in 2014 failed to produce any sort of climate agreement.[170] The failed negotiations in Moscow, Copenhagen, and Lima are only further evidence of the impossibility associated with attempting to negotiate a climate change agreement.

The nature of a two-level game means that it is unlikely that there will ever be an aggressive legally binding international climate agreement. Even if the Democratic Party were to win a majority of Senate seats in the 2016 election, it is still unlikely that any climate treaty could get the sixty-seven votes needed for ratification. Therefore, even if the world successfully negotiated an aggressive legally binding international climate treaty, it would be very unlikely that the United States would ratify it, leading to the deal having the same issues as the Kyoto Protocol. Furthermore, while developing countries, like China and India, have begun to show some willingness to make emission cuts, it is

[164] COP 6: US-EU Differences Blamed for Failure of Climate Change Negotiations, INTERNATIONAL CENTRE FOR TRADE AND SUSTAINABLE DEVELOPMENT (Nov. 28, 2000), http://www.ictsd.org/bridges-news/bridges/news/cop-6-us-eu-differences-blamed-for-failure-of-climate-change-negotiations.

[165] *Id.*

[166] David Biello, U.S. Commits to Greenhouse Gas Cuts under Copenhagen Climate Accord, THE SCIENTIFIC AMERICAN (Jan. 29, 2010), http://www.scientificamerican.com/article/us-commits-to-greenhouse-gas-cuts-under-copenhagen-accord/.

[167] *Id.*

[168] Alden Meyer, The Copenhagen Accord: Not Everything We Wanted, But Something to Build On, UNION OF CONCERNED SCIENTISTS, http://www.ucsusa.org/global_warming/solutions/reduce-emissions/the-copenhagen-accord.html#.Vur455wrLIU. (last visited Mar. 17, 2016).

[169] Biello, *supra* note 166.

[170] Geoffrey Lean, How the Lima climate change talks failed, THE TELEGRAPH (Dec. 15, 2014), http://www.telegraph.co.uk/news/earth/11293478/How-the-Lima-climate-change-talks-failed.html.

unlikely that they would agree to mandatory emissions cuts in any treaty to which the United States was not a party. For these reasons, the fight against climate change has switched to a bottom-up approach, as evidenced by subnational initiatives and the pledge and review nature of the Paris Agreement.

V. THE BOTTOM-UP WORLD: HOW PLEDGE-AND-REVIEW AND SUBNATIONAL INITIATIVES ARE LEADING THE FIGHT AGAINST CLIMATE CHANGE

In the world of climate change, a top-down approach refers to a system where countries agree to international forms of organization and compliance, each party is expected to follow the agreement exactly, and a body that represents the member states of the agreement governs the agreement.[171] The Kyoto Protocol was an attempt at a top-down agreement because it set targets that its member countries had to meet and the Conference of Member Parties to the Kyoto Protocol governed it.[172] Conversely, a bottom-up approach refers to an approach without a singular global form of compliance.[173] A bottom-up approach attempts to implement policy at a lower level, whether at the city level, state level, or national level.[174] The national level approach to climate change refers to a single country's climate change mitigation plan, that is, its emissions cuts goals, and its methods for achieving those goals.[175] One country's emissions cuts goals and methods would not be binding on any other country because every country would choose its own measures based on what works best for them.[176] Because of the failings of the Kyoto Protocol and other top-down approaches to climate change, the world has begun to shift to the bottom-up formula. The pledge and review nature of the Paris Agreement and subnational initiatives are evidence of this shift.

[171] Leal-Arcas, *supra* note 16.

[172] see Kyoto Protocol supra, note 118 at Appendix B (discussing emission cuts); see Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP), UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/bodies/body/6397.php. (last visited, Mar. 16, 2016) (discussing governing structure).

[173] Rayner, *supra* note 16.

[174] *Id.*

[175] *Id.*

[176] *Id.*

A. The Paris Agreement

Countries signed and agreed to the Paris Agreement in December 2015, thus signaling a major step in the fight against climate change.[177] While environmental groups have complained that the Paris Agreement does not do enough to fight climate change, it is still a major achievement because it is a large scale international climate agreement.[178] Furthermore, unlike the Kyoto Protocol, under the Paris Agreement, developing countries like China and India have pledged to make emissions cuts.[179] The Paris Agreement was able to achieve these things because it was not subject to the constraints of a two-level game.

The Paris Agreement's switch to a bottom-up method, as opposed to a top-down method, is a prime example for how the constraints of a two-level game has changed the world of international climate deals. As previously demonstrated, it is impossible to negotiate a traditional top-down climate agreement due to the opposition from the United States' Level II institution: the Senate. Large lobbying contributions from fossil fuel industries has helped the Senate maintain its hardline stance against climate deals. Therefore, as the Paris Agreement demonstrates, any successful climate agreement must avoid the need for ratification by the U.S. Senate.

By working within a bottom-up model, rather than a top-down model, the Paris Agreement was able to avoid having to insert measures that then would have required Senate ratification. This is key as it shows the Paris Agreement's intent to side-step the constraints of a level-two game in order to get a deal done. It also displays that this bottom-up method is the only way to get such a deal done. This section will first examine how the Paris Agreement avoided the need for ratification, before moving on to examine how the U.S. and other countries are planning on complying with the agreement.

1. The Paris Agreement: Avoiding Ratification

A major feature of the Paris Agreement is its pledge and review system. Under this system, each country submits their own plan to cut emissions.[180] Each country would review their plan every five years and

[177] Gosden, *supra* note 17.

[178] *Id.*

[179] Justin Worland, What to Know About the Historic 'Paris Agreement' on Climate Change, TIME MAGAZINE (Dec. 12, 2015), http://time.com/4146764/paris-agreement-climate-cop-21/.

[180] David Victor, Why Paris Worked: A Different Approach to Climate Diplomacy, YALE ENVIRONMENT 360 (Dec. 15, 2015), http://e360.yale.edu/feature/why_paris_worked_a_different_approach_to_climate_diplomacy/2940/.

then adopt new pledges based on the situation at the time.[181] The pledge and review provisions of the Paris Agreement allow it to avoid the Senate by selectively applying legally binding language.[182] Under the Paris Agreement, a country's pledge to reduce emissions cuts are not legally binding.[183] The review aspect of the agreement, however, is legally enforceable.[184] This scheme means that the Paris Agreement avoids the Senate ratification process, and therefore avoids the constraints of a two-level game.[185]

While the lack of legally binding language in the pledge section can lead to some fear that countries will not comply with their pledges, social pressure and the need to maintain good faith in international bargaining will help force compliance.[186] For the United States, the lack of legally binding language means that the Paris Agreement is an executive agreement and therefore is not subject to Senate ratification;[187] however, this could pose a problem in the future, since executive agreements are not binding on future presidents.[188] While some have argued that the Paris Agreement is in fact a treaty that requires Senate ratification,[189] it is an executive agreement because it does not alter American sovereignty, and it does not require the United States to pass legislation to comply with the agreement.[190] Furthermore, the Paris Agreement complements

[181] *Id.*

[182] Suzanne Goldenberg, How US negotiators ensured landmark Paris climate deal was Republican-proof, THE GUARDIAN (Dec. 13, 2015), http://www.theguardian.com/us-news/2015/dec/13/climate-change-paris-deal-cop21-obama-administration-congress-republicans-environment.

[183] *Id.*

[184] *Id.*

[185] *Id.*

[186] Samantha Page, No, The Paris Climate Agreement Isn't Binding. Here's Why That Doesn't Matter, THINK PROGRESS (Dec. 14, 2015), http://thinkprogress.org/climate/2015/12/14/3731715/paris-agreement-is-an-actual-agreement/.

[187] Ashley Alman & Daniel Marans, Barack Obama Praises Paris Climate Change Agreement, THE HUFFINGTON POST (Dec. 12, 2015, 5:36 PM), http://www.huffingtonpost.com/entry/obama-paris-climate-agreement_us_566c8cf1e4b0fccee16ed503.

[188] John Bolton & John Yoo, Paris climate conference: Without Congress' support, Obama's deal making powers are limited, LOS ANGELES TIMES (Dec. 1, 2015, 5:00 AM), http://www.latimes.com/opinion/op-ed/la-oe-boltonyoo-paris-climate-deal-not-binding-20151201-story.html.

[189] Marlo Lewis Jr., The Paris Climate Agreement Is a Treaty Requiring Senate Review, COMPETITIVE ENTERPRISE INSTITUTE (February 24, 2016), https://cei.org/content/paris-climate-agreement-treaty-requiring-senate-review.

[190] Bolton, *supra* note 188. (discussing the Iran Nuclear deal, the authors note that it is an executive agreement because it does not affect United States sovereignty or require any new legislation).

existing United States law found in the Clean Air Act[191] and *Massachusetts v. EPA,*[192] and it elaborates on commitments made in the UNFCCC which the Senate ratified.[193]

This drafting of the Paris Agreement shows an acknowledgement of the realities of the constraints of the two-level game. While most countries probably would favor a top-down binding model for climate change, this bottom-up method is the only way to avoid the need for ratification by the U.S. Senate. If the world wants to get climate deals done, it must switch to a bottom up method in order to escape the two-level game. As it currently stands, the United States plans on complying with the Paris Agreement through the Clean Power Plan.

2. The Paris Agreement: Complying With the Agreement

President Obama announced the Clean Power Plan on August 3, 2015.[194] The plan aims to reduce carbon pollution from power plants.[195] The plan's final goal is to cut carbon pollution from the power sector by thirty percent from 2005 levels.[196] The EPA estimates that the Clean Power Plan will have climate and health benefits for the country worth between $50 and $90 billion dollars.[197] While the recent Supreme Court stay threw the future of the plan into doubt,[198] there is a higher chance that it will survive legal challenges with the passing of Justice Scalia.[199] If the Senate approves President Obama Supreme Court nomination to

[191] Clean Air Act, Pub. L. No. 88-206, 77 Stat. 392 (1963).

[192] Massachusetts v. Environmental Protection Agency, 549 U.S. 497 (2007) (holding that the Clean Air Act authorizes the EPA to declare that carbon dioxide is a pollutant and regulate it under the act).

[193] Daniel Bodansky, Legal Options For U.S. Acceptance Of A New Climate Change Agreement 14, CENTER FOR CLIMATE AND ENERGY SOLUTIONS (May 2015), available at http://www.c2es.org/docUploads/legal-options-us-acceptance-new-climate-change-agreement.pdf.

[194] *Clean Power Plan for Existing Power Plants* ENVIRONMENTAL PROTECTION AGENCY (last visited Feb. 26, 2016). http://www.epa.gov/cleanpowerplan/clean-power-plan-existing-power-plants.

[195] *Clean Power Plan for Existing Power Plants*, ENVIRONMENTAL PROTECTION AGENCY, http://www.epa.gov/cleanpowerplan /clean-power-plan-existing-power-plants (last visited Feb. 26, 2016).

[196] *Id.*

[197] *Id.*

[198] Fiona Harvey & Suzanne Goldenberg, *US clean power plan setback 'will not affect Paris climate change deal'*, THE GUARDIAN (Feb. 10, 2016), http://www.theguardian.com/environment/2016/feb/10/us-clean-power-plan-setback-will-not-affect-paris-climate-change-deal.

[199] Richard Martin, *Scalia's Death Boosts Chances for Obama's Clean Power Plan,* MIT TECHNOLOGY REVIEW (Feb, 16, 2016), https://www.technologyreview.com/s/600816/scalias-death-boosts-chances-for-obamas-clean-power-plan/.

fill the vacancy, it will tilt the balance of the court in the plan's favor.[200] If the plan makes it to the Supreme Court before the President appoints a new justice, a four-four ruling would likely come to pass.[201] This ruling would leave the lower court's ruling in place, which is likely to be in favor of the plan.[202] If President Obama's successor gets to appoint the new justice and they are a Democrat, then again the Supreme Court will tilt in the plan's favor.[203] The only outcome that would likely kill the plan is if a Republican administration succeeds President Obama and the new administration appoints a new conservative justice.[204] However, given that three out of the four scenarios uphold the Clean Power Plan, it is likely to survive a legal challenge. In addition to the United States taking steps to cut emissions under the Paris Agreement, developing countries such as China and India are also pledging to reduce emissions.[205]

Getting developing countries on board, especially China and India, is an important step in the fight against climate change because these two countries are currently first and fourth in emissions respectively.[206] Per the terms of the Paris Agreement, both China and India submitted their Intended Nationally Determined Contribution (INDC), more commonly known as their emission reduction pledges.[207] Both countries' plans aim to tackle their current emission levels.

China's climate plan features three main emission-related targets and goals. The first goal, is to peak carbon-dioxide emissions by the year 2030.[208] The next target is to lower carbon-dioxide emissions from 2005 levels per unit of GDP by sixty to sixty-five percent. [209] In order to meet its goal, China must reduce its carbon intensity between three point six to four point one percent every year.[210] Furthermore, China hopes to increase the presence of non-fossil fuels in its primary energy

[200] *Id.*
[201] *Id.*
[202] *Id.*
[203] *Id.*
[204] *Id.*
[205] Worland, *supra* note 213.
[206] Mengpin Ge, Johannes Friedrich & Thomas Damassa, *6 Graphs Explain the World's Top 10 Emitters,* WORLD RESOURCES INSTITUTE (Nov. 25, 2014). http://www.wri.org/blog/2014/11/6-graphs-explain-world%E2%80%99s-top-10-emitters.

[207] *INDCs As Communicated By Parties,* UNITED NATIONS FRAMEWORK ON CLIMATE CHANGE CONVENTION (last visited Feb. 26, 2016 12:49 PM) http://www4.unfccc.int/submissions/INDC/Submission%20Pages/submissions.aspx.
[208] *Id.*
[209] *Inside China,* THE CLIMATE GROUP (October 2015), http://www.theclimategroup.org/_assets/files/China-Insight-briefing.pdf
[210] *Id.*

consumption to about 20% by 2030.[211] China's climate plan has outlined five different implementation/emission control methods to meet their ambitious goals. The first way is to both control coal emissions and subsequently to create targets to increase solar, wind, and natural gas capacities.[212] Another method is to control the emissions of the iron, steel, and chemical industries.[213] China also hopes to promote the growth of the service industry and other low-emissions industries.[214] The final set of emissions that China hopes to control is emissions from buildings and transport.[215] Finally, China also has a plan to implement a cap and trade system to help comply with their pledge.[216]

India's pledge to reduce emissions relies on a transition to clean energy and an increase in forest cover.[217] India committed itself to reducing its emissions by thirty three to thirty five percent below 2005 levels by 2030.[218] India aims to install at least two hundred gigawatts of renewable power capacity by 2030.[219] This goal is building on a previous promise of one hundred seventy five gigawatts by 2022.[220] Furthermore, India aims to create a carbon sink through additional forest cover.[221] The sink would be able to absorb two point five to three billion tons of carbon dioxide.[222] While India has not been clear on how it would implement its forest plan beyond measures already in place, a success here would go a long way toward reducing emissions.[223] These national pledges to reduce emissions as part of the Paris Agreement are a very important feature of the bottom-up world. Another important feature is subnational initiatives to fight climate change.

[211] *Id.*

[212] *A Closer Look at China's New Climate Plan (INDC),* THE WORLD RESOURCES INSTITUTE (July 2, 2015), http://www.wri.org/blog/2015/07/closer-look-chinas-new-climate-plan-indc

[213] *Id.*

[214] *Id.*

[215] *Id.*

[216] *China's ambitious plan to limit carbon emissions, explained,* VOX (September 25, 2015) http://www.vox.com/2015/9/25/9399055/china-climate-cap-trade.

[217] Apurba Mitra et. al., *5 Key Takeaways from India's New Climate Plan (INDC),* WORLD RESOURCES INSTITUTE (Oct. 02, 2015). http://www.wri.org/blog/2015/10/5-key-takeaways-india%E2%80%99s-new-climate-plan-indc.

[218] *Id.*

[219] *Id.*

[220] *Id.*

[221] *Id.*

[222] *Id. c*

[223] *Id.*

B. Subnational Initiatives to Fight Climate Change: Acre, Brazil and California

Subnational initiatives to fight climate change are another important feature of the new bottom-up world.[224] Subnational initiatives refer to climate change initiatives either on a city level, community level, or state level. This section will examine two states from different countries who are making great strides in fighting against climate change. These states are Acre (Brazil) and California.

Acre is the westernmost state in Brazil and covers the southwest portion of the forest zone of the Amazon River basin.[225] Rainforests cover almost ninety percent of the state, making it an important location in the fight against climate change.[226] Acre managed to reduce deforestation by seventy percent between 2003 and 2008.[227] Furthermore, between 1998 and 2009, Acre lost less than four percent of their forest at a time when neighboring Amazon states were losing between four point seven and eleven point eight percent.[228] Acre achieved a reduction in deforestation by instituting a forest policy that called for responsible forest management.[229]

One of the biggest forest management program is called the State Environmental Service Incentive System (SISA), which enhances ecosystem management incentives.[230] SISA helps to forge private-public partnerships and incentivizes the protection of forests in Acre.[231] SISA was built off of the back of more than a decade of "sustainable forest-based development policies."[232] SISA establishes incentives for various "environmental services".[233] SISA has many components, the most

[224] Leal-Arcas*, supra* note 204.

[225] *Acre*, THE ENCYCLOPEDIA BRITANNICA (last visited Feb. 26, 2016 1:15 PM). http://www.britannica.com/place/Acre-state-Brazil.

[226] Kate Evans, *SPECIAL REPORT: How a remote Amazonian state is leading the way in climate change policy* CENTER FOR INTERNATIONAL FORESTRY RESEARCH (Nov. 4, 2013). http://blog.cifor.org/17275/special-report-how-a-remote-amazonian-state-is-leading-the-way-in-climate-change-policy?fnl=en.

[227] *Acre, Brazil: Subnational Leader in REDD+* CLIMATE FOCUS (May 2013). http://www.climatefocus.com/sites/default/files/acre_brazil.pdf/.

[228] *Id.*

[229] *Id.*

[230] *Id.*

[231] *Id.*

[232] Amy E Duchelle, et. al, *Acre's State System of Incentives for Environmental Services (SISA), Brazil,* CIFOR (last visited Oct 14, 2016). *Available at http://www.cifor.org/redd-case-book/case-reports/brazil/acres-state-system-incentives-environmental-services-sisa-brazil/.*

[233] *Acre,* GOVERNOR'S CLIMATE & FOREST TASK FORCE (last visited October 14, 2016). *Available at http://www.gcftaskforce.org/documents/Acre_brochure_cop17.pdf.*

important of which might be ISA-Carbon.[234]

ISA-Carbon—a program which falls under the umbrella of SISA—seeks to achieve a reduction in emissions by reducing and stopping deforestation and forest degradation.[235] Initially the ISA-Carbon program was aimed at vulnerable areas in Acre, however the program has since been expanded to cover the entire state.[236] However, ISA-Carbon also includes sub-programs which focus on themes such as indigenous land or cattle ranches, or on geographic areas.[237] The goal of ISA-Carbon is to intervene in these areas, and through incentives encourage land-owners and others in the area to maintain current levels of emission reductions and attempt to improve them through reduced deforestation.[238] ISA-Carbon is funded both from domestic funds and programs and from international initiatives.[239] According to proposal from the State of Acre—as part of the Under 2 MOU—ISA-Carbon has played an important role in reducing deforestation in the state.[240] Furthermore, ISA-Carbon's emission reductions are checked every five years.[241]

These initiatives and their success in Acre are important, as Acre continued to fight climate change even when international action stagnated. Subnational programs such as this can serve as a model for future states and countries as they look to implement their own climate change policies.

Acre is not the only state to take the climate change fight head on: California has also aimed to curb its emissions even absent national action. California is the second largest greenhouse gas emitter in the United States, emitting 353 million metric tons of carbon dioxide a year.[242] California attempted to reduce its emissions by passing a cap and trade bill long before the creation of Clean Power Plan by the Obama Administration.[243] Due to an executive order by Governor Jerry Brown,

[234] World Wildlife Fund, *Environmental Service Incentive System In The State of Acre, Brazil* 28, WWF (2013). *Available at http://awsassets.panda.org/downloads/acre_brazil_sisa_report___english_10_13.pdf.*

[235] *Id.*

[236] *Id.* at 30.

[237] *Id.* at 31.

[238] *Id.* at 31.

[239] *Id.* at 32.

[240] *Acre State Carbon Emission Reduction Proposal Until 2030* 6, GOVERNMENT OF ACRE (last visited Oct. 14, 2016). *Available at http://under2mou.org/wp-content/uploads/2015/05/Acre-appendix-English.pdf.*

[241] *Id.*

[242] Bobby Magill, *Texas, California Lead Nation in Carbon Emissions* CLIMATE CENTRAL (Oct. 29, 2015). http://www.climatecentral.org/news/carbon-emissions-spike-in-some-states-19615.

[243] *California Cap And Trade*, CENTER FOR CLIMATE AND ENERGY SOLUTIONS (last visited Feb. 26, 2016 1:45PM). http://www.c2es.org/us-states-regions/key-

California's cap and trade program aims to reduce the state's emissions to forty percent below 1990 levels by 2030.[244] Some have called California's cap and trade program the most comprehensive in the nation:[245] it regulates electricity generation and large stationary energy sources such as oil refineries, among others.[246] So far, it seems that the program has been a success, as emissions in the state have fallen since its implementation in 2013.[247] In addition, the cap and trade program has not harmed the state's economy in any visible way.[248] Like Acre, California is slowly becoming an example for other states and countries as they look for model cap and trade programs to help reduce emissions.[249] Subnational success stories, like California and Acre, in the fight against climate change provide a blueprint for others to take action and are therefore an important feature of the switch to a bottom-up world.

VI. CONCLUSION

Climate change is a pressing issue on which the world must take action. The longer that response takes, the worse the negative effects will be. Warmer temperatures will mean rising ocean levels and increased severity in storms. It will mean a greater displacement of people and a refugee crisis unlike any seen before in history. This does not have to be the way forward, however. If the countries of the world begin to reduce emissions, they will be taking the critical steps needed to mitigate the fallout from climate change. But the world cannot take action in a traditional sense - the constraints of a two-level game will not allow it. The failure of the Kyoto Protocol, compared to the success of the earlier Montreal Protocol, demonstrates these constraints. While political leaders and international negotiators may wish to take action, the political realities of the United States will not allow such action. The United States Senate creates too small of a win-set for the United States

legislation/california-cap-trade.

[244] Chris Megerian & Michael Finnegan, *California's greenhouse gas emission targets are getting tougher* LOS ANGELES TIMES (Apr. 29, 2015). http://www.latimes.com/local/political/la-me-pc-jerry-brown-orders-emission-targets-for-climate-change-20150429-story.html.

[245] Jason Dearen, *California 'Cap-And-Trade' Plan Poised To Be Finalized (VIDEO)* THE HUFFINGTON POST (Oct. 20, 2011). http://www.huffingtonpost.com/2011/10/20/california-cap-and-trade_n_1022314.html.

[246] *Carbon Market California* ENVIRONMENTAL DEFENSE FUND (last visited Feb. 26, 2016). http://www.edf.org/sites/default/files/content/ca-cap-and-trade_1yr_22_web.pdf.

[247] Michael Hiltzik, *Emissions cap-and-trade program is working well in California* Los Angeles Times (Jun. 12, 2015). http://www.latimes.com/business/hiltzik/la-fi-hiltzik-20150613-column.html.

[248] *Id.*

[249] *Id.*

executive branch to work with internationally. For any treaty to pass the Senate, it must be too weak to make any real difference to the climate change fight.

It is for these reasons that the world is switching to a bottom-up approach. The Paris Agreement is perhaps the largest indicator of this switch. The pledge and review method employed by the Paris Agreement allows each country to determine what it can do to reduce emissions and then improve those targets every five years. More importantly, the nature of the Paris Agreement allows the United States to avoid the Senate altogether, thus escaping from the constraints of a two-level game. Subnational initiatives to fight climate change are also becoming more and more prevalent and important as time goes on. These initiatives allow states to take quick decisive action while nations drag their feet, and they provide lessons on how to implement successful climate change policies.

Mahatma Gandhi once said, "Earth provides enough to satisfy every man's needs but not every man's greed." This quote has never been more relevant than today. As the world moves forward in the bottom-up model, each state and nation must keep Gandhi's lesson in mind. While the bottom-up model is not the ideal approach to fighting climate change, it is a workable approach. So long as nations and policy makers are cognizant not only of the needs and wants of their countrymen but the needs of the world as a whole, there can be success in the fight against climate change.

The Hard(rock) Truth About Abandoned Mines in the Western United States: Why the Pressure Is On to Enact Good Samaritan Legislation as a Way to Recover

Erika Kuhl*

* J.D. candidate, University of Colorado Law School.

Table of Contents

I. INTRODUCTION

The water was mustard yellow. It was unnatural and unsafe, but was it unexpected? The normally blue, free-flowing Animas River, which flows from Southern Colorado into New Mexico, a part of the Colorado River System, was instantly transformed from a serene, natural river into a toxic wasteland. Three million gallons of toxic mining waste rushed into the Animas River on August 5, 2015, spilling over from Gold King Mine, located near Silverton, Colorado.[1] Although Gold King Mine has been inactive since 1920, when the Environmental Protection Agency sought to cleanup a small leak in the mine, they accidentally drilled into the side of the mine, causing a deluge of toxic waste to enter into the Animas River.[2]

Although the River has since been flushed out and is mostly back to normal,[3] this was an environmental disaster that has the potential to occur at countless other abandoned mines throughout the west. Gold King Mine is not the only inactive, abandoned mine that contains toxic chemicals and materials in Colorado and throughout the western United States. Many of these mines have not been cleaned up or even addressed in any way at all. The legal framework surrounding mining in the United States is outdated and disincentivizes organizations who are actually willing to clean up the mines by making them potentially liable for incidents similar to the Animas River spill.

The harms of the outdated mining act, called the Hardrock Mining Act, have led to massive spills and catastrophes throughout the United States. Current environmental regulations have failed to address the resulting slow damage caused by these disasters and have discouraged others from cleaning up these sites. Additionally, because of the real risk of exposure to potential liabilities connected to these sites, the abandoned mines continue to leak chemicals into the ground and water sources, with little hope of being cleaned up or restored.

While current legislators have been working to solve this problem,

[1] Ben Brumfield, *By the Numbers: The Massive Toll of the Animas River Spill,* CNN (Aug. 13, 2015, 12:57 PM), http://www.cnn.com/2015/08/13/us/animas-river-spill-by-the-numbers/.

[2] Lauren Pagel, *The Real Culprit in the Animas River Spill,* CNN (Aug. 13, 2015, 12:56 PM), http://www.cnn.com/2015/08/12/opinions/pagel-animas-river-pollution/.

[3] Jesse Paul, *EPA Chief Gina McCarthy Says Water Quality in Animas Back to "Pre-Event Conditions",* THE DENVER POST (Aug. 12, 2015, 12:12:04 PM), http://www.denverpost.com/news/ci_28627376/epa-chief-gina-mccarthy-durango-wednesday-see-animas.

the legislation and efforts have fallen short. Therefore, legislation is needed to incentivize the cleanup of these sites for the sake of the environment, without the fear of liability for potential disasters or mishaps. This paper will propose new legislation to encourage the cleanup of these sites, reduce the toxicity of United States waters, and prevent spills such as the Gold King Mine waste into the Animas River from occurring. Beginning with the Hardrock Mining Act and flowing through to the Clean Water Act, this paper will address the current state of mining laws and abandoned mines in the United States, identify the pressing issues, and propose a solution through an analysis of the Animas River spill and what went wrong.

II. ANIMAS RIVER SPILL

A. Background of the 1872 Mining Act

The General Mining Law of 1872, (Hardrock Act), is the bedrock of mining law in the United States.[4] Prompted by the California Gold Rush in 1848, the Hardrock Act became necessary due to increase of mining activity throughout the western United States.[5] Prior to the Hardrock Act, there were no laws governing the discovery of mineral deposits on land – most of which was public federal land. As a consequence of this regulatory vacuum, miners could be considered trespassers on the land and did not have the right to maintain the minerals they may have found, or any rights to the land itself.[6] The Hardrock Act, states in relevant part,

> Except as otherwise provided, all valuable mineral deposits in lands belonging to the United States, both surveyed and unsurveyed, shall be free and open to exploration and purchase, and the lands in which they are found to occupation and purchase, by citizens of the United States and those who have declared their intention to become such, under regulations prescribed by law, and according to the local customs or rules of miners in the several mining districts, so far as the same are applicable and not inconsistent with the laws of the united States.[7]

---

[4] CHARLES F. WILKINSON, CROSSING THE NEXT MERIDIAN: LAND, WATER, AND THE FUTURE OF THE WEST, 43 (1992).

[5] Roger Flynn, *The 1872 Mining Law as an Impediment to Mineral Development on the Public Lands: A 19th Century Law Meets the Realities of Modern Mining*, 34 LAND & WATER L. REV. 301, 302 (1999).

[6] *Id.*

[7] 30 U.S.C.A. § 22.

Essentially, the Hardrock Act provides that the finder of any mineral deposits, namely gold, silver, uranium, copper, molybdenum, iron, lead, aluminum, and gemstones, on public lands is entitled to their possession and to the mining site as a whole.[8] The Hardrock Act differs from other extraction laws, such as those that govern the oil, coal, and natural gas industries, which require a 12.5% royalty on minerals they extract.[9] This possession can extend to not only the resources found, but also the ability to build on the land, graze cattle, cut timber, among other things.[10] As Charles Wilkinson, states, "the statute requires no permit, lease, or other form of federal approval prior to entry," so the simple act of discovery is considered enough.[11] This "right to mine" mantra is an essentially privatized concept, with few requirements. Although some lands have since been considered federal acres set aside for special purposes[12], to which the statute does not apply, over 400 million acres, mostly located in the western United States, are open for mining.[13]

1. How the Hardrock Mining Act Governs Most Mines

The aim of the Hardrock Act is to protect miners' rights. Once a miner discovers a valuable hardrock material on a site, it becomes an "unpatented mining claim," of twenty acres, which the miner has exclusive rights and possession over.[14] As the moment of "discovery" can be ambiguous and hard to define, the Interior Department established the "prudent person test", which essentially states, "a miner has made a discovery if there is a reasonable prospect for future success."[15] The requirements to maintain an unpatented mining claim are relatively easy to comply with. All the miner needs to do is "conduct annual 'assessment work' and file annual reports with the Bureau of Land Management."[16] In sum, if a miner finds a source of mineral deposits on a piece of land that have the potential to be fruitful, the finder gains both access and possession over that area.

[8] Wilkinson, *supra* note 4 at 44.

[9] Frances Causey, *1872 Mining Law is Obsolete and in Need of Reform,* THE HUFFINGTON POST, (Jan. 11, 2013, 3:14 PM), http://www.huffingtonpost.com/frances-causey/1872-mining-law-obsolete_b_2456346.html.

[10] Wilkinson, *supra* note 4 at 45.

[11] *Id.* at 44.

[12] *See id.* Some lands have been set aside by presidents or Congress for special purposes, such as military bases or recreation lands, thought to be inconsistent with mineral development.

[13] *Id.*

[14] *Id.* at 45.

[15] *Id.* at 46.

[16] *Id.* at 47.

The next step in the process to preserve the mining site is to obtain a patent, if the miner has made the discovery and accomplished $500 worth of assessment work in labor or improvements.[17] However, many miners do not acquire patents, even though full title "eliminates most regulation by federal agencies, provides somewhat greater security, and in some cases may establish ownership to valuable nominal resources…," and the cost is only $2.50 to $5 per acre, because the miners have little incentive to do so.[18] The "right to mine" standard holds strong even without a patent, so many do not find the need to take this next minimalistic step.[19] While protecting miners' rights is important, the Hardrock Act emphasizes that the fundamental decision to mine is made by private mining interests, and not as a matter of public policy.[20] This in turn has led to selection of mining sites that are not necessarily in the best interest of the state, government, or generally the environment as a whole.

2. Hardrock Act and the "Right to Mine" Have Since Become Outdated

The right to mine is a fundamentally traditional American idea and conjures images of the old western miner ready to discover gold in the mountainous regions of the West. However as Wilkinson and other experts recognize, "the old-time prospector with pickax and burrow has virtually ceased to exist as a serious market participant."[21] Today, very few individuals set out to discover new mining sites, and instead large companies have taken over the industry.[22] Additionally, most mining regions have already been worked over and there are little resources left for the small, independent miner to discover and excavate.[23]

Therefore Wilkinson suggests, "the miner's way of life ought to be preserved, but that goal can be achieved without tying up millions of acres of public property by the outmoded "right to mine" system."[24] Additionally, many of the miners who obtained mining rights to sites are no longer alive and as a consequence there are many abandoned mines in the West with no official owner. Even the few miners who are still active and possessory of their rights, do not contribute enough to the mining industry to keep this kind of system afloat.

[17] *Id.* at 48.
[18] *Id.* at 49.
[19] *Id.*
[20] *Id.* at 65.
[21] *Id.* at 70.
[22] *Id.*
[23] *Id.*
[24] *Id.* at 71.

Consequently, large companies and corporations under the Hardrock Act can acquire these claims, extract any lingering mineral deposits without a tax or royalty cost, and abandon the areas, without being held liable for cleanup or any further environmental protections.[25] The absence of government regulation on these public domain lands is an incentive for mining companies to develop the lands, at very little cost to the company.

3. Environmental Concerns of the Hardrock Act

However, the gravest problem with the Hardrock Act is its effect on the environment. Because the Hardrock Act has no environmental provisions or safeguards in the statute, the toxic waste[26] left behind at mining sites has continued to spread into the groundwater and leak into rivers, lakes, and aquifers.[27] Acid mine drainage, a process in which minerals found in mining waste combine with oxygen-rich water to form sulfuric acid is common.[28] Sulfuric acid is both highly corrosive and can dissolve other underground heavy metals in the land or water.[29] When this drainage flows downstream and into water sources, "aquatic life virtually disappears and the river bottom becomes covered with a layer of reddish slime that often contains heavy metals."[30] This can cause substantial damage to species, such as fish and plants located in the waters, as well as damage to the wildlife that may rely on the affected rivers and streams.[31] This can be especially damaging, as "acid mine drainage water can be 20 to 300 times more acidic than acid rain".[32] When such large quantities are released into the environment, as in the Animas River spill, entire species can become affected and even extinguished.[33]

B. The Gold King Mine

The Gold King Mine, located in Silverton, Colorado, and the site of the spill into the Animas River, is just one of the many abandoned mining sites that has been neglected due to the failures of the Hardrock Act. Historically, Gold King Mine was commissioned in the late1880s

[25] *Id.*
[26] *See id.* Typical minerals used in mining, such as pyrite and other metal sulfide ores, combine with water to form toxic waste.
[27] *Id.* at 49.
[28] *Id.*
[29] *Id.*
[30] *Id.*
[31] *Id.*
[32] *Id.*
[33] *Id.*

and became a site to extract silver, gold, copper, and lead.[34] Olaf Nelson, a local miner who worked at the nearby Samson mine, originally discovered and claimed the mine in 1887.[35] When Nelson died a few years later, Willis Z. Kinney, along with two investors, bought Nelson's claim and created what became the Gold King Mining and Milling Company, in 1894.[36] The Gold King Mining and Milling Company then patented their claim and developed the area.[37] Although business was booming at the time, inspiring the Gold King Mining and Milling Company to build an aerial tramway and functioning mill, the process slowed during the twentieth century and production eventually stopped in 1923.[38] Ownership of Gold King Mine changed hands over the years, but eventually the mine was decommissioned in 1991 and consequently abandoned.[39]

However, the waste from the former mining operations was left behind and has been consequently leaking into the groundwater over the years. Gold King Mine is located near various other abandoned mines in the San Juan Mountains, including the Red, Bonita, and Sunnyside Mines.[40] The tunnel connecting these mines is a source of controversy related to the extent of contamination in the groundwater, and was a factor in why the Environmental Protection Agency (EPA) decided to clean up the Gold King Mine, which led to the eventual spill into the Animas River.[41]

1. What Was Going On?

The "American Tunnel", a new access point that the owner of Sunnyside Mine dug, may have affected the groundwater surrounding Gold King Mine and the other mines in the area, causing a shift in water flow.[42] Although the American Tunnel has since been plugged due to the shut down of Sunnyside Mine, it remains a controversial factor in the

[34] Colorado Department of Public Health & Environment, *Gold King Mine background,* https://www.colorado.gov/pacific/cdphe/gold-king-mine-background.

[35] Colorado Public Radio Staff, *The Gold King Mine: From An 1887 Claim, Private Profits and Social Costs*, COLORADO PUBLIC RADIO (Aug. 17, 2015), http://www.cpr.org/news/story/gold-king-mine-1887-claim-private-profits-and-social-costs.

[36] *Id.*

[37] *Id.*

[38] *Id.*

[39] Colorado Department of Public Health & Environment, *supra* note 34.

[40] Colorado Public Radio, *supra* note 35.

[41] *Id.*

[42] *Id.*

blame-game of the Animas River disaster.[43] According to an internal review summary report conducted by the EPA, "since closure of the American Tunnel, the water quality in the Animas River has degraded progressively due to the impact of drainage from the American Tunnel and other newly draining adits."[44]

As discussed above, when groundwater combines with oxygen and iron sulfide, which is found naturally in the area, it forms sulfuric acid, which both contaminates the waters and also eats heavily at underground materials, such as copper, lead, arsenic, and zinc, in turn further contaminating the surrounding waters.[45] While this "sludge" is damaging, it usually remains underground and although it may seep into the groundwater, it does so in extremely small quantities. However, as in this situation, one small mistake can lead to a spring, which ultimately forces all of the sludge to gush into the waters surrounding the mines.

2. Why Were They Cleaning Up?

According to their summary report, the EPA was planning on plugging the Red and Bonita Mines, but decided to try and stabilize Gold King Mine first, to prevent any increased water or mineral flow through the connected tunnel.[46] In a press release from the EPA's website, they stated that the EPA was conducting an investigation of Gold King Mine on August 5, 2015, to "assess the on-going water releases from the mine, treat mine water, and assess the feasibility of further mine remediation."[47] The release went on to say, "While excavating above the old adit, pressurized water began leaking above the mine tunnel, spilling about three million gallons of water stored behind the collapsed material into Cement Creek, a tributary of the Animas River.[48] Apparently the goal of the EPA team at Gold King Mine was to install a pump to draw out the toxic water and then plug the mine to prevent any future leaks of contaminated water.[49]

---

[43] *Id.*

[44] An adit is a horizontal opening by which a mine is entered, or drained. *See* The Oxford English Dictionary I 155 (2nd ed. 1989); Environmental Protection Agency, Summary Report, *EPA Internal Review of the August 5, 2015 Gold King Mine Blowout,* 5, http://www2.epa.gov/sites/production/files/2015-08/documents/new_epa_nmt_gold_king_internal_review_report_aug_24_2015fnldated_redacted.pdf.

[45] Colorado Public Radio, *supra* note 35.

[46] *Id.*

[47] Environmental Protection Agency, *Emergency Response to August 2015 Release from Gold King Mine*, http://www2.epa.gov/goldkingmine.

[48] *Id.*

[49] Colorado Public Radio, *supra* note 35.

C. The Accident

On August 4th, the EPA team began excavation on the Gold King Mine adit. According to their summary report, the EPA states, "the goal was to find competent bedrock within which to anchor a support structure for the [a]dit."[50] On August 5th, the team then evidently hit a blockage, which caused the pressurized water to start pouring out at uncontrollable rates.[51] The EPA stated, "during the excavation, the lower portion of the bedrock face crumbled away and there was a spurt of water from the area in the lower part of the excavation area."[52] Pressurized water from the spurt continued to heavily flow for the next hour and although at first clear, soon became a red/orange color.[53] The EPA was surprised at the high pressure of the water in the adit, stating it was unexpected and unanticipated, and thus the work plan was ultimately insufficient.[54] The team speculates as to why the actual pressure of the water could not be determined, but it remains unclear.[55]

The EPA suggests that a drilling process could have been used to determine the pressure of the water behind the asset, but would likely have been very costly and would have required significantly more resources and time.[56] The summary report emphasizes that although the team was qualified, experienced, and followed all standard procedures, "the underestimation of the water pressure in the Gold King Mine workings is believed to be the most significant factor relating to the blowout."[57]

Over the next few days following the spill, the EPA claimed responsibility and assessed that 3,043,067 gallons of water were discharged from the Gold King Mine and were now flowing into the Animas River and surrounding waters.[58] The water then turned a bright mustard yellow color, causing alarm throughout the area and garnering attention from the media. The media reported high levels of lead, arsenic, beryllium, cadmium, and mercury, as well as iron, zinc, and copper, in the river and commented on concerns for the rivers ecosystems and fish populations.[59] The spill affected areas in Colorado, New Mexico, and

[50] Environmental Protection Agency, *supra* note 44 at 5.
[51] *Id.*
[52] Environmental Protection Agency, *supra* note 44 at 5.
[53] *Id.*
[54] *Id.* at 7.
[55] *Id.*
[56] *Id.* at 9.
[57] *Id.*
[58] Environmental Protection Agency, *How Did the August 2015 Release from the Gold King Mine Happen?*, http://www2.epa.gov/goldkingmine.
[59] Mariano Castillo, *Pollution Flowing Faster than Facts in EPA Spill*, CNN

Utah, as well as affecting areas of the Navajo Reservation.[60]

D. The Long-Term Effects

In the days following the accident, the EPA claimed responsibility and regularly updated their website with daily developments concerning the spill and the Animas River. On August 10, 2015, just five days after the spill, the EPA stated their primary objectives which included, "working with federal, state, tribal and local authorities to make sure that people continue to have access to safe drinking water, ensure appropriate precautions are in place for recreational use and contact with river water, evaluate impacts to aquatic life and fish populations, and stop the flow of contaminated water into the watershed at the Gold King Mine site."[61] The EPA emphasized that they were regularly collecting and assessing the water quality and assessing the impact to wildlife.[62] They also suggested for the community to take precautions after any contact with the river water.[63]

On August 14, 2015, the ban on recreational use of the Animas River had been lifted.[64] By September 2, 2015, the EPA released data results declaring that the metal concentration levels were back to, and maintaining, pre-event levels.[65] The EPA collected samples regularly in various locations to screen for unsafe conditions.[66] Additionally, the Colorado Department of Public Health and Environment issued a press release, also on September 2, 2015, stating that trout from the Animas River were safe to eat.[67]

Through a series of regular website updates, the EPA informed the public that they were working with the State of Colorado Division of Parks and Wildlife, the New Mexico Department of Game Fish, the Navajo Nation, and the U.S. Fish and Wildlife Service to determine any

(Aug. 10, 2015, 10:20 PM), http://www.cnn.com/2015/08/10/us/colorado-epa-mine-river-spill/.

[60] Brumfield, *supra* note 1.

[61] Environmental Protection Agency, August 10, 2015 Press Release, (Aug. 10, 2015), http://www2.epa.gov/goldkingmine/press-releases-and-updates-gold-king-mine-response.

[62] *Id.*

[63] *Id.*

[64] Colorado Public Radio, *supra* note 35.

[65] Environmental Protection Agency, *Data from Gold King Mine Response,* http://www2.epa.gov/goldkingmine/data-gold-king-mine-response.

[66] *Id.*

[67] Colorado Department of Public Health & Environment, *Trout from the Animas River safe to eat, tests show,* Press Release (Sept. 2, 2015), https://www.colorado.gov/pacific/cdphe/News/Animas-trout.

additional impacts on wildlife in and around the river.[68] Together, they assessed the wildlife in the river and determined that no fish had died due to the spill, ducks had returned to the river, and no other wildlife seemed to be affected.[69] While encouraging, all agencies noted that there could be unforeseen long-term effects and will thus continue regular testing.[70]

Various updates on the EPA's website provide information regarding the metallic levels in the water and any affect on wildlife, fish, and drinking water. An update on October 28, 2015 reported, "Surface water and sediment concentrations are now below recreational screening levels" and "the river system as a while is being maintained at pre-event conditions."[71] However, almost every previous press release informed the public that the metal concentrations in water and sediment can fluctuate.[72] The EPA stated their long-term concern is "the effect on the entire watershed of metals deposited in sediments and their release during high-water events and from recreation use over time," as the sediments can cause risk to aquatic life and fish.[73] Thus although the water levels and present aquatic life are currently unharmed as a result of this spill, the metallic levels may be buried in the sediment on the bottom of the river and could be stirred up over time. The EPA maintains that they will continue to monitor the levels of the river and continue to update the public on their findings.[74]

On February 5, 2016, the EPA declared that researchers conducted a preliminary analysis of the fate and transport of the metals in the Animas River.[75] Through a series of monitored sites located down the length of the river, the EPA states, "monitored data showed significant decline in dissolved concentrations with increasing distance from mine" and the Gold King Mine "dissolved metal concentrations returned to background

[68] Environmental Protection Agency, *Frequent Questions Related to Gold King Mine Response*, http://www2.epa.gov/goldkingmine/frequent-questions-related-gold-king-mine-response#impacts.

[69] *Id.*

[70] *Id.*

[71] Environmental Protection Agency, *Gold King Mine Data, October 28, 2015* (Oct. 28, 2015). http://www2.epa.gov/goldkingmine/gold-king-mine-data-october-28-2015.

[72] *Id.*

[73] Environmental Protection Agency, *supra* note 68.

[74] *Id.*

[75] Environmental Protection Agency, *Gold King Mine Acid Drainage Release: Draft Analysis of Fate & Transport of Metals in the Animas & San Juan Rivers (*Feb. 5, 2016), http://www.epa.gov/sites/production/files/2016-02/documents/analysisfatetransportmetals.pdf.

within hours after the plume passed at all sites."[76] Essentially, this release appears consistent with reports of the spill at the time. The EPA does suggest that there could be continual cumulative effects that are difficult to distinguish at the moment, and there are suggestions that the metals could be stirred up once again due to the snowmelt in the spring and consequent runoff into the river.[77] As this is an on-going project, close monitoring will continue on the river. Additionally, the EPA has released numerous other updates concerning their future plan of action to prevent an occurrence such as the Animas River spill from happening again, and in regard to other mines in the area.[78]

III. HOW WILL THE ANIMAS RIVER SPILL BE ADDRESSED NOW?

Although the Animas River and related waters are currently back to normal levels and the spill proved to be not as devastating as originally believed, the long-term lasting effects could prove to be quite damaging. The Gold King Mine spill into the Animas River is just one example of the severe impact toxins located in abandoned mines can have on the environment. The lack of cleanup of these mines in the western United States has led to similar incidents like this occurring throughout the country, and has proven to be extremely harmful and dangerous for the environment.

This spill, which gained notoriety through the media, opened up the political conversation about what to do with these abandoned mining sites and how to best take care of them. After the Animas River spill, the Colorado Department of Public Health and Environment "identified the worst 230 leaking mines draining into creeks and rivers."[79] Of the 230 mines, 148 have yet to be evaluated.[80] The most prominent issue seems to revolve around the outdated Hardrock Act and the liability requirements for those who are willing to clean up the areas, as well as

[76] The EPA defines plume as the section of river containing contaminants released from the Gold King Mine. The plume moves downstream over time. *Id.*

[77] *Id.*

[78] Environmental Protection Agency, *Press Releases and Updates for Gold King Mine Response*, http://www.epa.gov/goldkingmine/press-releases-and-updates-gold-king-mine-response.

[79] Bruce Finley, *Colorado Counts on Gold King to Spur Cleanup of Leaking Old Mines,* THE DENVER POST (Feb. 14, 2016, 12:01 AM), http://www.denverpost.com/animas-river/ci_29514933/colorado-counts-gold-king-spur-cleanup-leaking-old.

[80] *Id.*

the lack of funding. While there are some safeguards and provisions currently in play to help the environment and prevent this kind of incident from occurring, they are falling woefully short of adequacy.

A. Clean Water Act

The *Hydro Resources III* majority improperly concluded that the "Although the Hardrock Act does not contain environmental protections or provisions, the Clean Water Act is the federal law in the United States, which governs water pollution. The objective of the Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[81] The Clean Water Act provides that a permit is required for any kind of discharge of a pollutant from a point source into the navigable waters of the United States.[82]

However, sections 1319(c)(1) & 1319(c)(2) of the Clean Water Act provide that "any person who negligently (or knowingly) introduces into a sewer system or into a publicly owned treatment works any pollutant or hazardous substance which such person knew or reasonably should have know could cause personal injury or property damage…" shall be subject to a penalty of a fine or imprisonment.[83] Thus in the case of the Gold King Mine, the EPA could be held liable for their cleanup efforts due to the misfortune of the accident, if they are found to have negligently or knowingly released pollutants into the waters of the United States.[84] This liability loophole in the Clean Water Act is a significant impediment to cleanup efforts for abandoned mines such as the Gold King Mine. While the Clean Water Act typically provides exemptions for federal agencies and the EPA, who would normally obtain permits, their potentially "negligent or knowing" mishap here, can render them liable.[85]

---

[81] 33 U.S.C.A. § 1251.

[82] 33 U.S.C.A. § 1344.

[83] 33 U.S.C.A. § 1319(c)(1)-(2).

[84] 33 U.S.C.A. § 1319(c)(1).

[85] On October 6, 2016, the U.S. Attorney's Office in Colorado declined to prosecute any Environmental Protection Agency workers involved with the spill. This decision was made based on information submitted by the EPA's Office of Inspector General to federal prosecutors after a year-long probe. The EPA will now be responsible for determining any administrative action against any employees. Several Republican Congress members are unhappy with this decision and are demanding a briefing to provide an explanation for the Department of Justice's decision. Grace Hood, *US Prosecutors Pass on Criminal Charges for EPA Worker in Gold King Spill,* COLORADO PUBLIC RADIO (Oct, 13, 2016), https://www.cpr.org/news/story/us-prosecutors-pass-on-criminal-charges-for-epa-worker-in-gold-king-spill.

Furthermore, the statute defines the term "person" as "an individual, corporation, partnership, association, State, municipality, commission, or political subdivision of a State, or any interstate body."[86] Therefore the EPA, although a federal government agency, could still be liable for the penalties as addressed in the statute. This has the effect of discouraging both federal agencies, like the EPA, as well as ordinary citizens from attempting to salvage these abandoned waste sites. In an interview with the EPA on-scene coordinator at the site of the spill, Grace Hood, Colorado Public Radio's Energy and Environment Reporter, identified the main issue, stating, "[r]ight now, a primary determinant to voluntary cleanup efforts involve the ongoing liability that groups would have if they attempt cleanup under the Clean Water Act."[87] Therefore the Clean Water Act is, in a way, not a solution, but rather a deterrent, for cleanup efforts.

B. Superfund

To address environmental pollution Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as a way to clean up the nation's worst hazardous waste sites and to respond to local and nationally significant environmental emergencies.[88] Also known as Superfund, CERCLA "provides a Federal 'Superfund' to clean up uncontrolled or abandoned hazardous-waste sites as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment."[89] Additionally, "through CERCLA, EPA was given power to seek out those parties responsible for any release and assure their cooperation in the cleanup."[90]

While the Superfund is a satisfactory way to clean up hazardous sites, and hold those responsible liable, it fails to cover every circumstance. In the case of the Gold King Mine, and thousands of other abandoned mines across the western United States, the EPA can be held

[86] 33 U.S.C.A. § 1362.

[87] Grace Hood, *Colo. Gold King Mine Continues to Leak Waste as Winter Sets In*, COLORADO PUBLIC RADIO broadcast, NPR (Oct. 27, 2015, 8:50 AM), http://www.npr.org/2015/10/27/452163693/colo-gold-king-mine-continues-to-leak-waste-as-winter-sets-in.

[88] 42 U.S.C. §9601; Environmental Protection Agency, *Superfund History*, http://www2.epa.gov/superfund/superfund-history.

[89] Environmental Protection Agency, *Summary of the Comprehensive Environmental Response, Compensation, and Liability Act*, http://www2.epa.gov/laws-regulations/summary-comprehensive-environmental-response-compensation-and-liability-act.

[90] *Id.*

solely liable for any catastrophes that may occur from attempting to clean up the mines. Because so many mining sites are no longer operating, the owners are often unable to be found or – in the case of corporate owners – have long since dissolved. The outdated Hardrock Act, which protected the rights of the private miners and corporations, has left the EPA and the United States with abandoned and ownerless mines that continue to leak toxic chemicals into the environment.

Thus if the EPA decides to go in and clean up a site, as they did with the Gold King Mine, they can, and likely will, be held liable for any spillage or further damage. This in turn will be paid for either by the Superfund itself, or most likely from taxpayers. In the case of the Gold King Mine, cleanup efforts pushed beyond $14.5 million, which will come from the EPA and the taxpayers, letting the mining industry, the industry actually responsible for the waste at the sites, completely off the hook.[91] Hence the hesitation of many to clean up these hazardous sites, due to the potential liability.

In short, the Superfund is a great way to curb current environmental disasters but is not far-reaching enough to account for past pollution. Additionally, in order to receive funding from the Superfund, the site must be on the Superfund list. Therefore areas which haven't made yet it on to the "worst of the worst" list would not be eligible for funding to help the cleanup effort.

On February 22, 2016, the town of Silverton unanimously voted to seek Superfund status for the Gold King Mine area, which would include forty-six mines.[92] While the town has been hesitant about pursuing Superfund status in the past, largely due to concerns of creating a permanent bar on the mining industry, as well as the risk of bad publicity, the Animas River spill influenced the residents and town officials to change their minds.[93] The town officials believe that seeking Superfund status is the best way to both expedite the cleanup of the Animas River and also to prevent future disasters in this specific area, now coined the "Bonita Peak Mining District."[94]

---

[91] Hood, *supra* note 87.

[92] Grace Hood, *After Years of Opposition, Silverton OKs Superfund Plan,* COLORADO PUBLIC RADIO (Feb. 23, 2016, 11:43 AM), https://www.cpr.org/news/newsbeat/after-years-opposition-silverton-oks-superfund-plan.

[93] *Id.*

[94] Bruce Finley, *Silverton, San Juan County Vote Yes for Superfund Cleanup of Old Mines,* THE DENVER POST (Feb. 22, 2016, 2:11:59 PM), http://www.denverpost.com/news/ci_29547638/silverton-san-juan-county-vote-possible-superfund-cleanup.

In order to decide whether to place Gold King Mine and the Bonita Peak Mining District on their Superfund list, the EPA must determine the states' position on sites the EPA is considering placing on the National Priorities List (NPL).[95] The NPL, financed under the Superfund, is a "list of high-priority sites that have releases of hazardous substances, pollutants or contaminants that warrant remedial evaluation and response."[96] The EPA thus sent a letter to Governor John Hickenlooper[97], on behalf of the state of Colorado, as well as letters to the state of Utah, the Ten Tribes Partnership, the Southern Ute Indian Tribe, and the Ute Mountain Tribe on February 19, 2016, seeking all of their concurrences.[98] On February 29, 2016, Governor Hickenlooper sent a letter back to the EPA, affirming Colorado's support for adding the Bonita Peak Mining District to the National Priorities List.[99] Additionally, the EPA sent letters to the state of New Mexico on March 17, 2016, regarding the same matter.[100]

If placed on the NPL and identified as a Superfund site, the EPA would begin initial cleanup on the area and close monitoring of the site, until it is determined to no longer be a threat to people or the environment.[101] Currently, Colorado has twenty-three Superfund sites and the EPA has only declared three to no longer be a threat.[102] Nationally, out of 1,767 Superfund sites, only 391 have been completed.[103] Clearly, the process takes a very long time and funding continues to be an issue, with recent slashes by Congress to the budgets

[95] Environmental Protection Agency, *Colorado Governor John Hickenlooper's Letter in Support of Bonita Peak Mining District NPL Listing*, https://www.epa.gov/goldkingmine/colorado-governor-john-hickenloopers-letter-support-bonita-peak-mining-district-npl.

[96] *Id.*

[97] *Id.*

[98] *See* Environmental Protection Agency, *Letters to the State of Utah, the Ten Tribes Partnership, the Southern Ute Indian Tribe and the Ute Mountain Tribe About Potentially Adding the Bonita Peak Mining District to the Superfund National Priorities List*, https://www.epa.gov/goldkingmine/letters-state-utah-ten-tribes-partnership-southern-ute-indian-tribe-and-ute-mountain.

[99] Environmental Protection Agency, *supra* note 95.

[100] Environmental Protection Agency, *Letters to the New Mexico Congressional Delegation Regarding the Long-Term Monitoring Activities and Claims for Reimbursement*, https://www.epa.gov/goldkingmine/letters-new-mexico-congressional-delegation-regarding-long-term-monitoring-activities.

[101] Bruce Finley, *EPA: "Nowhere Near" Needed Funds to Clean Up Colorado's Toxic Mines,* THE DENVER POST (Dec. 8, 2015, 6:48:39 PM), http://www.denverpost.com/news/ci_29220612/epa:-%22nowhere-near%22-needed-funds-to-clean-up-colorados-toxic-mines.

[102] *Id.*

[103] *Id.*

of the Superfund program and remedial cleanup projects.[104] As of early September 2016, Gold King Mine was added to the EPA's Superfund National Priorities List.[105] This step will pave the way for a multimillion-dollar clean-up, if Congress approves the Superfund listing. However, it is also clear that past pollution still remains a problem.

IV. GOOD SAMARITAN LEGISLATION

As this Note has illustrated, the current environmental legislation in place is not extremely effective in addressing situations such as the Gold King Mine spill. As a way to address this type of problem, the state of Pennsylvania passed the Environmental Good Samaritan Act, and is currently the only state with environmental Good Samaritan legislation.[106]

A. Background

Traditionally, Good Samaritan laws have been used to protect ordinary citizens from liability when providing aid in emergency situations. Initially, Good Samaritan laws referred solely to medical professionals and emergency personnel, depending on the state, and essentially "offer[ed] immunity from civil liability to any party who volunteers his services to an imperiled person without having the legal duty to do so."[107] Since 1959 every state has now adopted some kind of Good Samaritan law, as a way to encourage citizens to aid in certain situations, with thirty-seven states having laws granting immunity to *anyone* who provides assistance.[108] "Good Samaritan laws seek to shield altruistic rescuers from possible liability for any negligent acts or omissions arising out of their rescue attempts."[109] Although Good Samaritan laws almost unanimously relate to emergency medical situations, the basic principle behind the law should extend to all "rescue" situations, not just those involving human care.

While each state statute varies, there are five components that are

[104] *Id.*

[105] Darryl Fears, *Colorado Gold Mine is One of the EPA'S New Superfund Pollution Sites,* THE WASHINGTON POST (Sept. 7, 2016) https://www.washingtonpost.com/news/energy-environment/wp/2016/09/07/colorado-gold-mine-is-one-of-the-epas-new-superfund-pollution-sites/?utm_term=.a515f12b57d0.

[106] 27 Pa. C.S.A. §8101.

[107] Eric A. Brandt, *Good Samaritan Laws – The Legal Placebo: A Current Analysis*, 17 AKRON L. REV. 303 (1983-1984).

[108] *Id.* at 309.

[109] *Id.* at 304.

usually found in Good Samaritan laws, with each statute comprising at least two of the five.[110] The five components are:

> 1) each statute must enumerate the class or classes of persons to which the immunity is offered, 2) there must be a good faith state of mind on the part of the rescuers rendering emergency assistance, 3) the care must be rendered gratuitously, 4) there may be a limit to the places in which the emergency aid must be given to qualify for immunity, and 5) there may be a minimum acceptable standard of conduct other than the common law "reasonable man" standard.[111]

The Colorado Good Samaritan Statute, C.R.S.A. § 13-21-108, entitled "Persons Rendering Emergency Assistance Exempt from Civil Liability," for example, contains components one through four and covers any person who in good faith renders emergency care, gratuitously, at the place of the emergency or accident.[112] Importantly, Good Samaritan laws are enacted to *shield* altruistic rescuers, who do not have a duty to aid, and not *create* an affirmative duty for all citizens to provide aid.[113]

Critics of the laws have suggested that the Good Samaritan statutes do not in fact encourage citizens to provide aid in emergency situations and that lawsuits can occur regardless, due to the vague and often ambiguous language of the statutes.[114] Because the "good faith" and "reasonable man" standards, as well as what constitutes as the "emergency site," can be interpreted in a variety of ways, the language of the statutes themselves become critical.

B. Pennsylvania Environmental Good Samaritan Act

Passed in December 1999, Pennsylvania is currently the only state that has enacted Good Samaritan legislation in an environmental context. The Environmental Good Samaritan Act protects citizens, landowners, agencies, and organizations who are interested in in reclaiming abandoned lands and addressing water pollution issues, but are reluctant and hesitant to do so because of potential liabilities.[115] Essentially, this

[110] *Id.* at 308.
[111] *Id.* at 308-309.
[112] Colo. Rev. Stat. § 13-21-108 (Supp. 1982).
[113] Brandt, *supra* note 107 at 330.
[114] Dov Waisman, *Negligence, Responsibility, and the Clumsy Samaritan: Is there a Fairness Rationale for the Good Samaritan Immunity?*, 29 GEORGIA STATE UNIVERSITY L. REV. 608, 635-636 (2013).
[115] 27 Pa. C.S.A. § 8102 (1999).

statute provides that any person or organization who attempts a reclamation project or a water pollution abatement project is immune from liability from any injury or pollution resulting from such project, as well as operating, maintaining, or repairing the water treatment facilities. Additionally, such persons shall not be liable for any civil or environmental penalties resulting from such actions.[116] The statute states its purpose "to improve water quality and to control and eliminate water pollution resulting from mining or oil or gas extraction or exploration by limiting the liability which could arise as a result of the voluntary reclamation of abandoned lands or the reduction and abatement of water pollution."[117]

The Environmental Good Samaritan Act also provides that any landowner is eligible for protection under the act, as well as any person, corporation, nonprofit organization, or government entity that participates in the project.[118] While the Environmental Good Samaritan Act is principally concerned with abandoned mine sites, it also addresses unplugged oil and gas wells.[119]

Unlike the Clean Water Act, the Environmental Good Samaritan Act provides that it is not applicable only if landowners "deliberately or recklessly cause injury or property damage."[120] This is a far more lenient standard for the person or organization performing the cleanup effort, compared to the "negligently or knowingly" standard as in the Clean Water Act. Thus if Colorado enacted similar legislation, the EPA would likely not be held liable for the Gold King Mine spill, as they did not deliberately or recklessly cause property damage.[121] The Environmental Good Samaritan Act provides not only a more straightforward standard for reclamation and water pollution projects, but also encourages

[116] 27 Pa. C.S.A. § 8107 (1999).

[117] *Id.*

[118] Department of Environmental Protection, *Environmental Good Samaritan Act,* http://www.amrclearinghouse.org/Sub/LEGAL/GoodSamaritanFactsheet.pdf.

[119] *Id.*

[120] *Id.*

[121] Black's Law Dictionary defines reckless as "characterized by the creation of a substantial and unjustifiable risk of harm to others and by a conscious (and sometimes deliberate) disregard for or indifference to that risk; heedless; rash. Reckless conduct is much more than mere negligence: it is a gross deviation from what a reasonable person would do." Although it could be argued that the EPA was careless in its handling of the Gold King Mine, it might be going too far to label them as reckless in this context, especially because they were setting out with positive intentions to fix the mine. BLACK'S LAW DICTIONARY 1462 (10th ed. 2009).

landowners, companies, and agencies to take on such projects without fear of liability.

C. Current Efforts to Implement

While Pennsylvania is currently the only state to enact Environmental Good Samaritan legislation, Colorado and local state politicians have been actively working to pass a similar statute, as a way to both address the issue of abandoned mines in the western United States and to prevent watersheds, like the Animas River spill, from occurring. One such proposed bill is United States Representative Raul Grijalva's Hardrock Mining Reform and Reclamation Act of 2015.[122] The bill would mandate royalties for hardrock mining operations on public lands, created a fund for cleanup of abandoned mines, and include a Good Samaritan provision.[123]

However, supporters of the bill assert that Good Samaritan legislation alone will not solve the problem, as nonprofit groups and local governments, let alone ordinary citizens, simply do not have the funds to even attempt to clean up the abandoned mines. While Good Samaritan legislation may encourage altruistic citizens to clean up the areas, they simply cannot afford it without some kind of funding.

Republican representatives, who propose Good Samaritan legislation, but are averse to requiring royalties for mining operation to pay for cleanup, strongly resist Representative Grijalva's bill, as well as other similar proposed reforms.[124] These representatives argue that Grijalva's bill, which would require 8% royalties for new hardrock mines and 4% royalties for existing mines, would discourage all mining on public lands, as royalties were never charged before, and significantly affect the profitable mining industry.[125] Additionally, the representatives argue that companies would be discouraged to reclaim any of the mines because of the impending liabilities that could potentially attach if mistakes are made or accidents occur.[126] Other critics have further argued that new legislation could weaken current environmental laws, such as the Clean Water Act and Superfund, which were put into place to directly address the same environmental concerns.

---

[122] David O. Williams, *Colorado Dems Back Mining Reform, GOP Focused on Good Samaritan Law,* THE COLORADO STATESMEN (Aug. 21, 2015), http://www.coloradostatesman.com/content/996047-colorado-dems-back-mining-reform-gop-focused-good-samaritan-law.

[123] *Id.*

[124] Williams, *supra* note 122.

[125] *Id.*

[126] *Id.*

Although proposed Good Samaritan legislation has failed at least ten times previously, former Colorado Senator Mark Udall proposed a more simplified bill in 2013 as a way to resolve the past, current, and future environmental problems without meeting such resistance from opposing parties.[127] Udall's proposed legislation was to simply amend section 402 of the Clean Water Act, which specifically states the requirements for a permit in order to discharge any pollutants into United States waters, and add a Good Samaritan provision.[128] By simply amending an already enforceable statute, Udall believed the bill could gain more support and be a first step in the right direction.[129]

The proposed Act, entitled the "Good Samaritan Cleanup of Abandoned Hardrock Mines Act of 2013" (S.1443) (Good Samaritan Cleanup Act), would allow for individuals to obtain Good Samaritan discharge permits to "propose a project, the purpose of which is to remediate, in whole or in part, actual or threatened pollution caused by historic mine residue at an inactive or abandoned mine site."[130] The procedure of requiring a permit would ensure that only qualified, experienced individuals would be pursuing these cleanup efforts, not just anyone. Additionally, the Good Samaritan Cleanup Act would require that the Good Samaritan(s) made no contribution to the "mine residue" at the site, that the site does not have an "identifiable owner or operator," and that the site is currently inactive.[131] The Good Samaritan Cleanup Act also calls for the eligible applicant to propose a detailed remediation plan in order to even apply for the permit.[132] Most importantly however, the Good Samaritan Cleanup Act states that the holder of the permit "shall not be subject to enforcement under any provision of this for liability for any past, present, or future discharges at or from the abandoned or inactive mining site…"[133] Finally, the permit, if granted, would terminate ten years after the enactment date.[134]

The purpose of the Good Samaritan Cleanup Act is solely to encourage citizens, private corporations, and non-profit organizations to

[127] Aaron Mintzes, *Sen. Udall and Rep. Tipton Introduce Good Samaritan Bill to Encourage Mine Cleanup*, EARTHWORKS (Aug. 2, 2013), https://www.earthworksaction.org/earthblog/detail/sen._udall_and_rep._tipton_introduce_good_samaritan_bill_to_encourage_mine#.VuzPJMf4vvk.

[128] 33 U.S.C.A. § 1342.

[129] Mintzes, *supra* note 127.

[130] S. 1443, 113th Cong., 1st Sess. (2013-2014), https://www.congress.gov/bill/113th-congress/senate-bill/1443/text.

[131] *Id.*

[132] *Id.*

[133] *Id.*

[134] *Id.*

clean up the abandoned mines and prevent future pollution from occurring, with incurring liability should anything go wrong. Although former Senator Udall, Senator Gardner, and other representatives have been pushing for this kind of legislation to be passed, and the Good Samaritan Cleanup Act has made it to the Senate's Environment and Public Works Committee, no further action has yet been taken. In the wake of the Animas River spill however, it is essential that new legislation be heard and eventually passed to both address previous and current environmental concerns, and to prevent future disasters.

V. PROPOSED LEGISLATION

While Senator Udall's Good Samaritan Cleanup Act is certainly a step in the right direction, it is simply a *first* step, which does not encompass all of the issues at hand. The two major issues facing these abandoned mines and the resulting environmental disasters are liability concerns and funding. While enacting a type of Good Samaritan legislation could solve the liability concerns, it also has the potential to create more incentive for the mining industries to take advantage of the land and leave all of the cleanup work for those altruistic, willing citizens or organizations. This could lead to even more damage than before.

Additionally, leaving everything up to Good Samaritans is unrealistic, as most citizens, nonprofit organizations, local governments, and even state governments simply do not have the funds to enact such remediation at these sites, let alone funds to cover any potential mishaps that may occur. Requiring the mining companies to pay royalties on new and previous mining sites could create a source of funding, but would likely be met with significant resistance from the mining industry and furthermore disincentivize the industry, if they would also be responsible for any potential liabilities.

This paper seeks to propose a workable solution that addresses both of these issues through a combination of the current proposed bills and acts. This new law would be divided into and address two significant sections: the Good Samaritan provision and the source of funding.

A. Good Samaritan Provision

The Good Samaritan provision of this proposed legislation would build off of Senator Udall's proposal, in that it would require eligible applicants to apply for a permit to address the cleanup or alteration of abandoned mine sites. Like the proposed Good Samaritan Cleanup Act, eligible applicants would have no connection to the site's former pollution and would need to propose a detailed remediation plan to the

EPA before beginning. The EPA, if it approves, would grant the permit to the Good Samaritans and would need regular information and updates about the progress of such cleanups.

If granted, the Samaritans would be required to use their own funding for such cleanup efforts (an issue which will be addressed in section (b)), but would have the freedom under their approved plan to address the land as they wish, without further government or agency interference. The permit would also terminate after ten years, but would not chain the Samaritans to the site for the entire ten years if the process failed, was abandoned, or simply finished. Essentially, the permit would act as a temporary access to the land and not a title of ownership or further rights. Most importantly, this act would provide that the Samaritans are not liable in any way for past, present, or future discharges of pollution from the site into the ground or waters of the United States

While this proposed provision seems to give the Samaritans a significant amount of leeway, this is essential to encouraging ordinary citizens, as well as nonprofit groups, local governments, and state governments to get involved. With this legislation, the Samaritans have almost nothing to lose. Dedicated organizations who are willing to clean up abandoned mine sites, would have the freedom to construct their own plans and carry them out the way they see fit. Requiring a permit would satisfy the Clean Water Act requirements and would make sure that the EPA (and Government) is involved in overseeing the process, but in a non-interfering way. Through the permit process the EPA would be able to grant permits to only specifically qualified individuals. The liability provision would also exempt the EPA and the Samaritans from any liability provision from potential disasters.

B. Funding

While this satisfies liability concerns, funding remains an issue. Ordinary citizens and nonprofit groups simply do not have the funds needed to address the abandoned mine sites. Even the EPA and other governmental agencies do not necessarily have enough funds and instead would need to rely on the taxpayers.[135] Therefore, a royalty fee must be enforced to all current and future miners and mining companies, similar to the royalties used for oil and gas resources. Currently, royalties are required for the oil and gas industries, and has become a uniform rule, although it has been overlooked in the mining industry.[136] A blanket percentage would thus be applied to all mining sites, which would keep

[135] *See* Finley, *supra* note 101.
[136] *See* Allen, *infra* note 138.

the playing field balanced in terms of competition amongst the industry. These royalty fees would then be solely placed in a Good Samaritan fund, managed by the EPA, which would then be accessed and distributed to the Samaritans with approved permits, to fund the cleanup of sites and any potential mishaps.

Because this solution would likely incite resistance from the mining industry, there would need to be incentives for the mining companies to participate in this royalty program, aside from just being required to participate. One such incentive could be to enact a reduction in royalties, or provide a reimbursement program, which would be triggered once a mining company abandons or finishes with their site, provided they leave the site in a reasonable condition. This would encourage the large mining companies to clean up after themselves and reduce the amount of toxins and chemicals left in the groundwater and area. The reduction in royalties could be applied at the company's next mining site, where they could receive a lower percentage that they would be required to pay. Or, if the company was not planning on moving to a new site, they could receive a reimbursement from the Good Samaritan fund for leaving the environment in a reasonable condition upon their departure.

Another incentive to increase funding could be to remove the mining company from future liability, by requiring a larger royalty fee but releasing the company from responsibility once they depart. Therefore, once the company decides to close or move on from the site, the royalty money in the Good Samaritan fund would provide enough funding to go in and address the site as is. However, there would need to be a strict contract tying the company to the site for a specified period of time and they would need to be held to those agreed upon terms. Otherwise the same problems would arise from companies simply going out of business, or moving on without passing the site to another company.

While these options may decrease the funds available for cleanup, they would also hopefully decrease the amount of abandoned mining sites that need to be addressed for environmental concerns. Additionally, if the industry continues to perform, the royalty requirement would add to the fund periodically. Furthermore, the EPA would monitor the fund closely. Because funding for Superfund sites remains an issue, the Good Samaritan fund would work in conjunction with the Superfund program. With a base amount of funding and the proposed royalty fees from the mining industry, the Good Samaritan fund would be available for the lesser sites that have not yet made it onto the NPL or Superfund list. For example, rather than declaring the Gold King Mine area as a Superfund site (or, if the current status fails), the Good Samaritan fund could take care of this location and leave the Superfund program for even worse off

sites. So while it may seem as though it is taking away money from the Superfund program, it would really be working in conjunction with it.

C. A Rock-Hard Solution

This proposed legislation would serve to satisfy both the liability and funding concerns that are currently at issue. The Good Samaritan provision of the legislation would allow towns, cities, and states, to become involved with the cleanup sites, and not simply turn them over to the federal government. That way citizens would be able to have a say in how their environment is treated and handled from the inside, rather than solely being controlled by outsiders, a common concern of the people of Silverton, for example.[137] Because the EPA and the Government would still be involved with the permitting process, as well as the funding, this legislation would bridge the gap between the local and federal government and encourage them to work together. The monitoring from the EPA would also ensure that the right remedies and procedures are taking place, but at the hands of others, and not the EPA. This would also free the EPA to pursue other Superfund sites and possibly accelerate their processes in those locations.

While the mining industry would likely not favor this proposal, royalty enforcement is extremely common in similar industries, and is the only way to provide a decent source of funding.[138] A blanket percentage would be applied to all mining companies, to keep the playing field balanced and fair. The additional breaks or exceptions in royalties would provide incentives for the mining industry and would provide them with options. By removing liability concerns, the mining industry would likely not be significantly impacted, and the royalty fees could act as a tradeoff for liability. Additionally, if Congress allocated a small amount to the Good Samaritan Fund, it would help alleviate some of the pressure from the Superfund, as well as work in conjunction with it, again, all under the umbrella of the EPA and Government. Ultimately, funding for these sites is of the utmost importance, and needs to be pushed to the forefront.

VI. CONCLUSION

On August 5, 2015, three million gallons of toxic mining waste spilled into the Animas River, creating one of the most memorable yet

[137] See Hood, *supra* note 92.

[138] See W.W. Allen, 4 A.L.R. 2d 492 (1949) (discussing the use and importance of royalties in the oil and gas industries).

disturbing images of a beautiful flowing Colorado river, turned instantly into a sludgy, mustard-yellow environmental nightmare. Luckily, this was a huge wake-up call for not only the mining industry, but the EPA, the local and federal governments, and ordinary citizens. It alerted the country to how many similar disasters occur on a daily basis, although almost always unseen and undetected until it is far too late.

Because the current mining laws in the United States date back to 1872, they are extremely outdated and simply unsuccessful in addressing these types of disasters. There are hundreds of mines across the western United States that have been either abandoned or inactive for years, and are potentially harming the environment in numerous ways, through slow leaking damage, or gushing flows of toxic waste, as seen from the Gold King Mine.

There is significant resistance to even approach these sites to clean or restore them because of liability concerns. At Gold King Mine, the EPA was attempting to fix a leak, and mistakenly triggered a deluge of toxic waste into the water, placing the EPA in the spotlight for causing the damage, even though they were initially trying to remedy it. Finally, funding to even attempt to address these sites is scarce and continues to deplete.

This proposed legislation, to enact a Good Samaritan provision as well as enforce a royalty requirement on the mining industry, would solve the two main problems of liability and funding, and encourage the clean up of these abandoned mining sites throughout the United States. With this legislation, the states have an opportunity to protect the environment and prevent future damage from occurring. While the Animas River returns to normal, the memory of that mustard yellow water must remain a reminder that these disasters *can* be prevented, but only if the country acts now.

Colorado's Ground-Level Ozone Burden

Steve Gilman*

* J.D. candidate, University of Colorado Law School.

Table of Contents

I. INTRODUCTION

Since 1970, the federal government has been regulating ground-level ozone under the Clean Air Act ("CAA"). At the ground level, ozone is an air pollutant, which can be harmful to humans, animals, and vegetation. Ground-level ozone is, in part, created by man-made emissions from industrial processes and vehicle exhaust. In October 2015, the Environmental Protection Agency ("EPA") announced its most aggressive regulatory action ever regarding ground-level ozone. For years, Colorado has struggled with attaining the federal government's ozone requirements, and this most recent regulation will only further burden the state. Colorado has made substantial progress decreasing ground-level ozone pollution in the state; however, as the EPA continues to strengthen ground-level ozone regulations, the EPA must address the burdens background ozone places on states like Colorado. Furthermore, Colorado will continue to violate the EPA's ground-level ozone standards if it does not radically address motor vehicle emissions. By enhancing the EPA's mechanism for monitoring background ozone, adopting California's more aggressive stance on motor vehicle emissions, and modifying the Denver Metro area's gasoline supply, Colorado and the EPA can work together to effectively manage, reduce, and control ground-level ozone in Colorado.

This paper will first discuss ozone and its health effects. Next, this note will examine the CAA's history and the current state of the Act. This paper will then discuss how the EPA has and currently regulates ground-ozone pollution along with an analysis of historical and potential future judicial scrutiny concerning the agency's regulation of ground-level ozone. Colorado's history regulating ozone and the state's current issues related to ozone will then be examined. A discussion of background ozone will follow, which will address the tension between states and the federal government concerning a state's inability to conform to federal ozone standards thanks, in part to background ozone. Finally, this paper will argue that in order for Colorado to comply with the EPA's current ozone standards, the state should adopt California's mobile-source emission controls and modify the Denver Metro area's gasoline supply.

II. OZONE: DESCRIPTION AND HEALTH EFFECTS

Ozone is a colorless gas, composed of three oxygen atoms, which exist both at the ground level and in Earth's upper atmosphere[1]. Ozone at the ground level is considered an air pollutant, which is harmful to breathe, and it also damages crops, tress, and other vegetation.[2] Additionally, it is the main ingredient in urban smog.[3] Conversely, ozone high in the earth's atmosphere (the stratosphere) creates a layer that protects life on Earth from the sun's harmful ultraviolet rays.[4]

Ground-level ozone is created by chemical reactions between ozone precursors: nitrogen oxides ("NOx") and volatile organic compounds ("VOCs"), in the presence of sunlight.[5] These reactions are caused by man-made emissions from chemicals emitted from industrial processes, vehicle exhaust, and other byproducts of fossil fuel combustion. Ground-level ozone is also created by natural sources, such as wildfires and stratospheric intrusions.[6] "Fires [can] worsen [ground-level] ozone levels by releasing nitrogen oxides and hydrocarbons, which can form ozone near the fire or far downwind as a result of chemical reactions in sunlight."[7] Ozone that exists naturally in the stratosphere occasionally falls down to the ground level in quantities large enough to negatively impact life on Earth.[8] This phenomenon is called a stratospheric intrusion.[9]

Inhaling ozone can trigger a variety of dangerous health problems for humans, including chest pain, coughing, and throat irritation.[10]

---

[1] EPA, *Smog – Who Does It Hurt?* https://cfpub.epa.gov/airnow/index.cfm?action=smog.index (last visited Mar. 18, 2016).

[2] EPA, *Good Up High Bad Nearby - What is Ozone?* http://cfpub.epa.gov/airnow/index.cfm?action=gooduphigh.index (last visited Mar. 18, 2016).

[3] *Id.*

[4] *Id*.

[5] *Id.*

[6] National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65,292, 65,303 (Oct. 26, 2015).

[7] Press Release, University Corporation for Atmospheric Research, Wildires Cause Ozone Pollution to Violate Health Standards, New Study Shows (Oct. 09, 2008) *available at* https://www2.ucar.edu/atmosnews/news/916/wildfires-cause-ozone-pollution-violate-health-standards-new-study-shows.

[8] . Press Release, NASA, NASA Simulation Portrays Ozone Intrusions From Aloft, (April 10, 2014) *available at* http://www.nasa.gov/content/goddard/nasa-simulation-portrays-ozone-intrusions-from-aloft/#.VroZlVMrKRs.

[9] *Id.*

[10] *Good Up High Bad Nearby - What is Ozone? supra* note 2.

Furthermore, it can worsen bronchitis, emphysema, and asthma.[11] In addition, breathing ozone can reduce lung function and inflame the linings of the lungs.[12] Children are at an increased risk from ozone exposure because their lungs are still developing.[13] Ozone may also reduce the immune system's ability to fight off bacterial infections in the respiratory system.[14] Additionally, the Integrated Science Assessment ("ISA") concluded that the relationships between short-term exposures to ground-level ozone and both mortality and cardiovascular effects are likely to be causal.[15] The ISA also determined that the currently available evidence suggests causal relationships with short-term (central nervous system effects) and long-term (cardiovascular effects, reproductive and developmental effects, central nervous system effects and total mortality) exposures to ground level ozone.[16] Studies have consistently linked short-term increases in ground-level concentrations with lung function decrements in diverse populations and life stages, including children attending summer camps, adults exercising or working outdoors, and groups with pre-existing respiratory diseases such as asthmatic children.[17]

III. THE CLEAN AIR ACT

A. The Initial Clean Air Act

Congress passed the original Clean Air Act ("CAA") in 1963.[18] Through this act, the federal government acknowledged that air pollution—thanks to urbanization, industrial development, and the increasing use of motor vehicles—was a mounting danger to the public health and welfare, including injury to agricultural crops and livestock, and damage to property.[19] Here the cooperative model of federalism, still a vital component of the CAA today, came to be: "federal…leadership is

[11] *Id.*

[12] *Id.*

[13] The National Ambient Air Quality Standards, *Overview of EPA's Updates to the Air Quality Standards for Ground-Level Ozone* 1, https://www.epa.gov/sites/production/files/2015-10/documents/overview_of_2015_rule.pdf. (last visited Oct. 9, 2016).

[14] *Good Up High Bad Nearby - What is Ozone?*, *supra* note 2.

[15] INTEGRATED SCIENCE ASSESSMENT FOR OZONE AND RELATED PHOTOCHEMICAL OXIDANTS, U.S. EPA, 1-7-8 (2013).

[16] National Ambient Air Quality Standards for Ozone, *supra* note 5 at 65,315-16 (Oct. 26, 2015).

[17] *Id.* at 65,326.

[18] *See generally* Clean Air Act of 1963, Pub. L. 88-206, 77 Stat. 392 (1963).

[19] *Id.* at §1(a)(2).

essential for the development of cooperative Federal, State, regional and local programs to prevent and control air pollution."[20]

B. The 1967 Clean Air Act Amendments

In 1967, Congress amended the CAA, focusing on the regulation of ambient air quality to protect public health and welfare.[21] It established a framework for the Department of Health, Education, and Welfare's Air Quality Advisory Board ("Advisory Board") to define "air quality control regions" based on meteorological and topographical factors of air pollution.[22] The Advisory Board was charged with developing air quality "criteria" for widespread and pervasive air pollutants.[23] "The 'criteria' were to 'accurately reflect the latest scientific knowledge' on the health and welfare effects of individual pollutants, such as sulfur dioxide, nitrogen oxides ("NOx"), and particulate matter." [24] However, air quality problems were viewed as state and local concerns, so states were ultimately responsible for developing, administering, and enforcing specific standards based on the federal criteria.[25]

Conversely, Congress viewed mobile source (for example, automobile) regulation as a federal concern.[26] The 1967 Amendments charged the Advisory Board with setting technologically feasible emission standards for new automobiles.[27] Importantly, it provided states with a waiver to opt out of the applicable federal emissions standards if a state had, prior to March 30, 1966, adopted emissions standards from new motor vehicles that were more stringent than the applicable federal standards.[28] The only state that had adopted emission standards for new motor vehicles prior to March 30, 1966 was California; therefore, it was the only state that could qualify for the waiver.[29] California received special treatment from Congress because it had been aggressively regulating air pollution since the 1940s.[30] In 1947, the California governor signed into law the Air Pollution Control Act, authorizing the creation of Air Pollution Control Districts throughout the state.[31] These

[20] *Id.* at §1(a)(3).
[21] F. WILLIAM BROWNELL ET AL., CLEAN AIR HANDBOOK 1 (4th ed. 2015).
[22] California Environmental Protection Agency Air Resource Board, *Key Events in the History of Air Quality in California* (Jan. 06, 2015), http://www.arb.ca.gov/html/brochure/history.htm.
[23] BROWNELL ET AL., *supra* note 20 at 1-2.
[24] *Id.* at 2.
[25] *Id.*
[26] *Id.*
[27] R. SHEP MELNICK, REGULATION AND THE COURTS 28 (1983)
[28] 81 Stat 485 §209(b)
[29] Clean Air Act Handbook § 5:20 (2015)
[30] *Key Events in the History of Air Quality in California*, *supra* note 21.
[31] *Id.*

districts were the first of their kind in the nation – far ahead of any federal effort to regulate air pollution.[32]

C. The "California Waiver"

Crediting California with its work on automobile emission standards since the 1940s, in 1967 Congress authorized California to set and enforce its own emissions standards for new vehicles based on that state's unique need for more stringent controls.[33] The EPA recognized that California was challenged by high levels of ozone-forming NOx pollution from transportation and freight movement thanks to the state's population of thirty nine million, ports that bring in forty percent of the nation's goods, and agricultural areas that produce nearly half the nation's produce.[34] The "EPA must grant the waiver unless it finds that: (1) the determination of the state is arbitrary and capricious; (2) the state does not need the state standards to meet a compelling and extraordinary need; or (3) the state standards and accompanying enforcement procedures are not consistent with CAA § 202(a)."[35] "Standards and enforcement procedures will be found to be inconsistent with CAA § 202(a) if: there is inadequate lead time to permit the development of the necessary technology, giving appropriate consideration to the cost of compliance within that time; and (2) the state testing procedures are inconsistent with their federal counterparts."[36]

While California had its own standard, the rest of the country was obligated to abide by the federal standards, but states were free to implement air quality programs that would achieve a higher level of ambient air quality than required by the Advisory Board. [37] Unfortunately, the focus on improving ambient air quality through state and local action via the 1967 Amendments proved unduly narrow, and more broad-based regulatory programs and control methods were needed.[38]

---

[32] *Id.*

[33] *Id.*

[34] The National Ambient Air Quality Standards, *Working to Reduce Ozone in California* 1.

[35] Clean Air Act Handbook § 5:20 (2015).

[36] 78 Fed. Reg. 2112, 2121 (Jan. 9, 2013).

[37] 81 Stat 485 §109.

[38] BROWNELL ET AL., *supra* note 20 at 2.

D. The 1970 Clean Air Act Amendments

Congress provided the federal government with a more prominent role in regulating air quality by passing the Clean Air Amendments of 1970, which remains the centerpiece of today's CAA.[39] Per the 1970 Amendments, the EPA publishes and occasionally revises a list of air pollutants which, in the EPA's judgment, has an adverse effect on public health or welfare.[40] Each pollutant is subjected to two types of national ambient air quality standards ("NAAQS").[41] "Primary standards provide public health protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings."[42]

Upon promulgation of a NAAQS for an air pollutant by the EPA, each state is required to submit to the EPA a "state implementation plan" ("SIP") for the implementation, maintenance, and enforcement of the standard within the state.[43] Importantly, each state holds primary responsibility for assuring air quality within the entire state.[44] While states take the lead in NAAQS implementation, the EPA has the ongoing authority to review SIPs and to require states to revise their SIPs as necessary.[45] If a state fails to act promptly to revise its SIP in response to a new or revised NAAQS or to an EPA finding of SIP inadequacy, the EPA has the authority to set emission limitations for sources within that state.[46] When the EPA takes this step, it promulgates these emission limitations in the form of a federal implementation plan.[47]

E. The 1977 Clean Air Act Amendments

In 1977, Congress again passed amendments to the CAA, which created a comprehensive non-attainment program to deal with states that failed to meet NAAQS.[48] The EPA, in coordination with the states, divided the country into air quality control regions, designating areas of the states as either (1) "attainment," if the atmospheric concentration meets the NAAQS, (2) "non-attainment," if the concentration is above

[39] *Id.*
[40] Clean Air Act 1970 §108(a)(a)(A).
[41] Public Law 91-604 §109(a)(2)(b)(1-2).
[42] EPA, National Ambient Air Quality Standards (NAAQS), last updated Mar. 04, 2016, https://www3.epa.gov/ttn/naaqs/criteria.html.
[43] Public Law 91-604 §110(a)(1).
[44] *Id.* at §107(a).
[45] BROWNELL ET AL., *supra* note 20 at 21.
[46] Clean Air Act 1970 § 110(c)(1).
[47] *Id.*
[48] *See generally* Public Law 95-95 §129.

the NAAQS, or (3) "unclassifiable," if information regarding the NAAQS is incomplete.[49] Also, the 1977 amendments required the EPA "not later than December 31, 1980, and at five-year intervals thereafter, to complete a thorough review of the NAAQS criteria."[50]

Additionally, the 1977 Amendments created the EPA Clean Air Scientific Advisory Committee ("CASAC"), which provides independent advice to the EPA Administrator on the technical bases for EPA's NAAQS[51]. CASAC also advises the EPA on the health and environmental impacts of ozone emissions and makes recommendations to the EPA on changes or additions to the NAAQS. Although EPA is not bound by CASAC's recommendations, it must fully explain its reasons for any departure from them.[52] The 1977 Amendments extended the time to comply with the primary NAAQS standards until December 31, 1982, and the 1977 Amendments also gave the EPA's Administrator the discretion to extend the compliance date to December 31, 1987 for non-attainment areas without available and feasible pollution control measures.[53]

F. Clean Air Act Amendments of 1990

The CAA Amendments of 1990 created a new, balanced strategy for the country to attack the problem of ground-level ozone.[54] "[The 1990 Amendments] required the federal government to reduce emissions from cars, trucks, and buses; from consumer products such as hairspray and window washing compounds; and from ships and barges during loading and unloading of petroleum products."[55] The 1990 Amendments made major changes for addressing areas that failed to attain ozone NAAQS.[56] These changes involved classification of ozone areas as a matter of law, specification of new requirements for SIPs based on those classifications, imposition of new federal measures, and provisions for multi-state ozone transport regions. *Id.* As a result of the 1990 Amendments, non-attainment areas were classified based on the area's ozone design value.[57] At the time, a design value was a measure of a one-

[49] *See generally* Public Law 95-95 §§ 107(d)(1), 171(2).

[50] Public Law 95-95 109(d)(1).

[51] EPA, *EPA Clean Air Scientific Advisory Committee (CASAC)*, http://yosemite.epa.gov/sab/sabpeople.nsf/WebCommittees/CASAC (last visited Mar. 18, 2016).

[52] Clean Air Act, § 307(d)(3), (d)(6)(A), 42 U.S.C.A. § 7607(d)(3), (d)(6)(A).

[53] Public Law 95-95 § 172(a)(2).

[54] EPA, *1990 Clean Air Act Amendment Summary: Title 1*, http://www.epa.gov/clean-air-act-overview/1990-clean-air-act-amendment-summary-title-i (last visited Mar. 18, 2016).

[55] *Id.*

[56] BROWNELL ET AL., *supra* note 20 at 26.

[57] *Id*. at 27.

hour average ozone concentration in the air.[58] A design value of less than 0.120 ppm meant that the location succeeded in attaining the ozone NAAQS.[59] Locations that exceeded this 0.120 ppm design value more than once per year were designated as non-attainment status with various obligations imposed based on the severity of the location's non-attainment status.[60] Nonattainment areas with more serious air quality problems had to implement various control measures.[61] The worse the air quality, the more controls states had to implement.[62] The following is a snapshot of some of the EPA mandated control measures as a result of the 1990 Amendments. Nonattainment areas classified as "marginal" are required to conduct an inventory of their ozone-causing emissions.[63] With regard to emission inventories, states are required to submit a comprehensive, accurate, current inventory of actual emissions of VOCs and NOx in all ozone nonattainment areas.[64] States with an ozone nonattainment area classified as "moderate" or above are required to submit a SIP revision providing for annual reductions in VOC emissions by at least fifteen percent over a six year period in order to show "reasonable further progress" toward attainment.[65] These VOC emission reductions must be "real, permanent, and enforceable" and must be the result of emission reduction strategies implemented in the designated nonattainment area.[66] States containing an ozone nonattainment area classified as "serious" or greater were also required to submit a SIP revision for the area providing for reductions in VOC emissions of at least nine percent over a three-year period.[67] A reduction of less than the nine percent requirement may be allowed for nonattainment areas (other than nonattainment areas designated as extreme) upon a demonstration that the state's plan for reaching attainment includes all measures that can feasibly be implemented in light of technological achievability.[68]

[58] *Id*. Since the 1990 Amendments, the EPA has replaced the 1-hour ozone NAAQS with an 8-hour averaging time. *Id.*

[59] *Id.*

[60] *Id.*

[61] *Id.*

[62] *Id.*

[63] *1990 Clean Air Act Amendment Summary: Title 1*, *supra* at note 52.

[64] BROWNELL ET AL., supra note 20 at 28.

[65] *Id*. at 29.

[66] *Id*.

[67] *Id*.

[68] *Id*.

IV. OZONE NAAQS

A. 1971 Regulatory Action

Based upon the EPA's authority under the 1970 Clean Air Act Amendments, in 1971 the EPA designated six criteria air pollutants: sulfur oxides, particulate matter, carbon monoxide, photochemical oxidants (such as ground-level ozone) hydrocarbons, and nitrogen dioxide.[69] When designating photochemical oxidants as an air pollutant, the EPA also set the first NAAQS for total photochemical oxidants at a level of 0.08 ppm, one-hour average, not to be exceeded more than one hour per year.[70] The chief justification for the 0.08 standard was a study that correlated oxidant levels with the frequency of asthma attacks in Los Angeles.[71] According to the EPA, asthma attacks became more frequent when oxidant levels reached 0.10 ppm.[72] Adding a twenty percent margin of safety to 0.10 ppm, the EPA arrived at the 0.08 standard.[73] Initially however, the EPA proposed a 0.06 ppm standard, but this standard was attacked by several states.[74] The states asserted that this 0.06 ppm standard was based on flimsy evidence and, importantly, equal to or below natural background ozone levels.[75] Today, states like Colorado continue to assert similar arguments concerning natural background ozone levels.[76]

Shortly after promulgating the standard, however, EPA officials realized they had incorrectly analyzed the study.[77] A National Academy of Sciences study commissioned by Congress examined the 0.08 ppm standard and found "[t]he technical data base for the oxidant standard was inadequate, considering the implications for public health and the economic impact.[78] Opponents of EPA's 0.08 photochemical oxidant standard demanded that the EPA relax the standard, but the EPA ignored those calls for several years.[79]

---

[69] National Primary and Secondary Ambient Air Quality Standards, 36 Fed. Reg. 8186, at 8187 (Apr. 30, 1971).

[70] *Id*.

[71] MELNICK, supra note 26, at 283.

[72] *Id.* at 282.

[73] *Id.*

[74] *Id*. at n. 63.

[75] *Id*.

[76] Press Release, Colorado Department of Public Health & Environment, EPA Lowers Federal Ozone Standard; Colorado, Other States Face More Difficult Compliance, (Oct. 1, 2015), *available at* https://www.colorado.gov/cdphe/news/ozone

[77] *Id.*

[78] *Id.*

[79] *Id. at 283.*

B. 1979 Regulatory Action

The EPA began a review proceeding after the 1977 Amendments, which resulted in relaxing the photochemical oxidant NAAQS.[80] The standard was increased to 0.12 ppm from 0.08 ppm in 1979.[81] The EPA also changed the chemical designation of the standards from photochemical oxidants to ozone and revised the definition of the point at which the standard is attained to "when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is equal to or less than one..."[82] The number of days with maximum hourly concentrations above the standard is determined for each year and then is averaged over the preceding three years.[83] Thus, a violation occurs on the fourth day the NAAQS is exceeded over a three-year period.[84] In revising the standard, the EPA relied on several studies that rationalized a variety of standards ranging from 0.25 ppm (the petroleum industry's position) to 0.08.[85] Ultimately, the EPA drew the line at 0.12 ppm after relying on medical evidence that pointed to health risks at about 0.15 ppm.[86]

Subsequently, in *American Petroleum Institute v. Costle* several entities brought suit against the EPA, challenging the revised primary ozone NAAQS.[87] Petitioner American Petroleum Institute, contended that the EPA erred by establishing standards that were too stringent.[88] Conversely, Petitioner National Resources Defense Council argued that the EPA erred by establishing standards that were too lenient.[89] The court upheld the primary and secondary standards because they were supported by substantial evidence.[90] The court further held that "the [EPA's] Administrator may not consider economic and technological feasibility in setting air quality standards…[because] of a deliberate decision by Congress to subordinate such concerns to the achievement of health goals."[91]

C. 1997 Regulatory Action

The ozone NAAQS were next revised on July 18, 1997[92]. The one

[80] BROWNELL ET AL., *supra* note 20 at 6.
[81] 44 Fed. Reg. 8202
[82] *Id.*
[83] *Id.*
[84] *Id.*
[85] MELNICK, supra note 26, at 287.
[86] *Id.* at 291.
[87] 665 F.2d 1176 (1981).
[88] *Id.* at 1181.
[89] *Id.*
[90] *Id.*
[91] *Id.* at 1185.
[92] EPA, *Reviewing National Ambient Air Quality Standards – Scientific and*

hour primary standard was replaced with an eight hour standard at a level of 0.08 ppm with a form based on the three year average of the fourth-highest daily maximum eight hour average ozone concentrations measured at each monitor within an area.[93] The EPA alleged that the new primary standard would provide increased protection to the public, especially children and other at-risk populations against a wide range of ozone-induced health effects. After years of challenges, the courts upheld these heightened standards, finding that the 1997 ozone NAAQS were neither arbitrary nor capricious.[94]

D. 2008 Regulatory Action

The ozone NAAQS were next revised on March 27, 2008. The EPA lowered the level of the eight-hour primary and secondary ozone standards from 0.08 ppm to 0.075 ppm.[95] The 2008 revisions also modified design values and associated attainment deadlines that were modified as a result of the 1997 revisions for non-attainment areas. In 2013, the D.C. Circuit in *State of Mississippi v. EPA* upheld the 2008 primary ozone standard, but remanded the 2008 secondary standard to the EPA.[96] The D.C. Circuit Court remanded the secondary standard to the EPA after finding that the agency's justification for setting the secondary standard violated the CAA because the EPA had not adequately explained how the secondary standard provided the statutorily mandated public welfare protection.[97]

E. 2015 Revised Ozone NAAQS

The EPA addressed the D.C. Circuit Court's remand in *Mississippi v. EPA* in its final rule revising the ozone NAAQS, which was published on October 1, 2015.[98] Both the primary and secondary ozone standards were lowered from .075 ppm to .070 ppm.[99] The EPA Administrator concluded that a primary and secondary standard of .070 ppm would provide the adequate margin of safety the law requires.[100] "The requirement that primary standards provide an adequate margin of safety

Technical Information (Mar. 04, 2016), http://www3.epa.gov/ttn/naaqs/standards/ozone/s_o3_history.html.

[93] 40 CFR Part 50 at 38856.

[94] American Trucking Ass'ns, Inc. v EPA, 283 F.3d 355, 379 (D.C Cir., 2002).

[95] EPA, *Reviewing National Ambient Air Quality Standards – Scientific and Technical Information* (Mar. 04, 2016), http://www3.epa.gov/ttn/naaqs/standards/ozone/s_o3_history.html.

[96] 744 F.3d 1334 (D.C. Cir. 2013).

[97] *Id.*

[98] *National Ambient Air Quality Standards for Ozone, supra* note 5 at *65,299*

[99] *Id.* at 65,292

[100] EPA Overview of New Rule page 2, https://www.epa.gov/sites/production/files/2015-10/documents/overview_of_2015_rule.pdf

was intended to address uncertainties associated with inconclusive scientific and technical information available at the time of standard setting. It was also intended to provide a reasonable degree of protection against hazards that research has not yet identified."[101] "The CAA does not require the EPA's Administrator to establish a primary NAAQS at a zero-risk level or at background concentrations…but rather at a level that reduces risk sufficiently so as to protect public health with an adequate margin of safety."[102] This includes the need to ensure the safety of "sensitive" populations including asthmatics, children and the elderly.[103] "In setting primary and secondary standards that are "requisite" to protect public health and welfare, respectively, the EPA's task is to establish standards that are neither more nor less stringent than necessary for these purposes."[104] In so doing, the EPA may not consider the costs of implementing the standards.[105] "Likewise, '[a]ttainability and technological feasibility are not relevant considerations in the promulgation of national ambient air quality standards."[106] While the EPA acknowledged it cannot consider costs in setting ozone NAAQS, the agency provided an analysis of the benefits and costs as required by Executive Orders 12866 and 13653 and guidance from the White House Office of Management and Budget.[107]

The EPA's Administrator concluded that the updated health standard of 0.070 ppm would significantly reduce ozone air pollution and provide an adequate margin of safety to protect at-risk groups.[108] The EPA stated that this standard is well below the ozone exposure concentration shown to cause the widest range of respiratory effects (0.080 ppm), and the standard is below the lowest ozone exposure concentration shown to cause the adverse combination of decreased lung

[101] *See* National Ambient Air Quality Standards for Ozone, *supra* note 5 at 65,303 (Oct. 26, 2015).

EPA Final Rule page 13 *citing* Mississippi v. EPA, 744 F. 3d 1334, 1353 (D.C. Cir. 2013).

[102] National Ambient Air Quality Standards for Ozone, *supra* note 5 at 65,303 (Oct. 26, 2015).

[103] EPA, National Ambient Air Quality Standards (NAAQS), last updated Mar. 04, 2016, https://www3.epa.gov/ttn/naaqs/criteria.html.

[104] National Ambient Air Quality Standards for Ozone, supra note 5 at 65,306

[105] See generally, Whitman v. American Trucking Associations, 531 U.S. 457, 465-472, 475-76 (2001)

[106] American Petroleum Inst. v. Costle, 665 F. 2d at 1185 (1981).

[107]Regulatory Impact Analysis of the Final Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone, pp 1-2 https://www3.epa.gov/ttnecas1/docs/ria/naaqs-o3_ria_final_2015-09.pdf (September 2015)

[108] *Overview of EPA's Updates to the Air Quality Standards for Ground-Level Ozone supra* note 12 at 1.

function and increased respiratory symptoms (0.072 ppm).[109] According to the EPA, the 0.070 ppm standard essentially eliminates ozone exposures that have been shown to cause adverse health effects, protecting 99.5 percent of children from even single exposures to ozone at 0.070 ppm.[110] The 0.070 ppm standard will protect more than ninety-eight percent of school-age children from repeated exposures to ozone concentrations as low as 0.060 ppm – a sixty percent improvement over the current standard.[111] Although the EPA cites several studies that have shown effects in some adults following exposure to ozone at levels as low as 0.060 ppm, the EPA's Administrator concluded that the evidence is uncertain that those effects are harmful or adverse.[112] Given these uncertainties, the EPA concluded that the data supported setting a standard that reduces exposure to ozone concentrations as low as 0.060 ppm, but does not support a standard that eliminates them.[113]

Per Executive orders 12866 and 13563 and guidance from the White House Office of Management and Budget, the EPA created a Regulatory Impact Analysis comparing the costs and benefits of a 0.070 ppm standard with an alternative standard level of 0.065 ppm.[114] The tables below summarize the EPA's findings:

Total annual cost and benefit analysis of 0.070 ppm standard compared to 0.065 ppm alternative standard for the United States, excluding California, beginning in 2025 (billions of 2011$):[115]

	0.070 ppm	0.065 ppm
Total Costs	$1.4	$16
Total Health Benefits	$2.9-$5.9	$15-$30
Net Benefits	$1.5-$4.5	-$1.0-$14

Total annual cost and benefit analysis of 0.070 ppm standard compared to 0.065 ppm alternative standard for California, after 2025 (billions of 2011$):[116]

[109] National Ambient Air Quality Standards for Ozone, supra note 5 at 65,300

[110] *Overview of EPA's Updates to the Air Quality Standards for Ground-Level Ozone supra* note 12 at 2.

[111] *Id.*

[112] *Id.*

[113] *Id.*

[114] Regulatory Impact Analysis of the Final Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone, *supra* note 96 at 1-4.

[115] Regulatory Impact Analysis of the Final Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone, *supra* note 96 at ES-15

[116] Regulatory Impact Analysis of the Final Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone, *supra* note 96 at ES-18

	0.070 ppm	0.065 ppm
Total Costs	$0.80	$1.5
Total Health Benefits	$1.2-$2.1	$2.3-$4.2
Net Benefits	$0.4-$1.3	$0.8-$2.7

The EPA analyzed the benefits and costs for California separately because a number of areas in California will have longer to meet the ozone NAAQS based on their high ozone levels.[117] Importantly, the purpose of this Regulatory Impact Analysis is to inform the public about the potential costs and benefits that may result when the EPA implements the new standards.[118]Although the EPA prepared the Regulatory Impact Analysis, its findings were not considered when it issued the 2015 revised ozone NAAQS.[119]

V. JUDICIAL SCRUTINY OF THE 2015 REVISED OZONE NAAQS

The EPA uses a tool called the Air Quality Index ("AQI") to inform the public about how clean or polluted the air is and to recommend steps the public can take to reduce daily exposure to ozone.[120] The AQI converts ozone concentrations to a number on a scale from zero to five hundred, zero meaning air quality that is considered satisfactory, and five hundred meaning air quality that poses serious health effects to everyone. Interestingly, the .070 ppm health standard set by the EPA is considered to pose a moderate level of health concern according to the AQI.[121] At this level, there is a moderate health concern for a very small number of people who are unusually sensitive to ozone pollution.[122]

Based on the language in *Mississippi v. EPA*, the EPA's judgment to revise the primary NAAQS to 0.070 ppm will probably withstand judicial scrutiny even if the standard poses moderate health concerns for sensitive populations. Here, the EPA complied with the CAA's requirement to build in an adequate margin of safety, the agency

[117] *Overview of EPA's Updates to the Air Quality Standards for Ground-Level Ozone supra* note 12 at 4..

[118] Regulatory Impact Analysis of the Final Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone, *supra* note 96 at ES-1-2

[119] *Supra* note 5 at Page 65,444

[120] The National Ambient Air Quality Standards, *Updates to the Air Quality Index (AQI) for Ozone and Ozone Monitoring Requirements 1*.

[121] *Id.* at 2.

[122] EPA, *Air Quality Guide for Ozone*, (Sept. 10, 2015), https://www.airnow.gov/index.cfm?action=pubs.aqiguideozone

considered its rules on sensitive populations, and acknowledged that some of these populations are more likely to experience adverse effects at all levels of exposure.[123] The EPA also documented clinical studies showing effects in some adults following exposure to ozone at levels as low as 0.060 ppm. CASAC recommended that the EPA choose a new standard in the range of 0.060 to 0.070 ppm, and CASAC further noted that it preferred a new standard near the lower end of the range.[124] In its final recommendations, CASAC noted that the decision about what standard provides the adequate margin of safety required by the CAA is a policy judgment left to the Administrator of the EPA.[125] Ultimately, the EPA noted that the evidence is uncertain that those effects in some adults following exposure to ozone at levels as low as 0.060 ppm are harmful or "adverse."[126] The EPA, in the revised standard, acknowledged CASAC's recommendation and agreed with CASAC that the standard needed to be revised downward to the range of 0.060 to 0.070 ppm, but it did not agree to set the standard below 0.070 ppm.[127] Per the CAA, given the scientific uncertainties documented by the EPA, the EPA's decision about the appropriate NAAQS level must necessarily rest largely on policy judgments. [128] Here, the EPA's Administrator acknowledged and incorporated CASAC's recommendations into the final rule, and used her statutorily authorized judgment to set the ozone standard within the adequate margin of safety as required by the CAA. Given the aforementioned considerations, the EPA's rule would probably withstand judicial scrutiny if parties bring suit alleging that the EPA failed to protect the public with an adequate margin of safety as required by the CAA.

VI. NON-ATTAINMENT STATUS IN COLORADO

In Colorado, the Denver Metro North Front Range has a long history of violating ozone NAAQS.[129] The EPA first designated the Denver Metro Area as non-attainment in March 1979 based on the 1979

[123] Clean Air Act, § 109(b)(1), 42 U.S.C.A. § 7409(b)(1).

[124] Amanda Reilly, *EPA Defends New Ozone Standard as Green Allies Fume,* Environment & Energy Publishing, Oct. 2, 2015, *available at* http://www.eenews.net/stories/1060025767.

[125] *Overview of EPA's Updates to the Air Quality Standards for Ground-Level Ozone supra* note 12 at 3.

[126] *Id.* at 2.

[127] *Id.*

[128] Clean Air Act, § 108(a)(1)(A), 42 U.S.C.A. § 7408(a)(1)(A).

[129] Colorado Department of Public Health, *Ozone Information*, https://www.colorado.gov/pacific/cdphe/ozone-information, (last visited Mar. 18, 2016).

Ozone NAAQS.[130] The Denver Metro Area has since attained the 1979 standard and has not violated this standard since 1987.[131] In November 2007, the Denver Metro Area was designated as "marginal" non-attainment by the EPA based on the 1997 ozone NAAQS.[132] The region has not violated the 1997 standard since 2008.[133] Since 2012, the Denver Metro North Front Range has been designated as "marginal" non-attainment under the 2008 ozone NAAQS.[134] The area was given an initial attainment deadline of July 2015 to attain the 2008 ozone NAAQS, which it subsequently failed (the Denver Metro North Front Range Area's ozone reading was 0.077 ppm, 0.002 ppm shy of achieving attainment status under the 2008 ozone NAAQS).[135] Consequently, the Denver Metro North Front Range Area was reclassified from "marginal" to "moderate" nonattainment on May 4, 2016.[136] Colorado must now submit a revised SIP to the EPA that meets the statutory and regulatory requirements that apply to 2008 ozone nonattainment areas classified as "moderate" by January 1, 2017.[137] The Denver Metro North Front Range Area must also attain the statutory and regulatory requirements that apply to 2008 ozone nonattainment areas classified as "moderate" as expeditiously as practicable, but in any event no later than July 20, 2018.[138]

Until the EPA states otherwise, states must continue to adhere to the 2008 ozone NAAQS and must prepare to adhere to the 2015 ozone NAAQS.[139] Eventually, the EPA will announce the process to transition from the 2008 standard to the 2015 standard.[140] The EPA expects to revoke the 2008 ozone NAAQS in 2018 or 2019.[141] In 2017, the EPA will likely designate the Denver Metro North Front Range Area as non-attainment for the 2015 standard.[142] Colorado will then have three years from the date of designation to submit a plan to the EPA showing how it

[130] The SIP Planning Process: An Overview of The Clean Air Act's (CAA) Requirements for Colorado State Implementation Plan (SIP) Development & Approval O3-1, (Aug. 27, 2014).

[131] *Id.*

[132] *Id.*

[133] *Id.*

[134] *Id.*

[135] Fed Reg Vol. 80, No. 166 at 5192, Fed Reg Vol. 81, No. 86 at 26,699

[136] Fed Reg Vol. 81, No. 86 at 26,699

[137] Fed Reg Vol. 81, No. 86 at 26,697

[138] Fed Reg Vol. 81, No. 86 at 26,698

[139] JANET G. MCCABE, EPA MEMORANDUM: IMPLEMENTING THE 2015 NATIONAL AMBIENT AIR QUALITY STANDARDS ATTACHMENT PAGE 3, Oct. 1, 2015.

[140] *Id.*

[141] 2015 Ozone NAAQS Timelines, https://www.epa.gov/ozone-pollution/2015-ozone-naaqs-timelines (last updated March 4, 2016)

[142] Colorado Department of Public Health, *Ozone Information*, https://www.colorado.gov/pacific/cdphe/ozone-information, (last visited Oct. 9, 2016).

will meet the new standard.[143] Unfortunately, while the state must abide by the 2015 standard, it does not have many tools to reduce its ozone pollution, thanks in part to background ozone. [144]

VII. BACKGROUND OZONE

Background ozone is ozone that forms from pollution from natural sources, such as wildfires, lightning, vegetation, and stratospheric intrusions.[145] Man-made pollution from sources outside the U.S. is also considered background ozone.[146] Ozone exists in large quantities in the stratosphere and natural atmospheric exchange processes can transport stratospheric air to the ground-level (this process is called a stratospheric intrusion), negatively impacting ground-level ozone concentrations.[147] The EPA notes that background ozone concentrations within the U.S. and globally have been increasing over the past two decades at a rate of approximately 0.04 ppm per year.[148] Yet, the EPA has concluded that background ozone will not prevent areas from meeting the updated ozone standard of 0.70 ppm.[149] The Colorado Department of Public Health disagrees, and believes that Colorado's background levels reach as high as 0.65-0.74 ppm, above the EPA's new standard of 0.70 ppm.[150] The EPA admits that there can be infrequent events where ozone concentrations approach or exceed 0.70 ppm in the inter-mountain west.[151] But, the EPA states that its policies allow for the exclusion of background ozone via its Exceptional Events Rule.[152] The Exceptional Events Rule provides a mechanism by which background ozone can be excluded from regulatory decisions and actions.[153] "Air monitoring data that would otherwise indicate an exceedance of the ozone standards and

[143] Colorado Department of Public Health, *Ozone Information*, https://www.colorado.gov/pacific/cdphe/ozone-information, (last visited Mar. 18, 2016).

[144] Telephone Interview with Chris Colclasure, Deputy Director Air Pollution Control Division, Colorado Department of Public Health (Feb. 4, 2016).

[145] EPA, *Implementation of the 2015 Ozone NAAQS: Issues Associated with Background Ozone White Paper for Discussion* 3.

[146] *Id.*

[147] *Id.*

[148] *Id.* at 8.

[149] *Overview of EPA's Updates to the Air Quality Standards for Ground-Level Ozone*, *supra* note 12 at 5.

[150] Press Release, Colorado Department of Public Health & Environment, EPA Lowers Federal Ozone Standard; Colorado, Other States Face More Difficult Compliance, (Oct. 1, 2015), *available at* https://www.colorado.gov/cdphe/news/ozone

[151] EPA, *Implementation of the 2015 Ozone NAAQS: Issues Associated with Background Ozone White Paper for Discussion* 7.

[152] *Id.*

[153] EPA, *Exceptional Events Rule Revisions Notice of Proposed Rulemaking and Draft Wildfire/Ozone Guidance Notice of Availability* 4, (November 2015).

lead to a non-attainment designation may be excluded from designation determinations, if the data is determined to be affected by exceptional events."[154] The criteria to be an exceptional event is 1) that the event affects air quality, 2) the event is not reasonably controllable or preventable, 3) the event is caused by human activity that is unlikely to recur at that location or is a natural event, and 4) there would have been no exceedance or violation of the ozone standard but for that event.[155] However, Colorado's experience has revealed that the planning process to put together these exceptional event applications require significant resources that often exceed the resources available to states and the EPA.[156] The EPA sometimes takes years to act on exceptional event application requests. It appears that some areas are in violation of the ozone standard when in reality, if the EPA acted on and concurred with a state's exceptional event application, the area would attain the ozone standard.[157] As it currently stands, there are no set timeframes for the EPA to respond to a state's exceptional event application.[158] The EPA should implement a rule requiring the agency to review states' exceptional events applications within a given timeframe. In addition, both states and the EPA must allocate more resources in preparing and reviewing exceptional event applications in order to isolate background ozone from air monitoring data. The EPA confesses that background ozone levels in the U.S. are rising, while the agency continues to aggressively regulate ground-level ozone at the state-level. At what point does background ozone impair the states' ability to control ground-level ozone below EPA standards? By more effectively accounting for background ozone, states and the EPA can develop regional, national, and perhaps even global approaches to regulate and reduce manmade emissions that contribute to ground-level ozone.

[154] EPA, *Implementation of the 2015 Ozone NAAQS: Issues Associated with Background Ozone White Paper for Discussion* 12.

[155] EPA, *Exceptional Events Rule Revisions Notice of Proposed Rulemaking and Draft Wildfire/Ozone Guidance Notice of Availability* 5, (November 2015).

[156] William C. Allison V, Director Air Pollution Control Division, Colorado Department of Public Health & environment, State of Colorado Comments, Docket ID EPA-HQ-OAR-2008-0699; FRL-9918-43- OAR, March 17, 2015, *available at* https://www.colorado.gov/pacific/sites/default/files/AP-PO-ColoradoCommentsOzoneNAAQS.pdf

[157] *Id.*

[158] *Id.*

VIII. MOBILE SOURCE EMISSIONS AND GASOLINE

According to the Regional Air Quality Council ("RAQC") the lead air quality planning agency for the Denver Metro North Front Range Ozone Non-Attainment Area, the greatest opportunity for the Denver Metro North Front Range Area to reduce its ozone pollution (aside from confronting background ozone) lies within mobile sources and modifications to the region's gasoline supply.[159] Implementing California's ZEV Mandate along with modification to Denver's gasoline supply will ensure that all automobiles, old and new, emit fewer ozone precursors and help the region obtain attainment status for ozone NAAQS.

A. California's Zero Emission Vehicles

Transportation emissions are the primary source of ozone in California.[160] To combat ozone pollution, in March 2012, the California Governor issued an executive order establishing a path toward 1.5 million zero-emission vehicles ("ZEVs") in California by 2025 ("ZEV Mandate").[161] This equates to fifteen percent of all new vehicles sold in California by model year 2025.[162] "A ZEV has no tailpipe emissions, no evaporative emissions, no emissions from gasoline refining or sales, and no onboard emission control systems that can deteriorate over time."[163] Initially, electric cars were expected to be the only cars to qualify for the ZEV Mandate, but thanks to promising technologies like fuel cells and hybrid electric vehicles, there are various new opportunities for the production of ZEVs. ZEVs include fuel cell electric vehicles and plug-in electric vehicles, encompassing light-duty passenger vehicles and heavier vehicles such as freight trucks and public buses.[164] The ZEV Mandate required that by 2015, ten percent of the California government's light-duty fleet purchases must be ZEVs. By 2020, twenty-five percent of the California government's light-duty fleet purchases must be ZEVs.

---

[159] Regional Air Quality Council Board Meeting, Feb. 5, 2016.

[160] 2013 ZEV Action Plan, *A roadmap toward 1.5 million zero-emission vehicles on California roadways by 2025* 4, February 2014, https://www.opr.ca.gov/docs/Governor's_Office_ZEV_Action_Plan_(02-13).pdf.

[161] *Id.* at 1.

[162] Colorado Department of Public Health & Environment Presentation to Regional Air Quality Council, *Adopting California's LEV III Program, Including LEV III Certification Standards, Zero Emitting Vehicle Mandate, and Greenhouse Gas Standards* 7, January 25, 2016.

[163] Clean Air Act Handbook § 5:21 (2015)

[164] 2013 ZEV Action Plan, *A roadmap toward 1.5 million zero-emission vehicles on California roadways by 2025* 1, February 2014, https://www.opr.ca.gov/docs/Governor's_Office_ZEV_Action_Plan_(02-13).pdf.

This executive order also sets a longer-term goal of reducing transportation-related greenhouse gas emissions by eighty percent below 1990 levels by 2050.[165] The ZEV Mandate transfers power generation from inherently inefficient internal combustion engines to higher efficiency stationary source power generation, where criteria pollutants can be better controlled via hydroelectric, wind, solar, and geothermal power.[166] Furthermore, as power generation continues to move away from coal-fired power plants both in California and across the country, greenhouse gas, ozone criteria pollutants, and ozone levels are reduced.[167] The California ZEV Mandate has been adopted by Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island, and Vermont.[168]

One of the primary challenges to ZEV expansion in California is that ZEVs require new infrastructure.[169] States will need to install electric vehicle chargers in consumers' homes, public spaces, and workplaces; structure electricity rates to allow for affordable fueling; and ensure that ZEVs integrate efficiently into a state's electricity grid.[170] Furthermore, ZEVs' up-front costs still remain high compared to traditional vehicles and ZEVs are not yet commercially available for all categories of vehicles.[171] Regarding ozone NAAQS, both California and the EPA recognize that transformational change is needed in order for non-attainment areas in California to achieve attainment status.[172] The EPA explicitly notes that a transition to largely zero or near-zero emission vehicle technologies will be a primary contributor to California achieving these goals.[173]

B. Implementation of California's ZEV Mandate in Colorado

California's ZEV Mandate could be an effective means for Colorado's ozone NAAQS non-attainment areas to help achieve attainment status. The Union of Concerned Scientists estimate that an

[165] *Id.* at 2.

[166] Colorado Department of Public Health & Environment Presentation to Regional Air Quality Council, *Adopting California's LEV III Program, Including LEV III Certification Standards, Zero Emitting Vehicle Mandate, and Greenhouse Gas Standards* 14, January 25, 2016.

[167] *Id.*

[168] *Id.* at 7.

[169] 2013 ZEV Action Plan, *A roadmap toward 1.5 million zero-emission vehicles on California roadways by 2025* 6, February 2014, https://www.opr.ca.gov/docs/Governor's_Office_ZEV_Action_Plan_(02-13).pdf.

[170] *Id.*

[171] *Id.*

[172] WORKING TO REDUCE OZONE IN CALIFORNIA, 1.

[173] *Id.*

average gasoline powered vehicle will emit 26.6% more greenhouse gas emissions than a dedicated battery electric vehicle.[174] Clearly, zero emission vehicles are an attractive alternative to reduce greenhouse gases, which also reduces ozone pollution, thereby helping Colorado achieve attainment status for both the 2008 and 2015 ozone NAAQS. However, if Colorado were to adopt California's ZEV Mandate, potential preemption issues could arise.

1. Preemption Issues

The CAA generally preempts states from establishing their own mobile source tailpipe standards.[175] The Supremacy Clause "invalidates state laws that 'interfere with, or are contrary to,' federal law."[176] "Federal preemption occurs when: (1) Congress enacts a statute that explicitly pre-empts state law; (2) state law actually conflicts with federal law; or (3) federal law occupies a legislative field to such an extent that it is reasonable to conclude that Congress left no room for state regulation in that field."[177]

Thanks in part to its particularly difficult non-attainment problems, the CAA authorizes California to adopt stricter standards for mobile sources.[178] The CAA also allows other states to adopt motor vehicle standards if they are *identical* to the California standards.[179] The focus of the preemption issue has historically been in relation to mandates adopted by California requiring manufacturers to either build or sell cars that meet specific design standards, such as California's ZEV Mandate, which requires manufacturers to produce a specified number of vehicles with no or very low emissions.[180] States in the northeast facing ozone NAAQS non-attainment, like New York and Massachusetts have successfully implemented California's ZEV Mandate by exercising their authority under the CAA.[181] These states concluded that they would be unable to meet the requirements of the ozone non-attainment program without adopting the California standards.[182] As a result, these states petitioned the EPA to require California's ZEV Mandate as part of their

[174] Colorado Department of Public Health & Environment Presentation to Regional Air Quality Council, *Adopting California's LEV III Program, Including LEV III Certification Standards, Zero Emitting Vehicle Mandate, and Greenhouse Gas Standards* 27*,* January 25, 2016.

[175] CAA § 209(a), 42 U.S.C.A § 7543(a).

[176] 498 F.3d 1031.

[177]498 F.3d 1031.

[178] *Supra* at 28.

[179] 42 U.S.C.A. § 7507 (2011).

[180] Clean Air Act Handbook § 5:20 (2015).

[181] *Id.* at § 5:21 (2015).

[182] *Id.*

ozone non-attainment SIPs. [183] In 1995, the EPA agreed and promulgated a final rule approving the petition and required the ZEV Mandate in the applying states. [184] The EPA's decision was challenged, and the Court of Appeals for the District of Columbia Circuit eventually affirmed the right of each state to adopt the California ZEV program.[185]

However, in 1996 and again in 1998 California relaxed its ZEV Mandate.[186] Massachusetts and New York refused to follow suit and maintained the original California ZEV Mandate.[187] The automotive industry brought suit against New York, seeking to nullify New York's ZEV Mandate in light of California's decisions to relax its mandate.[188] In 1998, the Second Circuit Court of Appeals held that the Clean Air Act preempted New York's ZEV requirement.[189] In *American Automobile Manufacturers Association v. Cahill,* the court concluded that the ZEV requirement was a "standard relating to the control of emissions" and that states may not impose such controls on motor vehicles under the Clean Air Act.[190] The court rejected New York's argument that the ZEV sales requirement fell under the CAA's exception for states that adopt the California standards.[191] Similarly, Massachusetts' ZEV Mandate was also struck down by the courts for preemption reasons.[192] As a result of each lawsuit, both New York and Massachusetts adopted the revised California ZEV requirements, thus mirroring California's standards to remedy the aforementioned preemption issues.[193]

California's executive order directs the state to purchase ZEVs for government fleets. By 2015, the executive order mandated that ten percent of the government's light-duty fleet purchases must be ZEVs, which will increase to twenty-five percent of fleet purchases by 2020. Colorado could adopt a similar provision, although it need not be an exact replica of California's version. In a 2004 decision, the US Supreme Court considered whether state imposed municipal-purchasing mandates were preempted by the CAA.[194] In *Engine Mfrs. Ass'n v. SCAQMD*, a trade association representing vehicle manufacturers challenged rules

[183] *Id.*
[184] 60 Fed. Reg. 4712 (Jan. 24, 1995).
[185] Com. of Va. v. E.P.A. 116 F.3d 499 (D.C. Cir. 1997)
[186] Clean Air Act Handbook § 5:21 (2015)
[187] *Id.*
[188] *Id.*
[189] 152 F.3d 196 (2d Cir. 1998),
[190] *Id.*
[191] *Id.*
[192] Ass'n of Int'l Auto. Mfr., Inc. v. Comm'r, Mass. Dep't of Envtl. Prot., 208 F.3d 1 (1st Cir. 2000).
[193] Clean Air Act Handbook § 5:21 (2015).
[194] In Engine Mfrs. Ass'n. v. S. Coast Air Quality Mgmt. Dist., 541 U.S. 246, (2004)

adopted by a municipal district that required certain types of fleet operators to purchase vehicles that met certain emission standards.[195] On remand, the Ninth Circuit Court of Appeals affirmed a district court decision holding that fleet rules, as applied to state and local governments, were outside the scope of the preemption provision of the CAA.[196] Thus, when considering options to reduce ozone pollution, Colorado could promulgate a purchasing mandate for government fleets that satisfies the state's unique needs without concern that such a mandate would be preempted by the CAA.

According to the Regional Air Quality Council, the greatest opportunity for Colorado to reduce ozone pollution lies within mobile sources and the oil and gas sector.[197] While Colorado will face similar infrastructure burdens as California, adopting California's ZEV Mandate and imposing a mandate that state and local governments replace their fleets with ZEVs are potentially powerful options to explore to reduce ozone levels in Colorado. Fortunately, non-attainment ozone NAAQS areas in Colorado are supporting measures to help catalyze the ZEV movement. In 2016, the city of Denver mandated that single-family homes and duplexes built in the city will need to have the proper electrical writing to support electric vehicle plugs in their garages.[198] Denver is joining several cities that have electric vehicle readiness rules for single-family homes, including Boulder County, Colorado; Vancouver, British Columbia; Los Angeles; and many other California cities.[199] Furthermore, if Colorado chooses to adopt California's ZEV Mandate, Colorado should not face preemption issues if it creates an exact replica of California's ZEV Mandate. One potential consequence of this decision is that Colorado will be bound to all future amendments passed by California regarding its ZEV Mandate, whether California relaxes, strengthens, or abolishes the ZEV Mandate. However, Colorado is similarly bound to the federal emission standards, thus the state should be familiar with executing emission standard amendments.

[195] *Id.*

[196] Engine Mfrs. Ass'n v. S. Coast Air Quality Mgmt. Dist., 498 F.3d 1031 (9th Cir. 2007).

[197] Regional Air Quality Council Board Meeting, February 5, 2016.

[198] Jon Murray, *Denver's New Building Code Requires Garages to Support Electric Vehicles*, The Denver Post, March 9, 2016 *available at* http://www.denverpost.com/news/ci_29615729/new-garages-must-support-electric-vehicle-plugs-denver.

[199] *Id.*

C. Boutique Gasoline

1. Reid Vapor Pressure

Colorado has several options at its disposal regarding modifications to gasoline that supplies the Denver North Front Range Area. By utilizing boutique gasoline (non-conventional gasoline as discussed below) Colorado can reduce many of the primary precursor ozone pollutants that are responsible for the Denver Northern Front Range Area non-attainment status. During the summer ozone season, June 1 – September 15, the EPA regulates the vapor pressure of gasoline sold at retail stations in order to reduce evaporative emissions from gasoline that contribute to ground-level ozone.[200] "Colorado currently caps the reid vapor pressure[201] (RVP) of gasoline sold during the summer months at 7.8 psi."[202] Outside the summer ozone season, the Denver North Front Range Area must abide by a 9.0 RVP standard.[203] Altering the summer fuel standard RVP to 7.0 psi would result in ozone reduction benefits by reducing the amount of VOCs emitted.[204] In order to adopt a lower RVP fuel, Colorado must obtain EPA approval as part of the CAA SIP process.[205] The request must demonstrate that the state's adoption of the lower RVP fuel is necessary to achieve the ozone NAAQS. "'Necessary' means that no other measures exist that would bring about timely attainment or that other measures exist, but are unreasonable or impracticable."[206] Several states around the country have successfully obtained waivers from the EPA and implemented the 7.0 RVP standards in ozone non-attainment areas.[207] These states have seen significant reductions in ozone emissions at a low cost, and there is no reason to believe that Colorado would not qualify for a waiver given its history of ozone non-attainment.[208]

---

[200] EPA, *Gasoline Reid Vapor* Pressure, Feb. 29, 2016, http://www.epa.gov/gasoline-standards/gasoline-reid-vapor-pressure.

[201] *Id.* Reid vapor pressure (RVP) is a common measure of and generic term for gasoline volatility.

[202] A Coalition of Colorado's Local Governments and Environmental Groups, *The Path Forward: Reducing Ozone Pollution to Protect Public Health in the Colorado Front Range*, *available at* http://ozoneaware.org/postfiles/comments/The%20Path%20Forward.pdf.

[203] EPA, *Gasoline Reid Vapor* Pressure, Feb. 29, 2016, http://www.epa.gov/gasoline-standards/gasoline-reid-vapor-pressure.

[204] A Coalition of Colorado's Local Governments and Environmental Groups, The Path Forward: Reducing Ozone Pollution to Protect Public Health in the Colorado Front Range, available at http://ozoneaware.org/postfiles/comments/The%20Path%20Forward.pdf.

[205] *Id.* at 11.

[206] *Id.* at 11-12.

[207] *Id.* at 12.

[208] *Id.*

2. Reformulated Gasoline

Reformulated gasoline ("RFG") is gasoline blended to burn cleaner than conventional gasoline and to reduce smog-forming pollutants in the air and is a method that is already encouraged by the EPA.[209] Congress first created the federal RFG program in the 1990 CAA Amendments.[210] The CAA requires RFG in cities with high smog levels, as mandated by the EPA and is optional elsewhere.[211] RFG is currently used in seventeen states and the District of Columbia, accounting for about thirty percent of gasoline sold in the United States.[212] While the Denver North Front Range Area is not currently in attainment for ozone, the CAA does not mandate that the area utilize RFG.[213] Ozone non-attainment areas where the CAA does not mandate RFG (like Denver) can apply to the EPA and opt-into the RFG program.[214] RFG standards are widely recognized to provide considerable cost-effective benefits in reducing ozone pollution.[215] For example, in the Phoenix metropolitan area, RFG implementation has proven effective in cutting summertime smog.[216]

3. Boutique Gasoline Challenges

One of the primary risks in adopting one of the new fuel standards is that current refineries that supply the Denver market may elect not to incur the expense and burden of supplying the Denver market with the proposed fuel varieties mentioned above. Currently, six refineries in the region primarily supply the Denver market. Among the ozone reduction fuels strategies, the RAQC has conducted the following fuels scenarios to apply to the Denver North Front Range Area:

- Retain the current 7.8 RVP summertime standard, but eliminate the one psi ethanol waiver[217]
- Adopt a 7.0 RVP summertime standard and retain the one psi ethanol waiver

[209] EPA, *Reformulated Gasoline*, last updated April 28, 2016, http://www.epa.gov/gasoline-standards/reformulated-gasoline

[210] *Id.*

[211] *Id.*

[212] *Id.*

[213] *See id.*

[214] A Coalition of Colorado's Local Governments and Environmental Groups, The Path Forward: Reducing Ozone Pollution to Protect Public Health in the Colorado Front Range, available at http://ozoneaware.org/postfiles/comments/The%20Path%20Forward.pdf.

[215] *Id.* at 9.

[216] *Id.* at 9.

[217] *Id.* at 12. Gasoline blended with ethanol evaporates more readily than non-blended gasolines and increases the permeability of gasoline in fuel systems, resulting in higher VOC emissions, a precursor to ozone pollution.

- Adopt a 7.0 RVP summertime standard and eliminate the one psi ethanol waiver
- Opt-into the federal RFG[218]

In order to comply with any of the scenarios above, oil refineries supplying the Colorado Front Range would face incremental operating costs, incremental capital investments to produce the boutique fuel, and lost light end values.[219] Refineries must make expensive modifications in order to produce boutique fuels; however, neither the state nor the EPA has the power to force refineries to produce these boutique fuels.[220] In order to supply the Colorado Front Range with the proposed alternative fuels mentioned above, the total capital costs for the oil refinery industry range from $250-$710 million per refinery.[221] This equates to an 11.4 to 18.8 cent per gallon market premium (versus conventional gasoline) paid by consumers at the fuel pump.[222] Refiners will require four to five years to make the necessary adjustments to their refineries if they choose to supply the Denver North Front Range Area with boutique fuels.[223] Denver's adoption of a new fuel standard could make the market somewhat of an island during early stages of the program with the potential for significant pricing upsets.[224] Refineries may elect to exit the Denver market, refrain from making the investments required by a new fuel standard, or send their gasoline to other fuel markets.

As other nearby states with non-attainment areas seek ways to reach ozone attainment, they may consider mandating the use of boutique fuels within their borders. If Colorado and nearby states could collaborate to create a regional boutique fuel strategy, thereby increasing demand for boutique fuels, gasoline refineries would probably be more willing to make the necessary investments to produce these boutique fuels. As demand for boutique fuels increases, refineries would likely be incentivized to increase supply. Increased supply of boutique fuels, thanks to regional collaboration concerning the boutique fuel supply, should help mitigate gasoline price volatility, reduce ozone pollution, and help states achieve ozone NAAQS attainment.

---

[218] Executive Summary Presentation for Denver Regional Air Quality Council by Energy Analysts International, March 4, 2011.

[219] *Id.* Light end rejection represents removal of light hydrocarbons from the gasoline pool…the cost to the refiners is either lost stream value and/or additional capital and operating costs to convert these streams to lower RVP streams."

[220] *Id.*

[221] *Id.*

[222] *Id.* "There have often been 2 to 21 CPG market premiums paid for similar low RVP (7 psi/no waiver) fuels (Detroit and Kansas City) relative to conventional fuels."

[223] Executive Summary Presentation for Denver Regional Air Quality Council by Energy Analysts International, March 4, 2011.

[224] *Id.*

IX. CONCLUSION

Over the last three decades, Colorado has successfully reduced ground-level ozone pollution, but the EPA's new ozone NAAQS will prove to be a tremendous burden for the state. State officials believe that background ozone will prevent areas in Colorado from achieving ozone NAAQS attainment under the 2015 standard. The EPA confesses that background ozone levels in the United States are rising, yet the agency insists that background ozone will not prevent states from meeting the 2015 standard. By more effectively accounting for background ozone, states and the EPA can further develop local, regional, and national approaches to regulate and reduce manmade emissions that contribute to ground-level ozone. If Colorado is to reach attainment status for ozone NAAQS, the state must focus on mobile-source emissions. While the costs to the state, automobile industry, and oil industry may be high, there appear to be very few options left for reducing ozone emissions in the state. Due to the Denver Metro North Front Range Area's current non-attainment status, the state should seriously consider adopting California's motor vehicle emission standards, particularly the ZEV Mandate. Furthermore, modification to Denver's gasoline supply will ensure that non-ZEVs will emit fewer ozone precursors and help the region obtain attainment status for ozone NAAQS. Over the years, Colorado has made substantial progress decreasing ozone pollution across the state, but now Colorado will be hard-pressed to further reduce ozone pollution without considerable expense. By adopting California's more aggressive stance on motor vehicle emissions along with making upgrades to Denver's gasoline supply, Colorado and the EPA can work together to effectively manage, reduce, and control ground-level ozone pollution in Colorado.