

# The BLM’s Duty to Incorporate Climate Science into Permitting Practices and a Proposal for Implementing a Net-Zero Requirement into Oil and Gas Permitting

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**INTRODUCTION: “CLIMATE RISK IS INVESTMENT RISK.” THE STATEMENT APPLIES TO ASSET MANAGERS, WHETHER THE INVESTMENT IS MONEY OR LAND.**

“Climate risk is investment risk,” announced Larry Fink in a letter to CEOs this January.<sup>1</sup> Mr. Fink is the Founder, Chairman and CEO of

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<sup>1</sup> Larry Fink, *Larry Fink’s Annual Letter to CEO’s: A Fundamental Reshaping of Finance*, BLACKROCK, <https://www.blackrock.com/corporate/investor-relations/2020->

BlackRock, the largest money-management firm in the world, with more than six trillion dollars in assets under management.<sup>2</sup> Each year, Mr. Fink sends a letter to CEOs signaling BlackRock's investment priorities. This year Mr. Fink warned companies that climate change is driving a profound reassessment of risk and asset values.<sup>3</sup> He reminded CEOs that he has a duty to manage assets according to the priorities of his clients, most of whom seek a sustained yield with a multigenerational investment horizon. Mindful of these priorities, and the threat climate change poses to these objectives, Mr. Fink demanded more robust climate change disclosures from companies seeking access to BlackRock's very deep pockets.<sup>4</sup> Mr. Fink demanded this information because he recognized that "business as usual" is not good business in light of the challenges and risks presented by climate change.<sup>5</sup>

The hotter the world gets, the graver the forecasted consequences. Observed warming trends reinforce the importance of limiting global warming to 1.5 °C to avoid catastrophic effects and reduce the severity of unavoidable changes.<sup>6</sup> To achieve this result, the International Panel on

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*larry-fink-ceo-letter* (last visited June 9, 2020) [hereinafter *Blackrock Annual Letter to CEOs*].

<sup>2</sup> Larry Fink has been named one of the "World's Greatest Leaders" by Fortune. See *The World's 50 Great Greatest Leaders – Rank 8 Larry Fink*, FORTUNE (2018), <https://fortune.com/worlds-greatest-leaders/2018/larry-fink/>. Barrons has named him one of the "World's Best CEOs" for 13 consecutive years. *Larry Fink*, BLACKROCK, <https://www.blackrock.com/corporate/about-us/leadership/larry-fink> (last visited Feb. 20, 2020).

<sup>3</sup> *Blackrock Annual Letter to CEOs*, *supra* note 1.

<sup>4</sup> *Id.*; see also Andrew Ross Sorkin, *BlackRock C.E.O. Larry Fink: Climate Crisis will Reshape Finance*, N.Y. TIMES (Jan. 14, 2020), <https://www.nytimes.com/2020/01/14/business/dealbook/larry-fink-blackrock-climate-change.html>.

<sup>5</sup> Mr. Fink is not alone. The American Bar Association's House of Delegates unanimously adopted a resolution in August 2019 urging every level of government and the private sector to "recognize their obligation to address climate change" and instructing all lawyers "to advise their clients of the risks and opportunities that climate change provides." AM. BAR ASS'N, HOUSE OF DELEGATES, RESOLUTION 111 (2019), <https://www.americanbar.org/content/dam/aba/directories/policy/annual-2019/111-annual-2019.pdf>; John R. Nolon, *Feature Land Use Strategies that Mitigate Climate Change*, AM. BAR ASS'N (2020), [https://www.americanbar.org/groups/real\\_property\\_trust\\_estate/publications/probate-property-magazine/2020/january-february/land-use-strategies-mitigate-climate-change/](https://www.americanbar.org/groups/real_property_trust_estate/publications/probate-property-magazine/2020/january-february/land-use-strategies-mitigate-climate-change/).

<sup>6</sup> See generally Intergovernmental Panel on Climate Change [IPCC], 2018: *Summary for Policy Makers*, in GLOBAL WARMING OF 1.5°C: AN IPCC SPECIAL REPORT ON THE IMPACTS OF GLOBAL WARMING OF 1.5°C ABOVE PRE-INDUSTRIAL LEVELS AND RELATED GLOBAL GREENHOUSE GAS EMISSION PATHWAYS, IN THE CONTEXT OF STRENGTHENING THE GLOBAL RESPONSE TO THE THREAT OF CLIMATE CHANGE, SUSTAINABLE DEVELOPMENT, AND EFFORTS TO ERADICATE POVERTY (Masson-Delmotte et al. eds., 2018) [hereinafter IPCC 1.5° Special Report, Summary for Policy Makers].

Climate Change (“IPCC”) identifies a reduction target for global net anthropogenic carbon emissions of forty-five percent by 2030 and a net-zero target by 2050 in order to limit warming to a (hopefully) manageable level.<sup>7</sup> At this late stage in the game, the equation is simple. Higher greenhouse gas (“GHG”) emission trajectories lead to higher forecasted global warming with graver environmental and security consequences.<sup>8</sup> In other words, high emissions result in high risk. Failing to reduce GHG emissions is a risk management failure.<sup>9</sup>

Like Mr. Fink, the Bureau of Land Management (“BLM”) is also an asset manager. The BLM manages more than 255.8 million acres of public land and most of the federal government’s mineral estate (over 700 million acres).<sup>10</sup> Congress instructed the BLM to manage these assets for sustained yield with a multigenerational investment horizon—priorities very similar to Mr. Fink’s clients.<sup>11</sup> Unlike Mr. Fink, the BLM’s current management priorities do not recognize that “climate risk is investment risk.”

The BLM has authority over a significant portion of national GHG emissions. Emissions from fossil fuels produced on federal land averaged almost twenty-four percent of national CO<sub>2</sub> emissions and over seven percent of methane emissions for the past ten years.<sup>12</sup> Instead of following

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<sup>7</sup> *Id.* at 14.

<sup>8</sup> THE NATIONAL SECURITY, MILITARY, AND INTELLIGENCE PANEL ON CLIMATE CHANGE [NSMIP], A SECURITY THREAT ASSESSMENT OF GLOBAL CLIMATE CHANGE 6 (2020) [hereinafter NSMIP, A SECURITY THREAT ASSESSMENT OF GLOBAL CLIMATE CHANGE] (“Higher levels of warming will pose catastrophic, and likely irreversible global security risks over the course of the 21st century.”).

<sup>9</sup> *Id.* at 13 (“If we collectively turn our backs on these threats, we stand on the precipice of some of the greatest, multi-dimensional security threats the world has ever seen.”).

<sup>10</sup> CAROL VINCENT ET AL., CONG. RSCH. SERV., R42346, FEDERAL LAND OWNERSHIP: OVERVIEW AND DATA (2020), <https://fas.org/sgp/crs/misc/R42346.pdf>; Karin P. Sheldon & Pamela Baldwin, *Areas of Critical Environmental Concern: FLPMA’s Unfulfilled Conservation Mandate*, 28 COLO. NAT. RES. ENERGY & ENVTL. L. REV. 1, 10 (2017).

<sup>11</sup> This argument is more fully developed in Section III.A. *See also* Jayni Foley Hein, *Federal Lands and Fossil Fuels: Maximizing Social Welfare in Federal Energy Leasing*, 42 HARV. ENVTL. L. REV. 1, 4 (2018) (noting that many externalities are unaccounted for in federal fossil fuel mineral development even though “a well-run business would not give away its assets for a fraction of their true value, nor allow outside actors to impose uncompensated costs on its bottom line.”).

<sup>12</sup> MATTHEW D. MERRILL ET AL., U.S. GEOLOGICAL SERV., FEDERAL LANDS GREENHOUSE GAS EMISSIONS AND SEQUESTRATION IN THE UNITED STATES: ESTIMATES FOR 2005–14, at 1, 8 (2018), <https://doi.org/10.3133/sir20185131> [hereinafter USGS FEDERAL LANDS GHG REPORT 2014]; *see also* U.S. DEPT. OF INT., BUREAU OF LAND MGMT., CUMULATIVE BLM NEW MEXICO GREENHOUSE GAS EMISSIONS: A SUPPLEMENTAL WHITE PAPER 18 (2019) (summarizing results of national inventory).

the global trend of mitigating the effects of climate change by avoiding, minimizing, and offsetting GHG emissions, the BLM is increasing fossil fuel production on federal lands and eliminating requirements that previously minimized GHG emissions during the extraction process.<sup>13</sup> With everything else held constant, more fossil fuel production obviously results in more GHG emissions unless some sort of offsetting program is implemented. Increasing GHGs in the atmosphere exacerbates the effects of climate change with potentially disastrous effects for BLM-managed landscapes and for humanity in general.

The purpose of this Article is twofold. First, the Article argues that the BLM has a statutory duty to respond to climate change, which includes the duty to avoid exacerbating climate change. Second, it seeks to move the legal discussion from aspiration to action by proposing a legal strategy, using the existing legal framework, by which the BLM can achieve net-zero emissions from all new mineral development activity. While the Article focuses on oil and gas development, the same methodology could be applied to coal mining, tar sands development, and other sources of GHG emissions.

This Article is organized into seven sections: Part I (this section) provides an introduction. Part II discusses climate science and the BLM's authority over nationally significant emissions that contribute to exacerbating climate change. Part III argues that without incorporating climate science into its land management decisions, the BLM cannot fulfill its statutory duties under the Federal Land Management Policy Act or its legal responsibility to avoid arbitrary and capricious decisionmaking under the Administrative Procedure Act. Part IV turns to the National Environmental Policy Act, arguing that its procedural requirements also require the BLM to take a "hard look" at the cumulative effects of climate change, risks associated with exacerbating climate change through seemingly de minimis contributions, and forecasted ecological trends caused by climate change. Part V argues that the BLM should develop a

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<sup>13</sup> *Oversight on Examining the Policies and Priorities of the Bureau of Land Management, the U.S. Forest Service, and the Power Marketing Administrations Before the Subcomm. on Energy & Mineral Res. of the H. Comm. on Nat. Res.*, 116th Cong. 2 (2019) (statement of Michael Need, Deputy Director, Bureau of Land Management) (emphasizing BLM efforts to promote and permit fossil fuel energy production, including internal department directives limiting and constricting environmental review under NEPA as well as a Solicitor Order directing BLM to "promote the exploration and development of Federal onshore oil and gas and solid mineral resources."); *see also* Exec. Order No. 13783, 82 Fed. Reg. 16,093, 16,093 (Mar. 28, 2017) [hereinafter E.O. 13783, *Energy Independence*] (rescinding Executive Orders and Plans related to responding to climate change and instructing all agencies to "suspend, revise, or rescind" agency actions arising from instructions related to addressing climate change).

comprehensive GHG mitigation plan for its oil and gas permitting decisions, including the adoption of a net-zero requirement for all new oil and gas development activity. Part VI suggests ways to incorporate GHG mitigation at each stage of the oil and gas development process using the existing legal structure. Part VII concludes by arguing that a net-zero requirement on all new oil and gas development activity is reasonable and has precedent.

Admittedly, even if fully implemented this proposal would only result in a fraction of the necessary reductions that must be made in accordance with the IPCC's latest guidance. However, even grand journeys are composed of individual steps, and it is time for the BLM to take a step in the right direction.

## II. CLIMATE SCIENCE AND THE BLM'S CONTRIBUTION TO CLIMATE CHANGE

The days of debating whether climate change is real have long since passed. Even the fossil fuel industry now recognizes that human activity contributes to our changing climate.<sup>14</sup> The BLM is the largest landowner in the United States and is responsible for managing all federally owned onshore minerals.<sup>15</sup> The BLM has pursued this role with zeal, encouraging expansive oil, natural gas, and coal development. Though at one time this strategy arguably served the national interest, those interests have changed. With climate change presenting increasingly dire consequences each day, the continued push for fossil fuel development does not take into account the long-term environmental needs of future generations.<sup>16</sup> Instead of benefiting the national interest, a permitting process that exacerbates climate change poses an existential threat to the national interest.

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<sup>14</sup> MARIA L. BANDA, ENVTL. L. INST., CLIMATE SCIENCE IN THE COURTS: A REVIEW OF U.S. AND INTERNATIONAL JUDICIAL PRONOUNCEMENTS 2 (2020) (noting that the existence of climate change and that human activity exacerbates climate change are no longer disputed by the federal government or industry litigants).

<sup>15</sup> VINCENT, *supra* note 10.

<sup>16</sup> 43 U.S.C. § 1702(c) (defining "multiple use" to require a "combination of balanced and diverse resource uses that takes into account the long-term needs of future generations").

*A. Climate change is happening faster than anticipated and increasing GHG emissions will only exacerbate the risks of climate change.*

The World Economic Forum opened the 2020 Global Risks Report with a sobering observation: climate change is “striking harder and more rapidly than many expected.”<sup>17</sup> In 2017, the Climate Science Special Report summarized “thousands of studies conducted by tens of thousands of scientists around the world” documenting changes in global temperatures, changes in rainfall patterns, disappearing snow cover, increasing incidents of drought, changing storm patterns, and an increase in atmospheric water vapor.<sup>18</sup> Recently, other scientists have documented a connection between the increase in atmospheric water vapor and the frequency of more extreme weather events including stronger hurricanes.<sup>19</sup> “Evidence for a changing climate abounds, from the top of the atmosphere to the depths of the oceans.”<sup>20</sup> The unanticipated speed of these global changes prompted the IPCC to issue a special report in 2019, clarifying the importance of limiting global warming to 1.5 °C.<sup>21</sup> “Limits to adaptive capacity exist at 1.5 °C of warming, [and] become more pronounced at higher levels of warming.”<sup>22</sup>

Concern over exceeding 1.5 °C of warming is not limited to investors and scientists—national security experts also see risks. According to a recent report issued by the nonpartisan National Security, Military, and Intelligence Panel on Climate Change, the medium-long term scenario for warming between 2 °C to 4 °C presents “a potentially unmanageable, ‘very high-catastrophic’ global security threat—such that this scenario must be

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<sup>17</sup> WORLD ECON. F., THE GLOBAL RISKS REPORT 2020, at 33 (2020), <https://www.weforum.org/reports/the-global-risks-report-2020> [hereinafter WEF, GLOBAL RISKS REPORT 2020].

<sup>18</sup> U.S. GLOB. CHANGE RSCH. PROGRAM, CLIMATE SCIENCE SPECIAL REPORT 36 (Donald J. Wuebbles et al. eds., 2017), [https://science2017.globalchange.gov/downloads/CSSR2017\\_FullReport.pdf](https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf) [hereinafter NCA4 VOL. 1, CLIMATE SCIENCE SPECIAL REPORT]; see also U.S. GLOB. CHANGE RSCH. PROGRAM, IMPACTS, RISKS, AND ADAPTATION IN THE UNITED STATES: FOURTH NATIONAL CLIMATE ASSESSMENT, VOLUME II: REPORT-IN-BRIEF (David Reidmiller et al. eds., 2018), [https://nca2018.globalchange.gov/downloads/NCA4\\_Report-in-Brief.pdf](https://nca2018.globalchange.gov/downloads/NCA4_Report-in-Brief.pdf) [hereinafter NCA4 VOL. 2, CLIMATE SCIENCE REPORT IN BRIEF]. The report in Volume II, first published in 2018 and revised in June 2019, is the most recent formal summary of the best available science regarding observed and forecasted changes.

<sup>19</sup> *Hurricanes and Climate Change*, UNION OF CONCERNED SCIENTISTS (June 25, 2019), <https://ucsusa.org/resources/hurricanes-and-climate-change>.

<sup>20</sup> NCA4 VOL. 1, CLIMATE SCIENCE SPECIAL REPORT, *supra* note 18, at 36.

<sup>21</sup> IPCC 1.5° Special Report, Summary for Policy Makers, *supra* note 6.

<sup>22</sup> *Id.* at 10, ¶ B.6.3.



avoided unequivocally.”<sup>23</sup> The report characterized climate change as a “threat multiplier.”<sup>24</sup> Changing climate conditions (causing food insecurity, water scarcity, loss of rural livelihoods, and extreme weather) accelerate existing social tensions (like migration, disease, state fragility, conflict, and increased social violence), resulting in intensified national security risks.<sup>25</sup> Without mincing words, the report characterized the risks of unabated climate change as “very high” and “catastrophic.”<sup>26</sup> “If allowed to reach levels that scientific models anticipate, climate change will wreak havoc on the security of our nation, and indeed all regions of the globe.”<sup>27</sup> The report also concluded that existing policies to address climate change are insufficient to keep warming below 1.5 °C, and that current emission trajectories will blow past the 2 °C mark by mid-century and could reach a disastrous 4 °C by the end of the century.<sup>28</sup>

There is scientific consensus that human activities have already caused approximately 1.0 °C of global warming.<sup>29</sup> Impacts on natural and human systems from global warming have already been observed.<sup>30</sup> Allowing global warming to exceed 1.5 °C will likely have irreversible impacts on people and other species, including the loss of entire

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<sup>23</sup> NSMIP, A SECURITY THREAT ASSESSMENT OF GLOBAL CLIMATE CHANGE, *supra* note 8, at 9.

<sup>24</sup> *Id.* at 18.

<sup>25</sup> *See, e.g., id.* at 18–29 (“First, the sudden shifts in regional climate and weather patterns increased localized physical shocks, causing new constraints in resources and making natural disasters more frequent and intense in communities across the world. Then, as human systems are disturbed by shocks to local environments, second-order effects creating new migration patterns and community fragility can create or exacerbate social tensions at the state and regional levels. This increased regional friction may threaten new territorial disputes, conflicts, trade and economic shocks, and harmful unilateral actions.”); *id.* at 16–23 (summarizing regional and intersecting climate security threats for each area of the globe in short- and long-term scenarios).

<sup>26</sup> *Id.* at 8 (defining “very high” to mean “severe and systemic risk to human and social security systems” and “catastrophic” to mean “disastrous and irreversible risk to human social and security systems”).

<sup>27</sup> *Id.* at 12.

<sup>28</sup> *Id.* at 7 (“Even if all existing climate policies are implemented, we are on track to increase global temperatures by as high as 3.2°C . . . by the end of the century. . . . On current emissions trajectories, global warming levels could reach 2°C . . . as soon as mid-century and 4°C . . . as soon as the end of the century.”).

<sup>29</sup> IPCC 1.5° Special Report, Summary for Policy Makers, *supra* note 6, at 4, ¶ A.1; *see also* WORLD METEOROLOGICAL ORG., WMO STATEMENT ON THE STATE OF THE GLOBAL CLIMATE IN 2019, at 3 (2019), [https://library.wmo.int/doc\\_num.php?explnum\\_id=10211](https://library.wmo.int/doc_num.php?explnum_id=10211) (“The year 2019 ended with a global average temperature of 1.1°C above estimated pre-industrial averages, second only to the record set in 2016.”).

<sup>30</sup> IPCC 1.5°C Special Report, Summary for Policy Makers, *supra* note 6, at 5, ¶ A.3.1.

ecosystems.<sup>31</sup> Future climate-related risks “depend on the rate, peak, and duration of warming.”<sup>32</sup> In other words, reaching and sustaining net-zero GHG emissions earlier, reduces risks.<sup>33</sup> Delay in reducing GHG emissions (our current trajectory) exacerbates risks.

This climate change is the result of a change in the composition of the atmosphere.<sup>34</sup> Excess GHGs have compromised the atmosphere’s ability to provide a stable climate that functions consistent with historic conditions. As a result, the functionality of the atmosphere has been degraded. For hundreds of thousands of years—during the entirety of human civilization—the average carbon concentration in the atmosphere fluctuated between 180 and 280 parts per million (“ppm”).<sup>35</sup> With the industrial revolution, the average concentration began increasing.<sup>36</sup> Between 1958 and 2019, the average annual CO<sub>2</sub> concentration skyrocketed from 315 ppm to over 400 ppm.<sup>37</sup> According to the United States Environmental Protection Agency (“EPA”), the concentration of CO<sub>2</sub> has increased forty-six percent over pre-industrial levels, while the concentration of methane has increased 165 percent during this period.<sup>38</sup> These and other heat trapping gasses (like nitrous oxide, and fluorinated gases) increased average global temperatures—a gradual shift upward that occurred consistent with scientific forecasts.<sup>39</sup> The observed warming trend leaves no tolerance for arguments denying the anthropogenic influence on climate change. As the Fourth National Assessment

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<sup>31</sup> *Id.* at 5, ¶ A.3.1.

<sup>32</sup> *Id.* at 5, ¶ A.3.2.

<sup>33</sup> *Id.* at 5, ¶ A.2.2.

<sup>34</sup> EPA, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS 1990-2018, EXECUTIVE SUMMARY ES-2 (2020), <https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-chapter-executive-summary.pdf> [hereinafter EPA GHG INVENTORY 2018].

<sup>35</sup> NCA4 VOL. 1, CLIMATE SCIENCE SPECIAL REPORT, *supra* note 18, at 82.

<sup>36</sup> NOAA Global Monitoring Division, *CO<sub>2</sub> at NOAA’s Mauna Loa Observatory Reaches New Milestone: Tops 400 ppm*, NOAA (May 10, 2013), <https://www.esrl.noaa.gov/gmd/news/7074.html> (reporting milestone of exceeding daily mean of 400 ppm).

<sup>37</sup> *Global Carbon Dioxide Growth in 2018 Reached 4<sup>th</sup> Highest on Record*, NOAA (Mar. 22, 2019), <https://www.noaa.gov/news/global-carbon-dioxide-growth-in-2018-reached-4th-highest-on-record>; NOAA Global Monitoring Division, *supra* note 36.

<sup>38</sup> EPA GHG INVENTORY 2018, *supra* note 34, at ES-15.

<sup>39</sup> IPCC 1.5°C Special Report, Summary for Policy Makers, *supra* note 6, ¶ A.1.1; *see also* NCA4 VOL. 1, CLIMATE SCIENCE SPECIAL REPORT, *supra* note 18, at 31.

summarized, “there are no credible alternative human or natural explanations supported by the observational evidence.”<sup>40</sup>

Limiting global warming requires adhering to a carbon budget that is being rapidly depleted.<sup>41</sup> The global average temperature will continue to rise until global GHG concentrations stop increasing.<sup>42</sup> The level of risk imposed on the world depends on how high the global average temperature rises.<sup>43</sup> Science advisors on the IPCC attempt to quantify risk scenarios by associating atmospheric concentrations with different levels of warming—450 ppm for 2 °C of warming and 430 ppm for 1.5 °C of warming.<sup>44</sup> But global warming does not offer a selection of items that can be ordered from a catalogue to fit our budgets and tastes. Since 2007, world leaders have roughly targeted 2 °C of warming as the “safe” upper limit of a new normal.<sup>45</sup> That characterization of “safe” came with caveats. Those

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<sup>40</sup> NCA4 VOL. 2, CLIMATE SCIENCE REPORT IN BRIEF, *supra* note 18, at 35 (“Current and future greenhouse gas emissions, and thus mitigation actions to reduce emissions, will largely determine future climate change impacts and risks to society.”).

<sup>41</sup> IPCC 1.5°C Special Report, Summary for Policy Makers, *supra* note 6, at 12, ¶ C.1.3 (“Limiting global warming requires . . . staying within a total carbon budget. By the end of 2017, anthropogenic CO<sub>2</sub> emissions since the pre-industrial period are estimated to have reduced the total carbon budget for 1.5°C by approximately 2200 +/- 320 GtCO<sub>2</sub> (*medium confidence*). The associated remaining budget is being depleted by current emissions of 42 +/- 3 GtCO<sub>2</sub> per year (*high confidence*).”).

<sup>42</sup> IPCC 1.5°C Special Report, Summary for Policy Makers, *supra* note 6, at 12, ¶ C.1.3 (“Limiting global warming requires limiting the total cumulative global anthropogenic emissions of CO<sub>2</sub>”); *see also* EPA GHG INVENTORY 2018, *supra* note 34, at ES-1 (noting that in 1992, the United States signed and ratified the United Nations Framework Convention on Climate Change with a goal of “stabilization of greenhouse concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system”).

<sup>43</sup> IPCC 1.5°C Special Report, Summary for Policy Makers, *supra* note 6, at ¶ A.3.2.

<sup>44</sup> This statement is obviously oversimplified. The emissions scenarios evaluated by the IPCC are far more complex. Nevertheless, the concept remains the same. IPCC, CLIMATE CHANGE 2014 SYNTHESIS REPORT SUMMARY FOR POLICYMAKERS 20–21 (2014) [hereinafter IPCC AR5 SYNTHESIS REPORT]; *see also* IPCC 1.5°C Special Report, Summary for Policy Makers, *supra* note 6, at 12, ¶ C.1.3 (outlining budget scenarios for limiting warming to 1.5°C).

<sup>45</sup> For example, in the 2010 Cancun Agreements to the United Nations Framework Convention on Climate Change, the signatories agreed that to “prevent dangerous anthropogenic interference” with the atmosphere, they must “hold the increase in global average temperature below 2°C above pre-industrial levels.” U.N. Framework Convention on Climate Change, *The Cancun Agreements: Outcome of the Work of the Ad Hoc Working Group on Long-term Cooperative Action Under the Convention*, 4, U.N. Doc. FCCC/CP/2010/Add.1, Dec. 1/CP.16 (Mar. 11, 2011); *see* Paris Agreement to U.N. Framework Convention on Climate Change, art. 2, Dec. 12, 2015, T.I.A.S. No. 16-1104, [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf) [hereinafter Paris Agreement].

caveats included lethal heat waves, desertification, forest and crop failures, shrinking snowpacks, rising sea levels, intensified storms, warming oceans, melting permafrost, widespread species extinctions, extreme drought, ecological disruption, and potential tipping points—none of which sound safe.<sup>46</sup> The characterization of “safe” is also a best guess. No one has ever shifted the mean global temperature upward before. No one can be sure how the world’s climate and ecological system will react. Changing the atmospheric composition is an unprotected experiment filled with uncertainties and risks.<sup>47</sup>

“Potential surprises” is how the Fourth National Assessment characterizes some of the risks of unexpected climate change consequences.<sup>48</sup> “The more the climate changes, the greater potential for these surprises.”<sup>49</sup> First, there is a risk that the models are *underestimating* the warming potential of different emission scenarios.<sup>50</sup> Currently,

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<sup>46</sup> See generally WORKING GROUP II CONTRIBUTION TO THE FIFTH ASSESSMENT REPORT OF THE IPCC, CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY (Fields et al. eds., 2014). For similar information with fewer words but more opinion and emotion, see Bill McKibben, *Global Warming’s Terrifying New Math*, ROLLING STONE (July 19, 2012), <https://www.rollingstone.com/politics/politics-news/global-warmings-terrifying-new-math-188550/>.

<sup>47</sup> Any data informed decision-making process risks two types of error, Type I error and Type II error. A Type I error occurs when a decision maker chooses a course of action based on a projected outcome when the projected outcome is not correct; whereas a Type II error occurs when a decision maker rejects the possibility of a projected outcome and the projected outcome turns out to be correct. In the context of climate change, a Type I error would arise where the BLM took a course of action because of projected climate impacts when those impacts failed to come to fruition. For example, the BLM anticipated reduced water availability due to lower snowpack, and increased rains compensated for the lighter snowpack. A Type II error then is when the BLM decides a course of action but fails to take account of climate change impacts when making that decision. For example, the BLM relied upon historic data for water availability without considering the forecasted shortage. See Ryan P. Kelly et al., *Science, Policy, and Data-Driven Decisions in a Data Vacuum*, 44 *ECOLOGY L.Q.* 7 (2017); Berry J. Brosi & Eric G. Biber, *Statistical Inference, Type II Error, and Decision Making Under the US Endangered Species Act*, 7 *FRONTIERS ECOLOGY & ENV’T* 487, 488 (2008).

<sup>48</sup> NCA4 VOL. 2, CLIMATE SCIENCE REPORT IN BRIEF, *supra* note 18, at 57 (“Both large-scale shifts in the climate system (sometimes called ‘tipping points’) and compound extremes have the potential to generate outcomes that are difficult to anticipate and may have high consequences.”).

<sup>49</sup> *Id.*

<sup>50</sup> NCA4 VOL. 1, CLIMATE SCIENCE SPECIAL REPORT, *supra* note 18, at 422 (“There is *very high confidence* in the likelihood of the existence of positive feedbacks and tipping elements . . . There is *very high confidence* that some feedbacks can be quantified, others are known but cannot be quantified, and others may yet exist that are currently unknown.”); see also NCA4 VOL. 2, CLIMATE SCIENCE REPORT IN BRIEF, *supra* note 18, at 66 (“[D]ue to their systematic tendency to underestimate temperature change during past warm periods,

observed effects are occurring faster than the models predicted, which indicates that the models may be conservative.<sup>51</sup> For example, polar ice is melting faster than the models predicted, driven partially by sea level temperatures rising more quickly than the models anticipated, indicating that the deleterious effects may occur sooner or more intensely than previously imagined.<sup>52</sup>

Second, there is a risk that warming will happen too quickly for the ecological systems that support human existence to adapt. As one economic report recently summarized, “[c]limate change is shifting ecosystems and destroying forms of natural capital such as glaciers, forests, and ocean ecosystems, which provide important services to human communities. This in turn imperils the human habitat and economic activity.”<sup>53</sup> To date, observed changes include melting glaciers that affect water supplies, melting sea ice and rising sea levels, desertification and lost agricultural capacity, changed precipitation patterns and increased flooding, stressed ecosystems and increased fire risk, and altered weather patterns and mismatched timing for ecological events.<sup>54</sup> Adapting to these changes requires time, but the effects of climate change are happening more quickly than anticipated, which does not leave much time for adaptation.

Third, there is a risk that we will encounter feedback loops or tipping points, which could produce sudden and catastrophic harm by disrupting natural ecological cycles.<sup>55</sup> One example of a disruptive feedback loop appears to be happening with forests in the western United States.

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models may be more likely to underestimate than overestimate the long-term future change.”).

<sup>51</sup> NCA4 VOL. 1, CLIMATE SCIENCE SPECIAL REPORT, *supra* note 18, at 422; *see also* WEF, GLOBAL RISKS REPORT 2020, *supra* note 17, at 30.

<sup>52</sup> *The Greenland Ice Sheet is Melting Unusually Fast*, THE ECONOMIST (June 17, 2019), <https://www.economist.com/graphic-detail/2019/06/17/the-greenland-ice-sheet-is-melting-unusually-fast>; Naomi Oreskes et al., *Scientists Have Been Underestimating the Pace of Climate Change*, SCI. AM. (Aug. 19, 2019), <https://blogs.scientificamerican.com/observations/scientists-have-been-underestimating-the-pace-of-climate-change/> (summarizing content of book, *Discerning Experts*, which collects data demonstrating observational data that effects of climate change are occurring more rapidly than the models predicted).

<sup>53</sup> JONATHAN WOETZEL ET AL., MCKINSEY GLOBAL INITIATIVE, CLIMATE RISK AND RESPONSE: PHYSICAL HAZARDS AND SOCIOECONOMIC IMPACTS 15 (Jan. 16, 2020), <https://www.mckinsey.com/business-functions/sustainability/our-insights/climate-risk-and-response-physical-hazards-and-socioeconomic-impacts#>.

<sup>54</sup> *Id.*

<sup>55</sup> NCA4 VOL. 2., CLIMATE SCIENCE REPORT IN BRIEF, *supra* note 18, at 33 (“Self-reinforcing cycles or feedbacks within the climate system have the potential to amplify and accelerate human-induced climate change.”).

Abnormally warm temperatures have enabled widespread bark beetle infestations that have killed millions of trees.<sup>56</sup> Extensive swaths of dead trees, combined with hotter summer temperatures and drier forest conditions, increase the likelihood of catastrophic wildfire events.<sup>57</sup> Catastrophic wildfires emit huge amounts of carbon, further exacerbating global warming. The ecological disruption is further amplified because where the forest once served as a global sink, it now acts as a source of emissions.<sup>58</sup> According to the 2014 Quadrennial Fire Review, a strategic assessment of wildfire risks on federal lands, wildfires currently produce about seventeen percent of the GHGs released annually in the United States.<sup>59</sup>

Another example of a disruptive feedback loop is permafrost, which stores large amounts of methane and carbon—significantly more than the atmosphere currently holds.<sup>60</sup> As permafrost thaws, it releases methane and carbon emissions into the atmosphere, further exacerbating global warming.<sup>61</sup> The permafrost holds more carbon than has ever been released by humans.<sup>62</sup> A sudden warming event and subsequent carbon release could therefore be catastrophic.<sup>63</sup> The bland language of the Fourth National Assessment betrays the risk that it conveys. Tipping points or feedback loops “may even shift Earth’s climate system, in part or in whole, into new states that are very different from those experienced in the recent past.”<sup>64</sup>

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<sup>56</sup> David D. Breshears et al., *Regional Vegetation Die-Off in Response to Global-Change-Type Drought*, 102 PROC. NAT’L ACAD. SCI. U.S. 15144, 15144 (2005).

<sup>57</sup> Jessica E. Halofsky et al., *Changing Wildfire, Changing Forests: The Effects of Climate Change on Fire Regimes and Vegetation in the Pacific Northwest, USA*, 16 FIRE ECOLOGY, no. 4, 2020, at 13.

<sup>58</sup> See Robert B. Keiter & Matthew McKinney, *Public Land and Resources Law in the American West: Time for Another Comprehensive Review?*, 49 ENVTL. L. 1, 18–19 (2019); see also NCA4 VOL. 2., CLIMATE SCIENCE REPORT IN BRIEF, *supra* note 18, at 45.

<sup>59</sup> Booz Allen Hamilton, *2015 Quadrennial Fire Review produced on behalf of USDA Forest Service Fire & Aviation Management and the Department of Interior Office of Wildland Fire* (May 2015), <https://www.forestsandrangelands.gov/documents/qfr/2014QFRFinalReport.pdf>.

<sup>60</sup> NCA4 VOL. 1, CLIMATE SCIENCE SPECIAL REPORT, *supra* note 18, at 29.

<sup>61</sup> *Id.*

<sup>62</sup> Samson Reiny, *Arctic Shifts to a Carbon Source Due to Winter Soil* (Nov. 11, 2019), <https://www.nasa.gov/feature/goddard/2019/arctic-shifts-to-a-carbon-source-due-to-winter-soil-emissions> (providing background and describing results of recent study indicating that the massive amounts of carbon stored in permafrost are being released at a faster rate than presumed in climate modeling).

<sup>63</sup> NCA4 VOL. 1, CLIMATE SCIENCE SPECIAL REPORT, *supra* note 18, at 29, 95, 314, 417, 419.

<sup>64</sup> NCA4 VOL. 2, CLIMATE SCIENCE REPORT IN BRIEF, *supra* note 18, at 100.

Finally, the sudden transitions associated with abrupt ecological disruption could devastate social infrastructure, threaten human lives and safety, produce widespread environmental degradation, and undermine access to water, food, and other key resources.<sup>65</sup> Consistent with this risk, the National Security, Military, and Intelligence Panel on Climate Change summarized the threat assessment of warming above 2 °C as “very likely” to include significant insecurity and destabilization.<sup>66</sup> “All regions will be exposed to potentially catastrophic levels of climate security threats, the consequences of which could lead to a breakdown of security and civilian infrastructure, economic and resource stability, and political institutions at a large scale.”<sup>67</sup>

Efforts to mitigate the effects of climate change have found their way into the courtroom. After weighing all of the evidence, recent court decisions reveal broad judicial consensus on the causes, extent, urgency, and consequences of climate change.<sup>68</sup> As the Ninth Circuit summarized, “[c]opious expert evidence establishes . . . [that] the problem is approaching the point of no return. Absent some action, the destabilizing climate will bury cities, spawn life threatening natural disasters, and jeopardize critical food and water supplies.”<sup>69</sup> The Tenth Circuit described the situation succinctly: “Less greenhouse gas emissions equals less climate change.”<sup>70</sup>

Although establishing a carbon emissions budget is politically and technically complex, the fundamental principle is simple: reducing the risks of climate change requires immediate efforts to reduce or offset GHG emissions from every source.<sup>71</sup> The potentially dire future portrayed by

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<sup>65</sup> See WEF, GLOBAL RISKS REPORT 2020, *supra* note 17, at 33–65; see generally NCA4 VOL. 2., CLIMATE SCIENCE REPORT IN BRIEF, *supra* note 18 (listing risks to infrastructure, human safety, water quality and supply, forests and other ecosystem health, pressures on wildlife and threats of extinction, disruption to agriculture and food supplies, etc.).

<sup>66</sup> NSMIP, A SECURITY THREAT ASSESSMENT OF GLOBAL CLIMATE CHANGE, *supra* note 8, at 9.

<sup>67</sup> *Id.*

<sup>68</sup> BANDA, *supra* note 14, at 2 (noting that the existence of climate change and the fact that human activity exacerbates climate change are no longer disputed by the federal government or industry litigants).

<sup>69</sup> *Juliana v. United States*, 947 F.3d 1159, 1166 (9th Cir. 2020).

<sup>70</sup> *WildEarth Guardians v. U.S. BLM*, Case No. CV-18-73-GF-BMM, 2020 U.S. Dist. LEXIS 77409, at \*9 (D. Mont. May 1, 2020).

<sup>71</sup> NSMIP, A SECURITY THREAT ASSESSMENT OF GLOBAL CLIMATE CHANGE, *supra* note 8, at 13 (“Mitigating these risks requires quickly reducing and phasing out global greenhouse gas emissions. As there are numerous policy options for doing so, we refrain from recommending a single course of action. Instead, we call for the world to achieve net-zero global emissions as soon as possible.”); see generally H. SELECT COMM. ON THE

climate models is preventable with specific, deliberate action.<sup>72</sup> Moreover, the foresight offered by climate models also imposes a responsibility: “If we see it coming, we must act in a manner that is commensurate to the scale and scope of the threat.”<sup>73</sup>

*B. The BLM has authority over nationally significant GHG emissions.*

The BLM has responsibility for, and authority over, significant GHG emissions in the United States. In 2017, the United States was the world’s largest producer of crude oil and natural gas.<sup>74</sup> As of fiscal year 2018, the BLM administered more than 38,000 onshore oil and gas leases extending across more than 25.5 million acres (almost 40,000 square miles).<sup>75</sup> The BLM also administered coal leases covering over 458,000 acres.<sup>76</sup> During fiscal year 2019, these lands produced over 274 million barrels of oil—an additional 784 million barrels were produced from federally managed offshore areas and Native American lands.<sup>77</sup> Lands managed by the BLM also produced 3.3 billion cubic feet of natural gas and 302 million tons of coal.<sup>78</sup> With great production comes great responsibility for the resulting emissions.

Fossil fuels extracted from public lands produce almost one quarter of all U.S. CO<sub>2</sub> emissions, according to an inventory conducted by the United States Geological Survey (“USGS”).<sup>79</sup> Coal mined on public lands accounted for more than thirteen percent of U.S. emissions over the past

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CLIMATE CRISIS, SOLVING THE CLIMATE CRISIS, THE CONGRESSIONAL ACTION PLAN FOR A CLEAN ENERGY ECONOMY AND A HEALTHY, RESILIENT, AND JUST AMERICA 479–96 (2020) (proposing a multi-faceted national strategy to achieve net-zero greenhouse gas emissions by 2050, including a generalized goal to make public lands “part of the climate solution”).

<sup>72</sup> NSMIP, A SECURITY THREAT ASSESSMENT OF GLOBAL CLIMATE CHANGE, *supra* note 8, at 13.

<sup>73</sup> *Id.*

<sup>74</sup> *United States Remains the World’s Top Producer of Petroleum and Natural Gas Hydrocarbons*, U.S. ENERGY INFO. ADMIN. (May 21, 2018), <https://www.eia.gov/todayinenergy/detail.php?id=36292>.

<sup>75</sup> *Oil and Gas Statistics*, BUREAU OF LAND MGMT., <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/oil-and-gas-statistics> (last visited May 14, 2020).

<sup>76</sup> *Coal Data*, BUREAU OF LAND MGMT., <https://www.blm.gov/programs/energy-and-minerals/coal/coal-data> (last visited Feb. 22, 2021).

<sup>77</sup> *Natural Resources Revenue Data*, DEP’T OF THE INTERIOR, <https://revenuedata.doi.gov/?tab=tab-production> (last visited May 14, 2020).

<sup>78</sup> *Id.* An additional one billion and 393 million cubic-feet of natural gas were produced from federally managed offshore and Native American lands, respectively. *Id.*

<sup>79</sup> USGS FEDERAL LANDS GHG REPORT 2014, *supra* note 12, at 1, 8.



decade.<sup>80</sup> Energy development on public lands also accounted for 7.3 percent of total U.S. emissions of methane, another powerful GHG.<sup>81</sup> Even after production stops, abandoned and orphaned wells and coal mines continue to emit GHGs. According to the emission inventory produced by the EPA, abandoned oil and gas wells have steadily produced between six and seven million metric tons (“MMT”) of CO<sub>2</sub> equivalent (“CO<sub>2</sub>e”) emissions annually between 1990 and the present.<sup>82</sup> Abandoned coal mines have produced similar emissions each year.<sup>83</sup>

Despite climate forecasts, and having intimate knowledge of its emissions portfolio, the BLM has been fostering regulatory policies and development that will further increase emissions from federal land.<sup>84</sup> The Trump administration encouraged and authorized additional coal development instead of finalizing the Programmatic Environmental Impact Statement (“PEIS”) which was initiated to modernize the coal program and incorporate climate change concerns.<sup>85</sup> Similarly, the BLM rolled back methane reduction efforts.<sup>86</sup> Instead of implementing a 2016 rule that was expected to reduce methane emissions on federal lands

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<sup>80</sup> Adam Aton, *Fossil Fuel Extraction on Public Lands Produce One Quarter of U.S. Emissions*, SCI. AM. (Nov. 27, 2018), <https://www.scientificamerican.com/article/fossil-fuel-extraction-on-public-lands-produces-one-quarter-of-u-s-emissions/>.

<sup>81</sup> USGS FEDERAL LANDS GHG REPORT 2014, *supra* note 12, at 1, 8.

<sup>82</sup> EPA GHG INVENTORY 2018, *supra* note 34, at ES-9.

<sup>83</sup> *Id.*

<sup>84</sup> Examples include lifting the 2016 coal leasing memorandum, rescinding the 2016 Methane Waste Prevention Rule, and dismantling sage grouse habitat protections that prioritized habitat preservation in leasing decisions. A thorough description and real-time updates of these and other regulatory roll backs under the Trump administration may be found at Harvard's Regulatory Rollback Tracker. *See Regulatory Rollback Tracker*, HARVARD LAW, <https://eelp.law.harvard.edu/regulatory-rollback-tracker/> (last visited Mar. 21, 2021).

<sup>85</sup> *See* E.O. 13783, *Energy Independence*, *supra* note 13; Exec. Order No. 13868, Promoting Energy Infrastructure and Economic Growth, 84 Fed. Reg. 15495 (Apr. 10, 2019); SECRETARY OF THE INTERIOR, SECRETARIAL ORDER 3348, CONCERNING THE FEDERAL COAL MORATORIUM (Mar. 29, 2017) (“I find that the public interest is not served by halting the Federal coal program for an extended time, nor is a PEIS required to consider potential improvements to the program.”).

<sup>86</sup> Waste Prevention, Production Subject to Royalties, and Resource Conservation; Rescission or Revision of Certain Requirements, 83 Fed. Reg. 49,184 (Sept. 28, 2018) (to be codified at 43 C.F.R. pts. 3160 & 3170).

significantly,<sup>87</sup> the BLM worked hard to devitalize the rule: first postponing, then suspending, and finally replacing the rule.<sup>88</sup>

Between now and 2030, the United States is on track to account for sixty percent of world growth in oil and gas production, expanding extraction by at least four times more than any other country.<sup>89</sup> According to the United Nations Environment Programme (“UNEP”) Emissions Gap Report, U.S. emissions are at least fifteen percent above target for pledged emission reductions.<sup>90</sup> With every year that emissions continue to rise, the goals in the Paris Agreement slip further out of reach. Emission reductions are necessary to keep global warming below 1.5 °C. Because emission reduction targets have not been met in the past, more aggressive reductions will be necessary in the years ahead if we are to keep warming below 1.5 °C.<sup>91</sup>

As a proportion of U.S. emissions, the twenty-four percent of national CO<sub>2</sub> emissions under BLM authority is a significant contribution.<sup>92</sup> The

<sup>87</sup> Waste Prevention, Production Subject to Royalties, and Resource Conservation, 81 Fed. Reg. 83,008 (Nov. 18, 2016) (to be codified at 43 C.F.R. pts. 3100, 3160 & 3170), *postponed by* Waste Prevention, Production Subject to Royalties, and Resource Conservation; Postponement of Certain Compliance Dates, 82 Fed. Reg. 27,430 (June 15, 2017) (to be codified at 43 C.F.R. pt. 3170).

<sup>88</sup> See Blake A. Watson, *Nullify, Postpone, Suspend, Stay, and Replace: The Trump Administration and the Methane Waste Prevention Rule*, 44 U. DAYTON L. REV. 363, 382 (2019) (“Shortly after Donald Trump took office on January 20, 2017, efforts were underway to abrogate the methane waste prevention rule, which became effective just three days earlier. The first attempt, which involved the passage of nullification legislation, failed when the necessary resolution was defeated in the United States Senate. The BLM thereafter postponed the compliance dates set forth in the MWPR; however, this action was held to be unlawful agency action. Undeterred, the BLM suspended the compliance dates; however, this action was enjoined. Despite these legislative and regulatory setbacks, the Trump administration and the oil and gas industry obtained a judicial stay of the 2016 waste prevention rule for most of 2017 and 2018, and the BLM, in September 2018, promulgated a replacement rule. The ultimate fate of the rescinded 2016 rule now depends on the outcome of pending lawsuits challenging the 2018 rule.”).

<sup>89</sup> KELLY TROUT & LORNE STOCKMAN, OIL CHANGE INTERNATIONAL, DRILLING TOWARD DISASTER: WHY U.S. OIL AND GAS EXPANSION IS INCOMPATIBLE WITH CLIMATE LIMITS 6 (Susan Rubinstein ed., 2019), <http://priceofoil.org/content/uploads/2019/01/Drilling-Towards-Disaster-Web-v3.pdf>.

<sup>90</sup> U.N. ENV’T PROGRAMME, EMISSIONS GAP REPORT 2019, at 20 (2019), <https://wedocs.unep.org/bitstream/handle/20.500.11822/30797/EGR2019.pdf?sequence=1&isAllowed=y> (noting that the U.S. target emission reductions were 26–28 percent of 2005 levels by 2025 and expressing concern that the Trump administration has reduced anticipated emission reductions from power plants and frozen requirements for GHG reductions in vehicle emissions and fuel economy standards).

<sup>91</sup> Chelsea Harvey & Nathaniel Gronewold, *Global CO<sub>2</sub> Footprint to Break Another Record in 2019*, E&E NEWS (Dec. 4, 2019), <https://www.eenews.net/stories/1061716715>.

<sup>92</sup> See USGS FEDERAL LANDS GHG REPORT 2014, *supra* note 12, at 1, 8.

Supreme Court found that “judged by any standard,” six percent of global GHG emissions was a “meaningful contribution” to GHG concentrations and sufficient to support standing to sue over injuries allegedly resulting from GHG emissions.<sup>93</sup> In *American Electric Power*, just ten percent of domestic emissions was deemed sufficient to support standing for the Second Circuit and at least four judges on the Supreme Court.<sup>94</sup> In *Citizens for Clean Energy v. United States Department of Interior*, the court recognized that the federal coal program managed by the BLM was responsible for an estimated eleven percent of U.S. GHG emissions, and that the plaintiffs had a concrete interest in decisions regarding the production, transportation, and consumption of coal due to its environmental effects.<sup>95</sup> Finally, in *Juliana v. United States*, the district court noted that U.S. agencies have authority over fourteen percent of global GHGs, which the court considered sufficient to satisfy the causation requirements of the court’s standing analysis.<sup>96</sup> These court decisions, finding much smaller percentages of emissions to be significant contributions to climate change, put the BLM’s authority over twenty-four percent of U.S. GHG emissions into perspective. This perspective clarifies that even if individual permitting decisions appear *de minimis*, the BLM’s permitting authority is nationally and globally significant.

Despite its clear contribution to climate change, the BLM is accelerating efforts to lease federal lands and approve drilling permits for oil and natural gas, while restricting public involvement and environmental review.<sup>97</sup> Along the way, the BLM has walked away from

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<sup>93</sup> *Massachusetts v. EPA*, 549 U.S. 497, 525–26 (2007).

<sup>94</sup> *Connecticut v. Am. Elec. Power Co.*, 582 F.3d 309 (2d Cir. 2009), *rev’d*, 564 U.S. 410 (2011); *see also* Michael Burger, Jessica Wentz & Radley Horton, *The Law and Science of Climate Change Attribution*, 45 COLUM. J. ENVTL. L. 57, 153–69 (2020) (reviewing cases including *American Electric*).

<sup>95</sup> *Citizens v. Clean Energy v. U.S. Dep’t of Interior*, 384 F. Supp. 3d 1264, 1274 (D. Mont. 2019).

<sup>96</sup> *Juliana v. United States*, 217 F. Supp. 3d 1224, 1226 (D. Or. 2016), *rev’d*, 947 F.3d 1159 (2020).

<sup>97</sup> *See, e.g.*, E.O. 13783, *Energy Independence*, *supra* note 13 (directing agencies to “review all existing regulations, orders, guidance documents, policies, and any other similar agency actions . . . that potentially burden the development or use of domestically produced energy resources, with particular attention to oil, natural gas, coal, and nuclear energy resources” and recommend actions that “could alleviate or eliminate aspects of agency actions that burden domestic energy production.”); *see generally* Michael C. Blumm & Olivier Jamin, *The Trump Public Lands Revolution: Redefining “The Public” in Public Land Law*, 48 ENVTL. L. 311 (2018) (describing multiple ways in which Trump-Era reforms reduced or eliminated avenues for public involvement in federal land-use planning decisions).

its commitment to modernize the federal coal program,<sup>98</sup> rescinded all programs and policies addressing climate change,<sup>99</sup> and adopted an illogically restricted interpretation of its authority to mitigate the adverse effects of proposed land uses.<sup>100</sup> It is no wonder that some people feel that the BLM has lost its way.<sup>101</sup>

### III. THE BLM IS LEGALLY OBLIGATED TO CONSIDER CLIMATE SCIENCE AND MANAGE FOR CLIMATE CHANGE.

The BLM is charged with managing a vast resource portfolio consistent with statutory management priorities set forth by Congress in the Federal Land Policy and Management Act (“FLPMA”) and other guiding statutes. Though the BLM has broad discretion, that discretion must be guided by congressional priorities and exercised within statutory

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<sup>98</sup> See BLM, FEDERAL COAL PROGRAM, PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT - SCOPING REPORT, VOL. I, at ES-4 (2017) [hereinafter FEDERAL COAL PROGRAM PEIS SCOPING REPORT] (“[M]odernization of the Federal coal program is warranted ... This modernization should focus on ensuring a fair return to Americans for the sale of their public coal resources; addressing the coal program’s impact on the challenge of climate change; and improving the structure and efficiency of the coal program in light of current market conditions....”). *But see* BLM, FINDING OF NO SIGNIFICANT IMPACT, “LIFTING THE PAUSE ON THE ISSUANCE OF NEW FEDERAL COAL LEASES FOR THERMAL (STEAM) COAL 1, 7 (Feb. 26, 2020) (“Because the BLM made a reasoned decision not to complete the PEIS, the information the Jewell Order endeavored to produce is unavailable and too complex in nature to produce through speculation . . . Lifting the Pause meant that the BLM resumed normal leasing activities consistent with practices established and implemented for nearly 40 years.”).

<sup>99</sup> See, e.g., SECRETARIAL ORDER 3349, AMERICAN ENERGY INDEPENDENCE § 5(b) (Mar. 29, 2017) (instructing all departments to compile and rescind climate-related policies); U.S. DEPT. OF THE INTERIOR, FINAL REPORT: REVIEW OF THE DEPARTMENT OF THE INTERIOR ACTIONS THAT POTENTIALLY BURDEN DOMESTIC ENERGY 16 (Oct. 24, 2017), [https://www.doi.gov/sites/doi.gov/files/uploads/interior\\_energy\\_actions\\_report\\_final.pdf](https://www.doi.gov/sites/doi.gov/files/uploads/interior_energy_actions_report_final.pdf) [hereinafter DOI, REPORT OF ACTIONS THAT POTENTIALLY BURDEN ENERGY].

<sup>100</sup> See BLM, INSTRUCTION MEMORANDUM NO. 2018-93, COMPENSATORY MITIGATION (July 24, 2018), <https://web.archive.org/web/20180726161704/https://www.blm.gov/policy/im-2018-093> [hereinafter IM 2018-93]. For a further discussion, see *infra* Section V.B; see also Justin Pidot, *The Bureau of Land Management’s Infirm Compensatory Mitigation Policy*, 30 FORDHAM ENVTL. L. REV. 1 (2019) [hereinafter Pidot, *The BLM’s Infirm Compensatory Mitigation Policy*].

<sup>101</sup> E.g., Jim Kenna, Opinion, *Bureau of Land Management Leaders Have Lost Their Way: A Former State Director Argues Narrow Interests Have Dominated the Agency’s Direction*, HIGH COUNTRY NEWS (May 26, 2020), <https://www.hcn.org/articles/south-opinion-bureau-of-land-management-leaders-have-lost-their-way>.

boundaries.<sup>102</sup> Under FLPMA, the BLM must protect air and atmospheric resources and prevent unnecessary or undue degradation of public lands.<sup>103</sup> As applied to managing oil and gas leasing, a federal court recently summarized the BLM's management responsibilities: "BLM has a duty to prevent undue waste; and protect the interests of the United States and safeguard the public welfare."<sup>104</sup> Ignoring climate change and jeopardizing resources charged to its care is inconsistent with the BLM's duty to engage in reasoned decisionmaking according to its statutory charter, particularly where the BLM has acknowledged the risks of climate change in the past.

*A. The BLM's Organic Act establishes a standard of care, directs the BLM to manage according to a multigenerational horizon, and identifies resources, including the atmosphere, that should not be permanently impaired.*

FLPMA serves as the BLM's organic statute. In FLPMA, Congress articulated a standard of care for the BLM's management of federal assets; established a multigenerational investment horizon; and identified specific environmental values, including the atmosphere, for the BLM to protect from permanent impairment and unnecessary or undue degradation.<sup>105</sup>

Although FLPMA grants the BLM broad management discretion, it sets a limit to that discretion by articulating a standard of care that prevents unnecessary or undue degradation, avoids permanent impairment, and ensures sustained yield of natural resources.<sup>106</sup> Congress imposed a mandatory duty when it stated that the BLM "*shall*, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands."<sup>107</sup> Other phrases in FLPMA elaborate on the standard of care. Federal lands shall be managed through land use plans

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<sup>102</sup> *California v. Bernhardt*, 472 F. Supp. 3d 573, 596–98 (N.D. Cal. 2020) (holding that the BLM exceeded its statutory discretion by prioritizing the economic interests of individual well operators over the BLM's statutory public welfare obligations articulated in FLPMA and the MLA).

<sup>103</sup> *Id.* at 616.

<sup>104</sup> *Id.* at 596 (quoting 30 U.S.C. § 187) (internal quotation and alteration omitted).

<sup>105</sup> *See id.* at 596 ("The words of the statute require that it be read broadly. More specifically, the statute mandates that BLM act comprehensively to prevent the waste of public resources.").

<sup>106</sup> 43 U.S.C. § 1732.

<sup>107</sup> *Id.* § 1732(b) (emphasis added).

“on the basis of multiple use and sustained yield.”<sup>108</sup> The terms “multiple use” and “sustained yield” are separately defined. “Multiple use” requires the BLM to make “judicious use” of federal lands without “permanent impairment” to the productivity and quality of the environment.<sup>109</sup> It also instructs the BLM to utilize resource values in a combination “that will best meet the present and future needs of the American people . . . and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.”<sup>110</sup> “Sustained yield” includes “the achievement and maintenance in perpetuity” of renewable resources.<sup>111</sup> These principles, distinctly articulated in separate parts of FLPMA, define the standard of care Congress established for the BLM’s management decisions.

Congress also established a multigenerational investment horizon as part of the BLM’s management priorities. FLPMA requires the BLM to find a combination of uses that “will best meet the present and future needs of the American people.”<sup>112</sup> In defining the term “multiple use,” Congress reiterated the multigenerational time frame for management duties and instructed the BLM to find a combination of resource uses “that takes into

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<sup>108</sup> *Id.* § 1732(a) (directing that the BLM “shall manage the public lands under principles of multiple use and sustained yield, in accordance with land use plans developed . . . under section 1712 of this title . . .”); *see also id.* § 1712(c)(1) (directing that the BLM “use and observe the principles of multiple use and sustained yield” in developing land use plans); *id.* § 1701(a)(7) (articulating the federal policy that “goals and objectives be established by law as guidelines for public land use planning” and that “management be on the basis of multiple use and sustained yield unless otherwise specified by law”); *id.* § 1701(a)(8) (directing that “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.”).

<sup>109</sup> *Id.* § 1702(c) (defining “multiple use”).

<sup>110</sup> *Id.* Other phrases in the statute echo this theme. *See id.* (“making the most judicious use of the land for some or all of these resources . . . to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions”); *id.* (“‘multiple use’ means the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people . . . that takes into account the long-term needs of future generations for renewable and nonrenewable resources . . . with consideration being 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”); *id.* § 1712(c)(5) (land use plans shall “consider present and potential uses of public lands”); *id.* § 1712(c)(7) (land use plans shall “weigh long-term benefits to the public against short-term benefits”).

<sup>111</sup> *Id.* § 1702(h).

<sup>112</sup> *Id.* § 1702(c).

account the long-term needs of future generations for renewable and nonrenewable resources.”<sup>113</sup> The reference to “maintenance in perpetuity” of renewable resources in the definition of “sustained yield” further indicates congressional intent to impose a multigenerational investment horizon on the BLM.<sup>114</sup>

Finally, Congress identified discrete ecological values that should be managed without “permanent impairment” in the multiple use balance, including watersheds, rangeland, forests, fish and wildlife, air, and the atmosphere.<sup>115</sup> The statute’s introductory declaration of policy lists several resources including “the quality of . . . ecological, environmental, air and atmospheric, water resource, and archeological values” as well as preservation of “certain public lands in their natural condition,” in order to provide “food and habitat for fish and wildlife and domestic animals,” and “outdoor recreation and human occupancy and use.”<sup>116</sup> By using the introductory declaration of policy to descriptively list ecological values that should be protected, Congress expressed an intent as to what must not be permanently impaired or subject to unnecessary or undue degradation in the balance of multiple use.<sup>117</sup>

Notably, the BLM acts as a steward over “air and atmospheric” values. The inclusion of atmosphere as a resource is specific and unambiguous. “The preeminent canon of statutory interpretation requires us to presume that the legislature says in a statute what it means and means in a statute what it says there.”<sup>118</sup> History indicates that Congress understood the risks and challenges of anthropogenic climate change when it listed air and atmospheric values as one of the values that the BLM must protect. Nine years before FLPMA was passed, climate change had already been identified as an environmental risk.<sup>119</sup> Reviewing the history of climate change awareness, the Ninth Circuit summarized that “[a]s early as 1965, the Johnson Administration cautioned that fossil fuel emissions threatened significant changes to climate, global temperatures, sea levels,

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<sup>113</sup> *Id.*

<sup>114</sup> *Id.* § 1702(h).

<sup>115</sup> *Id.* § 1701(a)(8).

<sup>116</sup> *Id.*

<sup>117</sup> NORMAN J. SINGER, STATUTES AND STATUTORY CONSTRUCTION § 47:8, at 237–38 (6th ed. 2000) (“The legislative purpose set forth in the purview of an enactment is assumed to express the legislative policy, and only those subjects expressly exempted by the proviso should be freed from the operation of the statute.”); *id.* § 46:05, at 177 (“Where there is inescapable conflict between general and specific terms or provisions of a statute, the specific will prevail.”).

<sup>118</sup> *Amalgamated Sugar Co. LLC v. Vilsack*, 563 F.3d 822, 829 (9th Cir. 2009) (quoting *McDonald v. Sun Oil Co.*, 548 F.3d 774, 780 (9th Cir. 2008)).

<sup>119</sup> *Juliana v. United States*, 947 F.3d 1159, 1166 (9th Cir. 2020).

and other stratospheric properties.”<sup>120</sup> For example, a White House Report published on November 5, 1965 detailed environmental challenges facing the nation, including “atmospheric carbon dioxide.”<sup>121</sup> The report recognized that GHG emissions were altering the composition of the atmosphere. “Within a few short centuries, we are returning to the air a significant part of the carbon that was slowly extracted by plants and buried in the sediments during half a billion years . . . The part that remains in the atmosphere may have a significant effect on the climate.”<sup>122</sup> Thus, Congress was on notice that climate change was a risky, negative byproduct of fossil fuel development when it instructed the BLM to manage public lands “in a manner that will protect the quality of the . . . air and atmospheric . . . values,” and it intended the BLM to manage accordingly.<sup>123</sup>

More importantly, Congress understood that there would be multiple unforeseen challenges in striking the right balance of multiple uses. FLPMA’s broad language grants the BLM regulatory flexibility to respond to new scientific evidence and changing societal needs. As the U.S. Supreme Court recognized when interpreting the Clean Air Act, even if Congress “might not have appreciated the possibility that burning fossil fuels could lead to global warming, they did understand that without regulatory flexibility, changing circumstances and scientific developments would soon render [the Act] obsolete.”<sup>124</sup> This is no less true for FLPMA, where broad language similarly “reflects an intentional effort to confer the flexibility necessary to forestall such obsolescence.”<sup>125</sup> Climate models provide an unprecedented peek into the world that future generations must face, eliminating significant doubt as to the consequences of continuing our current emissions trajectory.<sup>126</sup> The BLM’s regulatory authority over our nation’s hydrocarbon resources is governed by the standard of care set forth in FLPMA. A deliberate strategy to mitigate the risks of increased GHG emissions caused by hydrocarbon production would be consistent with FLPMA’s standard of care, multigenerational investment horizon, and instruction to protect ecological values, including the atmosphere.<sup>127</sup>

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<sup>120</sup> *Id.*

<sup>121</sup> ENV’T POLLUTION PANEL PRESIDENT’S SCI. ADVISORY COMM., THE WHITE HOUSE, RESTORING THE QUALITY OF OUR ENVIRONMENT (1965).

<sup>122</sup> Roger Revelle et al., *Atmospheric Carbon Dioxide*, in RESTORING THE QUALITY OF OUR ENVIRONMENT, app. Y4, 111, 113 (1965).

<sup>123</sup> 43 U.S.C. § 1701(a)(8).

<sup>124</sup> *Massachusetts v. EPA*, 549 U.S. 497, 532 (2007).

<sup>125</sup> *Id.*

<sup>126</sup> NSMIP, A SECURITY THREAT ASSESSMENT OF GLOBAL CLIMATE CHANGE, *supra* note 8, at 13.

<sup>127</sup> *Id.*



*B. The BLM has already publicly acknowledged that increasing GHG emissions will result in permanent impairment to ecological systems, including those charged to its care.*

In January 2016, the BLM undertook an investigation of the federal coal leasing program, culminating in a scoping report that was issued in January 2017.<sup>128</sup> The report concluded that modernization of the federal coal program was warranted due, in part, to “the coal program’s impact on the challenge of climate change.”<sup>129</sup> The scoping report referred to scientific assessments that had been completed after the EPA’s Endangerment Finding and stated:

The new assessments also confirm and further strengthen the conclusion that greenhouse gases endanger public welfare, and emphasize the urgency of reducing greenhouse gas emissions due to their projections that show greenhouse gas concentrations climbing to ever-increasing levels in the absence of mitigation.<sup>130</sup>

The BLM emphasized one study in particular, published by the National Research Council, concluding that without emission reductions, the atmospheric composition “may be approaching a critical climate threshold beyond which rapid and potentially permanent—at least on a human timescale—changes not anticipated by climate models . . . may occur.”<sup>131</sup> The BLM also emphasized a second study published by the National Research Council regarding the risks of abrupt impacts to society and ecosystems if physical thresholds within the earth’s system, including thresholds in atmospheric composition, are crossed.<sup>132</sup> One of the abrupt impacts emphasized by the BLM was the threat of “rapid state changes in ecosystems and species extinctions,” which the BLM characterized as examples of irreversible impacts “that are expected to be exacerbated by climate change.”<sup>133</sup> Relying upon these and other studies, the BLM concluded that “reducing emissions of greenhouse gases across the globe is necessary in order to avoid the worst impacts of climate change and

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<sup>128</sup> *Id.*

<sup>129</sup> *Id.* at ES-4.

<sup>130</sup> *Id.* at 5-50.

<sup>131</sup> *Id.* (quoting NAT’L RSCH. COUNCIL, UNDERSTANDING EARTH’S DEEP PAST: LESSONS FOR OUR CLIMATE FUTURE 2 (2011), <https://www.nap.edu/catalog/13111/understanding-earth’s-deep-past-lessons-for-our-climate-future>).

<sup>132</sup> *Id.* at 5-50–5-51 (discussing NAT’L RSCH. COUNCIL, ABRUPT IMPACTS OF CLIMATE CHANGE: ANTICIPATING SURPRISES (2013), <http://nap.edu/18373>).

<sup>133</sup> FEDERAL COAL PROGRAM PEIS SCOPING REPORT, *supra* note 98, at 5-51.

underscore the urgency of reducing emissions now.”<sup>134</sup> As discussed in Section II.A., in the three years since that report was released, scientific consensus has only become stronger and the situation more urgent.

The BLM did not use the words “permanent impairment” when discussing the risk of crossing thresholds and exacerbating species extinction in the scoping report, but the connection is evident. Rapid ecological state changes and widespread species extinctions are irreversible events that will cause permanent impairment to ecological values entrusted to the BLM’s care. For example, “range, timber . . . watershed, wildlife and fish, and natural, scenic, scientific, and historical values”<sup>135</sup> will all be affected by “rapid state changes in ecosystems and species extinctions.”<sup>136</sup>

Because crossing a critical climate threshold puts resources under the BLM’s care at risk of permanent impairment, permitting decisions that increase the risk of crossing a critical climate threshold are inconsistent with the statutory definition of multiple use and sustained yield. It does not matter that the BLM discussed the risks of “crossing a critical climate threshold” in the context of coal mining, rather than oil and gas development.<sup>137</sup> The same facts apply to any fossil fuel. Continuing to permit expanded development of fossil fuels exacerbates the risk of crossing a critical climate threshold and causing permanent impairment to the quality of the environment and the productivity of the land managed by the BLM, contrary to the statutory standard of care set forth in FLPMA.

Although the BLM has broad discretion when making decisions under the Mineral Leasing Act, its discretion “remains constrained” by the statutory priorities set forth in FLPMA.<sup>138</sup> The BLM has already acknowledged the scientific urgency of reducing GHG emissions, and its permitting decisions should comport with that conclusion and demonstrate a rational connection between the facts found and the decision made. Like every agency, the BLM is bound by the fundamental requirement of administrative law that agencies engage in “reasoned decisionmaking” and act within the bounds of their statutory duties.<sup>139</sup> Final agency actions that

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<sup>134</sup> *Id.* at 5-52.

<sup>135</sup> 43 U.S.C. § 1702(c).

<sup>136</sup> FEDERAL COAL PROGRAM PEIS SCOPING REPORT, *supra* note 98, at 5-51.

<sup>137</sup> *Id.*

<sup>138</sup> *Citizens for a Clean Environment v. U.S. Dep’t of Interior*, 384 F. Supp. 3d 1264, 1271 (D. Mont. 2019) (although the BLM enjoys broad discretion to make mineral leasing decisions on federal lands, it “remains constrained, however, by the Federal Lands Policy Act and the Mineral Leasing Act.”).

<sup>139</sup> *Dep’t of Homeland Sec. v. Regents of the Univ. of Cal.*, 140 S. Ct. 1891, 1905 (2020) (noting that the procedural requirements of administrative law establish the

do not meet the standards of reasoned decisionmaking may be challenged under the Administrative Procedure Act as arbitrary and capricious.<sup>140</sup> As the Supreme Court recently pointed out, “the Government should turn square corners in dealing with the people.”<sup>141</sup> One of those square corners is the requirement to “examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made.”<sup>142</sup> The BLM’s management and permitting decisions must satisfy this standard. Where the relevant data uniformly indicates that increasing GHG emissions will exacerbate climate change and cause permanent impairment to resources entrusted to the BLM, there is no satisfactory explanation for ignoring that data in the BLM’s management or permitting decisions.

Courts have shown an increasing willingness to require agencies to grapple with the realities of climate change in fulfilling their statutory duties. For example, although the National Highway Transportation and Safety Administration (“NHTSA”) has enjoyed broad discretion in establishing fuel efficiency standards,<sup>143</sup> it met the boundaries of that discretion in 2007 when it failed to incorporate climate change into its analysis in setting fuel efficiency standards.<sup>144</sup> In *Center for Biological Diversity v. NHTSA*, the Ninth Circuit found that the fuel economy rule issued by NHTSA was arbitrary and capricious because it failed to prioritize energy conservation, which was Congress’ purpose in enacting the Energy Policy and Conservation Act (“EPCA”).<sup>145</sup> In defending the rule—which prioritized other factors like market dynamics and cost of implementation over energy conservation—NHTSA relied upon previous court decisions that deferred to NHTSA’s discretion to balance priorities in setting fuel efficiency standards.<sup>146</sup> The court distinguished those cases. “[T]he persuasiveness of the analysis in [previous cases] is limited by the fact that they were decided two decades ago, when scientific knowledge

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mechanism “by which federal agencies are accountable to the public and their actions subject to review”).

<sup>140</sup> 5 U.S.C. § 706(2)(A).

<sup>141</sup> *Regents of the Univ. of Cal.*, 140 S. Ct. at 1909.

<sup>142</sup> *Motor Vehicles Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

<sup>143</sup> *Center for Auto Safety v. NHTSA*, 793 F.2d 1322, 1338 (D.C. Cir. 1985) (finding that NHTSA appropriately balanced consumer demand with the statutory policy of fuel conservation in light of the broad guidelines established by Congress in EPCA); *Pub. Citizen v. NHTSA*, 848 F.2d 256 (D.C. Cir. 1988) (consideration of economic hardship was within agency discretion).

<sup>144</sup> *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172 (9th Cir. 2008).

<sup>145</sup> *Id.* at 1181–82, 1197.

<sup>146</sup> *Id.* at 1195–97.

of climate change and its causes were not as advanced as they are today.”<sup>147</sup> Citing climate change concerns, the court pointed out that, “[t]he need of the nation to conserve energy is even more pressing today than it was at the time of EPCA’s enactment . . . What was a reasonable balancing of competing statutory priorities twenty years ago may not be a reasonable balancing of those priorities today.”<sup>148</sup> Because NHTSA failed to prioritize energy conservation, which was “the fundamental purpose of the statute,”<sup>149</sup> the court emphasized, “[a]n agency may not ignore factors Congress explicitly required to be taken into account.”<sup>150</sup>

The same legal standard and logic applied by the Ninth Circuit in *Center for Biological Diversity v. NHTSA* applies to BLM permitting decisions. What may have been a reasonable balancing of multiple use priorities twenty years ago may not be a reasonable balancing of those priorities today. Climate models uniformly indicate that the long-term, cumulative impacts of increasing fossil fuel development will permanently impair resources that Congress instructed the BLM to judiciously manage.<sup>151</sup> The BLM has acknowledged that those models and other studies “underscore the urgency of reducing emissions now.”<sup>152</sup> The incremental nature of individual permitting decisions does not shield the BLM from its statutory duty to manage on a multigenerational horizon, avoid permanent impairment, and prevent unnecessary or undue degradation to the resources under its care.

A fundamental purpose of FLPMA is to identify a standard of care and impose a multigenerational investment horizon on the BLM’s management decisions. Permitting decisions that allow an unmitigated increase in GHG emissions exacerbate climate change and arbitrarily and capriciously ignore statutory factors, like the duty to avoid permanent impairment of atmospheric resource values. Accordingly, without incorporating climate science into its land management decisions, the BLM cannot fulfill its statutory duties under the Federal Land Management Policy Act or its legal responsibility to avoid arbitrary and capricious decisionmaking under the Administrative Procedure Act.

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<sup>147</sup> *Id.* at 1198.

<sup>148</sup> *Id.* at 1197–98.

<sup>149</sup> *Id.* at 1205–06.

<sup>150</sup> *Id.* (quoting *Earth Island Inst. v. Hogarth*, 494 F. 3d 757, 765 (9th Cir. 2007)).

<sup>151</sup> See e.g., NCA4 VOL. 1, CLIMATE SCIENCE SPECIAL REPORT, *supra* note 18.

<sup>152</sup> FEDERAL COAL PROGRAM PEIS SCOPING REPORT, *supra* note 98, at 5-52; see also *id.* at ES-4 (concluding that the federal coal program must be modernized in part to address the coal program’s impact on the challenge of climate change).

*C. Courts do not view addressing climate change as a policy preference.*

Recent court decisions reveal a judicial trend toward recognizing that responding to climate science is not a policy preference. A comprehensive and insightful review of climate related cases between 2015 and 2020 published by the nonpartisan Environmental Law Institute reveals that “vast judicial agreement exists on the causes, extent, urgency, and consequences of climate change.”<sup>153</sup> This observation “holds true across U.S. federal and state courts, across different types of proceedings, and across jurisdictions,” including international jurisdictions.<sup>154</sup> The report takes care to point out that all parties, including government agencies like the BLM, appeared to agree on basic climate science even if they disagreed on the legal implications.<sup>155</sup>

Several courts have reminded agencies that facts about the risks of global warming survive changes of administration. “[E]ven when reversing policy after an election, an agency may not simply discard prior factual findings without a reasoned explanation.”<sup>156</sup> For example, in *Indigenous Environmental Network v. United States Department of State*, a federal district court reviewed the Trump administration’s reversal of a decision to deny approval for the Keystone XL Pipeline.<sup>157</sup> The history is as follows. In 2015, the Obama administration declined to issue a cross border permit for the pipeline.<sup>158</sup> The denial was based on the risk of exacerbating climate change, as set forth in the 2015 Record of Decision (“2015 ROD”).<sup>159</sup> As justification for the denial, the 2015 ROD referred to the necessity of reducing global carbon emissions in order to keep warming below 2° C. “This is a critical time for action on climate change. The science is clear and widely accepted, including among foreign governments, that climate change is occurring now, that human activity is the dominant cause, and that climate change impacts are already being felt

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<sup>153</sup> BANDA, *supra* note 14, at vi.

<sup>154</sup> *Id.* at 73–74.

<sup>155</sup> *Id.*

<sup>156</sup> *Indigenous Env'tl. Network v. U.S. Dep't of State*, 347 F. Supp. 3d 561 (D. Mont. 2018), *rev'd as moot*, No. 18-36068 (9th Cir. June 6, 2019).

<sup>157</sup> *Id.* The Record of Decision resulted in a National Interest Determination and a Presidential Permit to allow TransCanada Keystone Pipeline, LP to construct a cross-border oil pipeline known as Keystone XL, which would carry tar sands oil from the interior of Alberta to Steele City, Nebraska.

<sup>158</sup> U.S. DEP'T OF STATE, RECORD OF DECISION AND NATIONAL INTEREST DETERMINATION: TRANSCANADA KEYSTONE PIPELINE, L.P. APPLICATION FOR PRESIDENTIAL PERMIT (2015).

<sup>159</sup> *Id.*

around the world.”<sup>160</sup> The 2015 ROD acknowledged that approval of the pipeline would be understood as a decision to facilitate GHG-intensive crude imports, undermining the transition to low-carbon economies. “Therefore, a decision to approve this proposed project would undermine U.S. objectives . . . which identified climate change and the reduction of global emissions as a national security priority.”<sup>161</sup> In reversing course, the Trump administration simply removed the paragraphs referring to climate change, and characterized the change as a “mere policy shift.”<sup>162</sup> The district court rejected the argument that a policy shift could not be found arbitrary and capricious.<sup>163</sup> “An agency cannot simply disregard contrary or inconvenient factual determinations that it made in the past, any more than it can ignore inconvenient facts when it writes on a blank slate.”<sup>164</sup> A conclusory analysis that climate change impacts were inconsequential did not rise to a reasoned explanation, and without a reasoned justification for disregarding the urgency of climate change, the agency decision was arbitrary and capricious.<sup>165</sup>

Other courts have reached similar conclusions when agencies have ignored earlier factual findings related to climate change. Recently, in the context of climate change, a federal court for the Northern District of California held that the arbitrary and capricious standard “prohibits [an agency] from disregarding available scientific evidence that is some way better than the evidence [it] relies on.”<sup>166</sup> That case, *California v. Bernhardt*, considered the BLM’s justification for replacing a regulatory scheme designed to minimize methane waste in oil and gas production (the 2016 Waste Prevention Rule) with a less stringent set of regulations (the 2018 Recission). The BLM’s justification for the 2016 Waste Prevention Rule relied heavily on the benefits of reducing GHG emissions.<sup>167</sup> The BLM’s analysis included a benefit-cost assessment that considered the

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<sup>160</sup> *Id.* at 30.

<sup>161</sup> *Id.* at 28.

<sup>162</sup> U.S. DEP’T OF STATE, RECORD OF DECISION AND NATIONAL INTEREST DETERMINATION: TRANS CANADA KEYSTONE PIPELINE, L.P. APPLICATION FOR PRESIDENTIAL PERMIT (2017).

<sup>163</sup> *Indigenous Envtl. Network v. U.S. Dep’t of State*, 347 F. Supp. 3d 561, 583 (D. Mont. 2018), *rev’d as moot*, No. 18-36068 (9th Cir. June 6, 2019).

<sup>164</sup> *Id.* at 584.

<sup>165</sup> *Id.*

<sup>166</sup> *California v. Bernhardt*, 472 F. Supp. 3d 573, 610 (N.D. Cal. 2020) (alterations in original) (internal quotations and citations omitted).

<sup>167</sup> *Id.* at 585 (recounting the BLM’s original estimates that the 2016 Waste Prevention Rule “would generate up to \$14 million in additional royalties, as well as annually avoid an estimated 175,000-180,000 tons of methane emissions and reduce emissions of both volatile organic compounds by 250,000 to 267,000 tons”).

Social Cost of Carbon (“SCC”).<sup>168</sup> As the court summarized, “[t]his approach was developed over several years through robust scientific and peer-reviewed analyses and public processes, and represents the best available science on this issue.”<sup>169</sup> When the BLM replaced the 2016 Waste Prevention Rule with a rule designed to be less burdensome on industry (“2018 Recission”), it did not use the SCC metric.<sup>170</sup> Instead, it developed an “interim” metric that excluded the global consequences of climate change.<sup>171</sup> The BLM’s interim metric underestimated the domestic effects of climate change and excluded the global effects of climate change—for example disregarding the effects on eight million citizens living abroad—when considering the consequences of its new rule relaxing methane emission standards for oil and gas development on federal land.<sup>172</sup> In finding this approach arbitrary and capricious, the court summarized, “[a]n agency simply cannot construct a model that confirms a preordained outcome while ignoring a model that reflects the best science available.”<sup>173</sup> Consequently, the court found that the BLM’s decision to ignore climate science “‘fail[s] to consider . . . important aspect[s] of the problem’ and ‘runs counter to the evidence before the agency.’”<sup>174</sup>

Similarly, in *Defenders of Wildlife v. Jewell*, a federal district court reviewed a Fish and Wildlife Service decision reversing course on a decision to list the wolverine as endangered due to habitat degradation caused by climate change.<sup>175</sup> The court carefully reviewed the

<sup>168</sup> *Id.* at 609 (explaining that the SCC metric was developed by the Interagency Working Group to provide “a single, harmonized value for greenhouse gas emissions for federal agencies to use in their regulatory impact analyses”); *id.* (summarizing that the metric estimates the present value of damages caused by each additional ton of greenhouse gas emitted at a point in time—or the benefit of avoided GHG emissions).

<sup>169</sup> *Id.*

<sup>170</sup> Waste Prevention, Production Subject to Royalties, and Resource Conservation; Rescission or Revision of Certain Requirements, 83 Fed. Reg. 49,184 (Sept. 28, 2018) (to be codified at 43 C.F.R. pts. 3160 & 3170).

<sup>171</sup> *Bernhardt*, 472 F. Supp. 3d at 609.

<sup>172</sup> *Id.* at 612.

<sup>173</sup> *Id.* at 611 (The court’s analysis further emphasized that political machinations cannot erase facts. Recognizing that Executive Order 13783 issued by the Trump administration had withdrawn the relevant technical support documents for the SCC metric, the court pointed out that the Executive Order “did not and could not erase the scientific and economic facts that formed the foundation for that estimate . . . In other words, the President did not alter by fiat what constitutes the best available science.”).

<sup>174</sup> *Id.* at 613 (alterations in original) (quoting *Motor Vehicle Mfrs. Ass’n v. State Farm*, 463 U.S. 29, 43 (1983)).

<sup>175</sup> *Defenders of Wildlife v. Jewell*, 176 F. Supp. 3d 975 (D. Mont. 2016) (the court also rejected FWS efforts to characterize the consequences of climate change as uncertain due to modeling challenges and a lack of information about the wolverine. “[S]uch

administrative record and concluded that the justifications offered by the agency failed to provide a reasoned justification for the course reversal.<sup>176</sup>

[T]he Service's stance here borders on the absurd—if evidence shows that wolverines need snow for denning purposes, and the best available science projects a loss of snow as a result of climate change where and when the wolverines den, then what sense does it make to deny that climate change is a threat to the wolverine simply because research has yet to prove exactly *why* wolverines need deep snow for denning.<sup>177</sup>

Because the decision ran counter to the evidence before the service, it too was reversed as arbitrary and capricious.<sup>178</sup>

The court took a similar stance in *California v. EPA*, when reviewing a challenge to the EPA's announcement that it would reconsider GHG emission standards adopted in 2012 for model years 2022 to 2025 motor vehicles.<sup>179</sup> The extensive rule-making record supporting the 2012 standards estimated that they would save four billion barrels of oil, reduce GHG emissions by two billion metric tons, and generate net lifetime fuel savings of \$3,400–\$5,000 per vehicle sold.<sup>180</sup> But after the change in presidential administrations, “the EPA changed lanes” and announced that it would reconsider the 2012 standard.<sup>181</sup> Although the court concluded that it lacked jurisdiction because no “final action” had occurred yet, it took an opportunity to counsel the EPA: “If EPA's rulemaking results in changes to the existing 2012 standards, it will be required to provide a reasoned explanation and cannot ignore prior factual findings and the supporting record evidence contradicting the new policy.”<sup>182</sup>

In *Citizens for Clean Energy v. United States Department of Interior*, a federal district court rejected the BLM's characterization of coal leasing

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conclusory treatment based on a dearth of information is impermissible under the APA . . . The service must rationally explain why the uncertainty regarding a particular issue counsels in favor of one conclusion rather than the opposite conclusion.” (internal quotation marks and alterations omitted).

<sup>176</sup> See, e.g., *Jewell*, 176 F. Supp. 3d at 999 (“[W]hy did the Service make the decision it did in the Proposed Rule, based on what it determined to be the best available science, and reject that decision eighteen months later? Based on the record, the Court suspects that a possible answer to this question can be found in the immense political pressure brought to bear on the issue . . . The listing decision in this case involves climate science, and climate science evokes strong reactions.”).

<sup>177</sup> *Id.* at 1005.

<sup>178</sup> *Id.* at 1003.

<sup>179</sup> *California v. EPA*, 940 F.3d 1342, 1345 (D.C. Cir. 2019).

<sup>180</sup> *Id.* at 1346.

<sup>181</sup> *Id.* at 1348.

<sup>182</sup> *Id.* at 1353.



decisions as “mere policy shifts.”<sup>183</sup> In that case, the Trump administration had issued an order reversing a 2016 moratorium on new coal leasing and directed the BLM to expeditiously process coal lease applications and modifications based on regulations and guidance in place prior to the moratorium.<sup>184</sup> One justification supporting the 2016 moratorium was to “avoid the risk of ‘locking in for decades the future development of large quantities of coal . . . ’” under the prior regulatory standards.<sup>185</sup> The BLM characterized the reversal as “a mere policy shift and return to the status quo.”<sup>186</sup> The court recognized the order as a major federal action with potentially significant environmental impacts, thus triggering the National Environmental Policy Act (“NEPA”).<sup>187</sup> Because expediting coal mining could have a significant effect on the environment, it was arbitrary and capricious to lift the moratorium without first evaluating the environmental impacts in accordance with NEPA.<sup>188</sup> Although the court declined to order the BLM to prepare an EIS as opposed to an Environmental Assessment (“EA”), the court reminded the BLM that determining significance requires a rational connection between the facts found and the decision made.<sup>189</sup> In light of all the available science, it is unlikely that any agency, no matter how creative, could gather a “convincing statement of reasons” to explain why continuing to issue coal leases without mitigating the risks of climate change would have an insignificant effect on the environment.

These cases demonstrate a judicial trend recognizing that climate change is a scientific fact, not a policy preference.<sup>190</sup> Although agencies

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<sup>183</sup> *Citizens for Clean Energy v. U.S. Dep’t of Interior*, 384 F. Supp. 3d 1264, 1281 (D. Mont. 2019).

<sup>184</sup> *Id.* at 1277. In February 2017, BLM possessed forty-four pending lease and lease modification applications. *Id.* at 1271. Coal from federal land already constituted over forty percent of U.S. coal production. *Id.* In 2014, the federal coal program was responsible for an estimated eleven percent of total U.S. GHG emissions. *Id.* at 1274. Processing new leases would expand production and increase GHG-related emissions. *Id.* at 1280.

<sup>185</sup> *Id.* at 1280.

<sup>186</sup> *Id.* at 1279.

<sup>187</sup> *Id.* (“The existence of a NEPA triggering event ‘depends on whether there is a new proposed major federal action.’ The threshold to trigger NEPA remains ‘relatively low.’ A NEPA triggering event merely requires that a plaintiff ‘raise substantial questions whether a project may have a significant effect on the environment.’”) (citations omitted).

<sup>188</sup> *Id.* at 1279, 1281.

<sup>189</sup> *Id.* at 1282 (“If Federal Defendants determine that an EIS would not be necessary, however, the Federal Defendants must supply a ‘convincing statement of reasons’ to explain why the Zinke Order’s impacts would be insignificant.” (quoting *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998)).

<sup>190</sup> *Indigenous Env’tl. Network v. U.S. Dep’t of State*, 347 F. Supp. 3d 561, 584 (D. Mont. 2018), *rev’d as moot*, No. 18-36068 (9th Cir. June 6, 2019) (“An agency cannot

have broad discretion in *how* to respond to climate change, decisions that ignore climate change are increasingly recognized as arbitrary and capricious. Looking ahead, this judicial trend has implications for the BLM. Having already acknowledged the scientific consensus that increasing GHG emissions will exacerbate climate change and increase the risk of crossing critical climate thresholds, the BLM “cannot simply disregard contrary or inconvenient factual determinations that it made in the past.”<sup>191</sup> A conclusory analysis that the climate change impacts of a single permitting decision are inconsequential does not rise to a reasoned explanation where the BLM has permitting authority over twenty-four percent of the nation’s GHG emissions.<sup>192</sup> Focusing solely on the individual impacts of a permitting decision without considering the BLM’s national authority over GHG emissions fails to consider an important aspect of the problem and runs counter to the evidence before the agency.<sup>193</sup> With roughly 250 million acres of surface land under its care, a statutory duty to protect environmental attributes that will be affected by climate change (like water resources, fish and wildlife habitat, and atmospheric values), permitting authority over twenty-four percent of the nation’s GHG emissions, and the ability to increase or decrease future emissions, the BLM simply cannot continue to ignore climate change in its permitting decisions without violating the management priorities set forth in FLPMA and the reasoned decision-making standard set forth in the APA.

*D. Past is not prologue. Agencies must plan and act based on foreseeable future conditions.*

“[T]he assumption that current and future climatic conditions will resemble the recent past is no longer valid.”<sup>194</sup> This statement, made in the Fourth National Assessment on Climate Change, identifies a challenge for

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simply disregard contrary or inconvenient factual determinations that it made in the past, any more than it can ignore inconvenient facts when it writes on a blank slate.”); *California v. Bernhardt*, Case No. 4:18-cv-05712-YGR, 2020 U.S. Dist. LEXIS 128961, at \*77 (N.D. Cal. July 15, 2020) (alterations in original) (internal quotations and citations omitted) (rejecting argument that an executive order relieved the BLM’s duty to consider the social costs of climate change because “the President did not alter by fiat what constitutes the best available science”).

<sup>191</sup> *Indigenous Envtl. Network*, 347 F. Supp. 3d at 584.

<sup>192</sup> See *supra* Section II.B.

<sup>193</sup> *Bernhardt*, Case No. 4:18-cv-05712-YGR, 2020 U.S. Dist. LEXIS 128961, at \*81 (alterations in original) (quoting *Motor Vehicle Mfrs. Ass’n v. State Farm*, 463 U.S. 29, 43 (1983)).

<sup>194</sup> NCA4 VOL. 2, CLIMATE SCIENCE REPORT IN BRIEF, *supra* note 18, at 26.

agencies who must make management decisions that project into the future. Because climate change is creating a “new normal” with altered climatic patterns, projections that are based on continuation of existing conditions may not meet this burden.<sup>195</sup>

The BLM must engage in reasoned decisionmaking. As the Supreme Court articulated almost forty years ago, an agency decision is arbitrary and capricious “if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.”<sup>196</sup> As a practical matter, the “best available science” is critical to understanding “important aspect[s] of the problem” and part of the “evidence before the agency.” Agency decisions that “run counter to the evidence before the agency” or “entirely fail to consider an important aspect of the problem” do not meet the reasoned decisionmaking standard required by the APA and elaborated upon by the Supreme Court.

In the context of climate change, scientific consensus uniformly indicates that future conditions will diverge from the past. Consistent with the requirement that agencies engage in reasoned decisionmaking, courts are becoming increasingly rigorous with the requirement that agencies consider forecasts and climate models to meaningfully discuss reasonably foreseeable conditions in light of climate change. For example, in *AquAlliance v. U.S. Bureau of Reclamation*, the Bureau of Reclamation relied upon historical data from 1922–2003 to anticipate water supply for a ten-year water transfer program in California’s Central Valley.<sup>197</sup> The court rejected this approach, holding that “[t]he past century is no longer a reasonable guide to the future for water management.”<sup>198</sup> Climate change models indicated a sixteen percent reduction in snow pack by

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<sup>195</sup> This has prompted several commentators to make observations about the death of stationarity. See, e.g., Robin Kundis Craig, “Stationarity is Dead”- *Long Live Transformation: Five Principles for Climate Change Adaptation Law*, 35 HARV. ENVTL. L. REV. 9, 14–15 (2010); Mark Squillace, *Rethinking Public Land Use Planning*, 43 HARV. ENVTL. L. REV. 415, 424, 424 n.37 (2019) (“‘Stationarity’ is the idea that differences in an observed natural phenomenon occur within a fixed or constant range over time”); P. C. D. Milly et al., *Stationarity is Dead: Whither Water Management?*, 319 SCI. 573, 573–74 (2008); see also IPCC 1.5°C Special Report, Summary for Policy Makers, *supra* note 6, at 5, ¶ A.3.1 (“Impacts on natural and human systems from global warming have already been observed (high confidence). Many land and ocean ecosystems and some of the services they provide have already changed due to global warming (high confidence).”).

<sup>196</sup> *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Ins.*, 463 U.S. 29, 43 (1983).

<sup>197</sup> *AquAlliance v. U.S. Bureau of Reclamation*, 287 F. Supp. 3d 969, 1028 (E.D. Calif. 2018).

<sup>198</sup> *Id.* at 1028.

2035, which would alter the timing and amount of water available, and pose a significant challenge for water resource management.<sup>199</sup> The court held that the agency's backward-facing conclusion that the climate change impacts to the project would be insignificant was arbitrary and capricious because of its "failure to consider an important aspect of the problem," which was the strong scientific evidence of a much starker future.<sup>200</sup>

Similarly, two additional cases found agency reliance on historic environmental conditions contrary to the best available science and therefore arbitrary and capricious. In *Life Federation v. National Marine Fisheries Service*, the court found that the Service's assumption that current climatic conditions would continue into the future was contrary to the best available science and therefore arbitrary and capricious.<sup>201</sup> The National Marine Fisheries Service ("NMFS") had been called upon to issue a Biological Opinion on impacts to protected salmon species that were likely to result from the continued operation of the Federal Columbia River Power System. Noting the laundry list of challenges brought by climate change to the Pacific salmon population, the court found that NMFS's analysis "fail[ed] to properly analyze the effects of climate change."<sup>202</sup> Among other problems, the court noted that the agency "assumed recent climate conditions would remain the same" and "did not engage in any analysis" to assess whether the future effects of climate change would diminish the effectiveness of proposed mitigation measures.<sup>203</sup> Also, even though substantial scientific literature concluded that climate conditions in the ocean would worsen during the time frame of the analysis, the agency assumed that the recent historic condition of the ocean would "repeat itself."<sup>204</sup>

In *Wild Fish Conservancy v. Irving*, the federal court reached a near identical conclusion.<sup>205</sup> In that case, the agency (NMFS) analyzed whether operating a fish hatchery would threaten the existence of endangered fish spawning in the same watershed. The court found that "NMFS discusses the effects of climate change generally, and then proceeds with analysis on the apparent assumption that there will be no change to the hydrology

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<sup>199</sup> *Id.* at 1028–29.

<sup>200</sup> *Id.* at 1032 (internal quotations omitted).

<sup>201</sup> *Nat'l Wildlife Federation v. Nat'l Marine Fisheries Service*, 184 F. Supp. 3d 861, 874 (D. Or. 2016).

<sup>202</sup> *Id.*

<sup>203</sup> *Id.* at 918 ("NOAA Fisheries had information that climate change might well diminish or eliminate the effectiveness of some of the BiOp's habitat mitigation efforts, but does not appear to have analyzed these effects.").

<sup>204</sup> *Id.*

<sup>205</sup> *Wild Fish Conservancy v. Irving*, 221 F. Supp. 3d 1224, 1227–28 (E.D. Wa. 2016).

of Icicle Creek.”<sup>206</sup> The court went on to conclude that although the agency need not conduct a study or build a model, “its analysis must consider that the best available science . . . suggests that baseline historical flow averages may not be effective predictors of future flows.”<sup>207</sup> In other words, using the past as prologue is arbitrary and capricious where climate models forecast change.

Uncertainty inherent in predicting the future is not an excuse for agencies to avoid looking at climate projections. For example, the Arctic grayling is a freshwater fish that depends on cold water and adequate stream flow for survival.<sup>208</sup> In evaluating whether to list the Arctic grayling under the Endangered Species Act, the Fish and Wildlife Service (“FWS”) acknowledged a recent trend showing lower stream flows and warmer water temperatures, but relied instead upon limited data suggesting the possibility that the Arctic grayling could adapt by migrating to cold water refugia in one portion of the habitat.<sup>209</sup> In other words, the FWS declined to consider the cumulative effects of climate change on observed conditions. Although the available models indicated that “water temperatures will likely increase with climate change in the future” and “dewatering threats will be exacerbated” by climate change,<sup>210</sup> the FWS claimed that “uncertainty about how different temperature and precipitation scenarios could affect water availability make projecting possible synergistic effects of climate change on the Arctic grayling too speculative at this time.”<sup>211</sup> In *Center for Biological Diversity v. Zinke*, the court found this approach “unacceptable.”<sup>212</sup> “It is not enough for FWS to simply invoke ‘scientific uncertainty’ ” and rely on that uncertainty as a foil against scientific analysis.<sup>213</sup> Agencies must consider the evolving nature of climate science. FWS’s failure to grapple with climate change projections that would exacerbate current conditions was arbitrary and capricious.<sup>214</sup>

In contrast, agency decisions that incorporate climate change projections have been upheld, even where there is uncertainty about how

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<sup>206</sup> *Id.* at 1233–34.

<sup>207</sup> *Id.* at 1234.

<sup>208</sup> *Ctr. for Biological Diversity v. Zinke*, 900 F.3d 1053, 1072 (9th Cir. 2018).

<sup>209</sup> *Id.* at 1070.

<sup>210</sup> *Id.* at 1073.

<sup>211</sup> *Id.* at 1072.

<sup>212</sup> *Id.*

<sup>213</sup> *Id.* (quoting *Greater Yellowstone Coal. Inc. v. Servheen*, 665 F.3d 1015, 1028 (9th Cir. 2011)).

<sup>214</sup> *Id.* at 1073.

climate change may affect specific locations.<sup>215</sup> For example, in *Alaska Oil & Gas Ass'n v. Jewell*, the Ninth Circuit upheld the FWS designation of critical habitat for the polar bear against industry challenges that the designation was overly protective.<sup>216</sup> In addition to considering multiple climate models, the FWS also noted that “the observational record of current sea ice losses indicates that losses seem to be about [thirty] years ahead of the modeled values, which suggests a seasonally ice-free Arctic may come a lot sooner than expected.”<sup>217</sup> The FWS properly took this information into account when considering how climate change would likely affect ongoing changes to the polar bear habitat.<sup>218</sup>

Similarly, in *Colorado v. United States Fish and Wildlife Service*, the court upheld the agency’s reliance on forecasts regarding climate change and drought in considering whether to list the Gunnison sage-grouse as threatened under the Endangered Species Act.<sup>219</sup> The FWS observed that Colorado was warming more rapidly than other areas of the country, cited multiple studies on how hot and dry conditions affect the sage grouse, and listed other consequences of climate change including prolonged drought, fire, cheatgrass invasion, and insect reduction.<sup>220</sup> The court found that the FWS assessment of an increased threat from climate change was not arbitrary and capricious.<sup>221</sup>

In summary, where climate change forecasts predict degraded ecological functions, agencies cannot avoid considering future degradation by relying on historic data. Even though specific detail about the local effects of a projected trend may not be available, agency decisions that ignore forecasted trends and rely upon local historic data have been found arbitrary and capricious. For the BLM, this trend also has clear management implications. The BLM cannot rely solely upon the

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<sup>215</sup> See e.g., *Alaska Oil & Gas v. Jewell*, 815 F.3d 544, 550, 555 (9th Cir. 2016) (FWS designation of critical habitat for the polar bear upheld despite some lack of specificity regarding proof that the entire designated landscape contained required features of denning and barrier island habitats used by polar bears. “While the agency may not base its listings on speculation or surmise, where there is no superior data, occasional imperfections do not violate [the ESA].” (internal quotations omitted)).

<sup>216</sup> *Id.* at 559.

<sup>217</sup> *Id.*

<sup>218</sup> See also *Safari Club Int’l v. Salazar*, 709 F.3d 1, 14 (D.C. Cir. 2013) (upholding FWS listing of polar bear as endangered based on climate change models projecting loss of sea ice throughout the arctic and observations that actual sea ice loss outstripped pace of model forecasts “FWS understood and explained the models’ limitations and carefully explained why its limited reliance on the models was justified.”).

<sup>219</sup> *Colo. Dep’t of Nat. Res., v. U.S. Fish & Wildlife Serv.*, 362 F. Supp. 3d 951, 969 (D. Colo. 2018).

<sup>220</sup> *Id.* at 971.

<sup>221</sup> *Id.*

past: it must consider a future complicated by climate change. Where available climate models forecast climatic changes, the BLM must consider the implications of those changes, even if the exact parameter of the change is uncertain. Impacts that were historically insignificant may become significant when assessed in light of the environmental trends indicated by climate forecasts. With climate modeling pointing toward a hotter, dryer future, the need for BLM to incorporate the effects of climate change into its management decisions grows more pressing by the day. Consistent with the duty to avoid permanent impairment and prevent unnecessary or undue degradation, land-use decisions, including permitting decisions and mitigation strategies must adjust to reflect the foreseeable future conditions.

#### IV. NEPA'S STATUTORY MANDATE AND THE DEPARTMENT OF THE INTERIOR'S IMPLEMENTING REGULATIONS REQUIRE THE BLM TO TAKE A "HARD LOOK" AT THE ENVIRONMENTAL CONSEQUENCES OF A DECISION, INCLUDING CUMULATIVE EFFECTS OF CLIMATE CHANGE.

NEPA was enacted by Congress in recognition of "the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of . . . resource exploitation."<sup>222</sup> NEPA uses public disclosure to "fulfill the responsibilities of each generation as trustee of the environment for succeeding generations."<sup>223</sup> The Supreme Court summarized the statute's methodology as follows: "The sweeping policy goals announced in § 101 of NEPA are thus realized through a set of 'action-forcing' procedures that require that agencies take a 'hard look' at environmental consequences, and that provide for broad dissemination of relevant environmental information."<sup>224</sup> The twin aims of public disclosure and careful consideration of environmental impacts are "intended to help public officials make decisions that are based on understanding of environmental consequences and take actions that protect, restore, and enhance the environment."<sup>225</sup>

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<sup>222</sup> 42 U.S.C. § 4331(a).

<sup>223</sup> *Id.* § 4331(b)(1).

<sup>224</sup> *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

<sup>225</sup> 40 C.F.R. § 1500.1(c) (2020); *see* *Baltimore Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983) ("NEPA has twin aims. First, it places upon an agency

To ensure that the environmental consequences of an action are properly considered and disclosed, agencies must “utilize a systemic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking, which may have an impact on man’s environment.”<sup>226</sup> For every “major federal action” that may significantly affect “the quality of the human environment,” agencies must prepare a “detailed statement.”<sup>227</sup> The document’s level of detail depends on the likely significance of the environmental consequences.<sup>228</sup>

All “major Federal actions significantly affecting the quality of the human environment” require the agency to prepare an environmental impact statement (“EIS”).<sup>229</sup> An EIS “shall” include a description of (1) the environmental impact of the proposed action; (2) any adverse environmental effects that cannot be avoided; (3) alternatives to the proposed action; (4) the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity; and (5) any irreversible and irretrievable commitments of resources.<sup>230</sup> When the BLM prepares an EIS it must also include a discussion of alternatives including, “appropriate mitigation measures not already included in the proposed action or alternatives.”<sup>231</sup> The Record of Decision accompanying an EIS must “state whether all practicable means

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the obligation to consider every significant aspect of the environmental impact of a proposed action. Second, it ensures that the agency will inform the public that it has indeed considered environmental concerns in its decisionmaking process.”).

<sup>226</sup> 42 U.S.C. § 4332(A).

<sup>227</sup> *Id.* § 4332(C).

<sup>228</sup> The following discussion refers to CEQ NEPA regulations (40 C.F.R. §§1501.1 et seq.), which were amended on July 26, 2020. 85 Fed. Reg. 43304 (July 16, 2020). Where the discussion relies upon the earlier version of regulations, the citation is provided with (2019). Reference to the new regulations is indicated by specifying where the regulation will be codified in 2020. As much as possible, where the regulatory change has no meaningful effect on the discussion, reference to the new version of regulations is provided. This section also references Department of Interior NEPA regulations (43 C.F.R. §§ 46.10 et seq.), which have not been amended, but the 2019 version of the CFR for those regulations is the most current version to date.

<sup>229</sup> 42 U.S.C. § 4332 (C); 43 C.F.R. §§ 46.400–450 (2019).

<sup>230</sup> 42 U.S.C. § 4332(C).

<sup>231</sup> *Id.* § 4332(E); 43 C.F.R. §§ 46.415(a)(6), 46.415(b) (2019); *id.* §§ 46.420(b)–(d) (2019); *id.* § 46.425 (2019); *id.* § 46.130 (2019); *see also* Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. 43,304 (July 16, 2020) (requiring consideration of mitigation measures).



to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not.”<sup>232</sup>

For the past forty-two years, determining whether environmental impacts are “significant” has required an analysis of direct<sup>233</sup> and indirect<sup>234</sup> effects of the proposed action as well as the cumulative impacts<sup>235</sup> of the proposed action when considered in light of past, present, and reasonably foreseeable future actions.<sup>236</sup> These terms were defined by regulations published by the White House Council on Environmental Quality (“CEQ”), interpreted extensively by courts, and supplemented by individual agency regulations implementing NEPA. Similarly, significance has been measured in terms of the action’s context and intensity.<sup>237</sup> But, in July 2020, the CEQ revised those regulations, omitting references to direct, indirect, and cumulative effects.<sup>238</sup> As discussed in more detail below, these terms and the relevant case law remain applicable to the BLM’s duties under NEPA’s statutory requirements and BLM’s own regulations, notwithstanding the CEQ’s regulatory revisions.

If the effects of an agency action are not expected to be significant, an agency may comply with NEPA through the preparation of a less

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<sup>232</sup> Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. at 43,369.

<sup>233</sup> 40 C.F.R. § 1508.8(a) (2019) (Direct effects “are caused by the action and occur at the same time and place.”). The terms “impact” and “effect” are used interchangeably. *Id.*

<sup>234</sup> *Id.* (Indirect effects are “caused by the action and later in time or farther removed in the distance but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.”).

<sup>235</sup> *Id.* § 1508.7 (“Cumulative Impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertake such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”).

<sup>236</sup> *Id.* § 1508.8.

<sup>237</sup> *Id.* § 1508.27 (defining “significantly” as requiring considerations of both context and intensity); *id.* § 1508.7 (“Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”).

<sup>238</sup> Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. at 43,331. The amended regulations are the subject of ongoing litigation. *See Alaska Cmty. Action on Toxics v. Council on Env'tl. Quality*, 3-20-cv-5129 (N.D. Cal. 2020); *California v. Council on Env'tl. Quality*, 3-20-cv-06057 (N.D. Cal. 2020); *Env'tl. Justice Health All. v. Council on Env'tl. Quality*, 1-20-cv-06143 (S.D. N.Y. 2020); *Iowa Citizens for Env'tl. Improvement v. Council on Env'tl. Quality*, 1-20-cv-02715 (D. D.C. 2020); *Wild Virginia v. Council on Env'tl. Quality*, 3-20-cv-00045 (W.D. Va. 2020).

extensive Environmental Assessment (“EA”).<sup>239</sup> Like an EIS, an EA describes the reasonably foreseeable impacts associated with the proposed action, as well as an analysis of alternatives and the impacts resulting from implementation of each alternative.<sup>240</sup> If the EA indicates that the impacts of a proposed action are likely to be significant, the agency prepares an EIS that discusses those impacts in greater detail.<sup>241</sup> If the agency determines that the impacts fall below the significance threshold, the agency then prepares a finding of no significant impact on the environment (“FONSI”).<sup>242</sup>

Critically, an agency can—and often does—impose mitigation measures to reduce the degree of impacts below the significance threshold and thereby avoid EIS preparation. Such approval documents are commonly referred to as Mitigated FONSI.s.<sup>243</sup> As the CEQ explains, “[t]he appropriate mitigation measures can be imposed as enforceable permit conditions, or adopted as part of the agency final decision in the same manner mitigation measures can be adopted in the formal Record of Decision that is required in EIS cases.”<sup>244</sup>

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<sup>239</sup> 40 C.F.R. § 1508.9 (2019); 43 C.F.R. § 46.300 (2019); *see also* Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. at 43,360.

<sup>240</sup> 40 C.F.R. § 1508.9(b); 43 C.F.R. § 46.310; *see also* Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. at 43,360.

<sup>241</sup> 40 C.F.R. § 1508.9(a)(1); 43 C.F.R. § 46.300; *see also* Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. at 43,360.

<sup>242</sup> 40 C.F.R. § 1508.13; 43 C.F.R. § 46.325; *see also* Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. at 43,360.

<sup>243</sup> *See Spiller v. White*, 352 F.3d 235, 241 (5th Cir. 2003) (listing circuits that endorse the practice and explaining: “This situation occurs when an agency or involved third party agrees to employ certain mitigation measures that will lower the otherwise significant impacts of an activity on the environment to a level of insignificance. In this way, a FONSI could be issued for an activity that otherwise would require the preparation of a full-blown EIS.”); *see also* Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. at 43,361 (discussing mitigated FONSI.s).

<sup>244</sup> Forty Most Asked Questions Regarding CEQ’s National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026, 18,038 (Mar. 23, 1981); *see also* Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. at 43,361 (“If the agency finds no significant impacts based on mitigation, the mitigated finding of no significant impact shall state any enforceable mitigation requirements or commitments that will be undertaken to avoid significant impacts.”).

Agencies may also determine that a class of actions is eligible for a Categorical Exclusion (“CE”) because those actions are unlikely to have significant individual or cumulative environmental effects.<sup>245</sup> In “extraordinary circumstances,” actions otherwise covered by a CE may, however, require further analysis.<sup>246</sup> Thus, even an action that is normally categorically excluded from NEPA still “must be evaluated to determine whether it meets any of the extraordinary circumstances.”<sup>247</sup> BLM regulations provide a list of “extraordinary circumstances,” including actions that “have [a] direct relationship to other actions with individually insignificant but cumulatively significant environmental effects.”<sup>248</sup>

Recent case law applying NEPA in the context of climate change demonstrates that courts are increasingly willing to delve into the factual record to ensure that agencies have fulfilled NEPA’s statutory mandate by taking a “hard look” at climate change related environmental impacts. Additionally, despite a long tradition of deference to agencies’ expertise, recent decisions have not extended that deference to NEPA analyses that ignore the implications of the scientific consensus on climate change. As the Tenth Circuit summarized,

We do not owe the BLM any greater deference on the question at issue here because it does not involve ‘the frontiers of science.’ The BLM acknowledged that climate change is a scientifically verified reality. Climate science may be better in 2017 than in 2010 . . . but it is not a scientific frontier.<sup>249</sup>

The following four sections explore these trends after first discussing why the case law is still relevant to the BLM’s duty to comply with NEPA even if the Trump administration’s recent regulatory changes to CEQ regulations are upheld.

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<sup>245</sup> 40 C.F.R. § 1508.4 (2019); 43 C.F.R. § 46.205 (2019); *see also* Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. at 43,360.

<sup>246</sup> 43 C.F.R. § 46.205(a)(c) (2019).

<sup>247</sup> *Id.* § 46.205(c)(1).

<sup>248</sup> *Id.* § 46.215.

<sup>249</sup> *WildEarth Guardians v. U.S. BLM*, 870 F.3d 1222, 1236–37 (10th Cir. 2017) (referring to the United States Supreme Court standard for deference to agency decisions where decisions engage “scientific frontiers” that are part of “barely emergent knowledge and technology.”).

*A. Changes to the CEQ regulations do not amend Department of Interior NEPA regulations, which incorporate the original CEQ regulations.*

The CEQ issues regulations that implement NEPA and apply to all federal agencies.<sup>250</sup> In the summer of 2020, the CEQ finalized new regulations to implement NEPA, and these revised regulations include sweeping changes to NEPA practice. For example, the new regulations omit the term “cumulative impacts” and delete Section 1508.7, which defined that term.<sup>251</sup> These changes do not, however, eliminate the BLM’s duty to consider the cumulative effects in its management actions—including oil and gas permitting decisions—for at least two reasons. First, the duty to consider indirect and cumulative environmental effects arises out of NEPA’s statutory requirements, which cannot be eliminated or restricted by regulation. Second, BLM regulations still require an analysis of cumulative effects and those regulations remain in force despite the CEQ’s actions.

The duty to broadly consider the environmental effects of an action, including indirect and cumulative effects, arises out of NEPA’s statutory mandate, which cannot be amended away by regulation.<sup>252</sup> NEPA’s action forcing mandate is clear: EISs “shall” include a discussion of “*any* adverse environmental effects which cannot be avoided should the proposal be implemented.”<sup>253</sup> The term “any” is broad and necessarily includes indirect and cumulative effects. If Congress intended a narrow analysis, it would have used narrow language. But Congress chose instead to emphasize the comprehensive inquiry it intended by requiring agencies to “recognize the worldwide and long-range character of environmental problems.”<sup>254</sup> “Worldwide” and “long-range” problems are precisely the kinds of problems that rarely result from one individual action, but instead

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<sup>250</sup> See Exec. Order No. 11991, Relating to Protection and Enhancement of Environmental Quality (May 24, 1977) (directing federal agencies to comply with the CEQ’s NEPA regulations). Other agencies may promulgate their own NEPA regulations to address issues that are unique to their NEPA practice. The Department of the Interior’s NEPA regulations, for example, are found in 43 C.F.R. part 46.

<sup>251</sup> Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. 43,304, 43,331 (July 16, 2020) (to be codified at 40 C.F.R. pts. 1500, 1501, 1506, 1507, 1508, 1515, 1516, 1517, & 1518).

<sup>252</sup> See *In re Aiken County*, 725 F.3d 255, 260 (D.C. Cir. 2013) (“[F]ederal agencies may not ignore statutory mandates or prohibitions merely because of a policy disagreement with Congress.”); *California v. Bernhardt*, 472 F. Supp. 3d 573, 605 (N.D. Cal. 2020) (quoting *In re Aiken County*, 725 F.3d 255).

<sup>253</sup> 42 U.S.C. § 4332(2)(C)(ii) (emphasis added).

<sup>254</sup> *Id.* § 4332(2)(F).

reflect the combined effect of hundreds if not thousands of smaller actions. The Congressional Declaration of National Environmental Policy contained in NEPA, moreover, recognizes “the profound impact of man’s activity on the *interrelationship* of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances.”<sup>255</sup> “[P]opulation growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances” are not individual actions, but the product of multiple actions, and their environmental impacts can be assessed only by considering the cumulative impacts of multiple separate and distinct actions.

The breadth of the mandate set forth in NEPA is consistent with legislative discussions leading up to the Act’s passage. The Senate recognized that “important decisions concerning the use and the shape of man’s future environment continue to be made in small but steady increments which perpetuate rather than avoid the recognized mistakes of previous decades. Today it is clear that we cannot continue on this course.”<sup>256</sup> A summary of findings published as a part of the Senate hearing in April 1969 also described cumulative effects when it explained one of the problems that NEPA was intended to solve. “[A] major difficulty with the planning process: a series of separate decisions, each individually justifiable, can, in the aggregate lead to results which, had they been foreseen, would have been avoided.”<sup>257</sup> Congress was clear: agencies were not to lose sight of the forest by fixating on individual trees.

Such an interpretation is consistent with case law interpreting the Act. The CEQ first promulgated regulations guiding NEPA’s implementation in 1978, eight years after NEPA’s enactment. These regulations responded in part to a need to clarify the scope of analysis required under NEPA, and the CEQ’s regulations reflected the developing judicial consensus. Relying on the Act alone, and before the CEQ’s regulations were first issued, courts consistently found that NEPA’s statutory language mandates broad consideration of the potential effects, including cumulative effects, of a proposed federal action.<sup>258</sup> In 1975, for example,

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<sup>255</sup> *Id.* § 4331(a) (emphasis added).

<sup>256</sup> S. REP. NO. 91–296, at 5 (1969).

<sup>257</sup> *National Environmental Policy: Hearing on S. 1075, S. 237, and S. 1752 Before the S. Comm. on Interior and Insular Affairs*, 91st Cong. 183 (1969) (Summary of Findings and Recommendations, Resources and Man, Prepared by the Committee on Resources and Man, National Academy of Sciences- National Research Council).

<sup>258</sup> See generally *City of Rochester v. U.S. Postal Service*, 541 F.2d 967, 972 (2d Cir. 1976) (requiring analysis of the indirect and cumulative effects of postal facility construction and 1,400 employee transfers); *Nat. Res. Def. Council v. Callaway*, 524 F.2d

the Second Circuit found that the U.S. Navy erred in failing to consider the cumulative effect of four separate river and harbor dredging projects that together would have dumped more than five million cubic yards of contaminated spoils into Long Island Sound.<sup>259</sup> As the court explained:

[A]n agency may not . . . treat[] a project as an isolated 'single-shot' venture in the face of persuasive evidence that it is but one of several substantially similar operations, each of which will have the same polluting effect in the same area. To ignore the prospective cumulative harm under such circumstances could be to risk ecological disaster. As was recognized by Congress at the time of passage of NEPA, a good deal of our present air and water pollution has resulted from the accumulation of small amounts of pollutants added to the air and water by a great number of individual, unrelated sources. 'Important decisions concerning the use and the shape of man's future environment continue to be made in small but steady increments which perpetuate rather than avoid the recognized mistakes of previous decades.' S. Rep. No. 91-296, 91 Cong., 1st Sess. 5 (1969). NEPA was, in large measure, an attempt by Congress to instill in the environmental decision-making process a more comprehensive approach so that long term and cumulative effects of small and unrelated decisions could be recognized, evaluated and either avoided, mitigated, or accepted as the price to be paid for the major federal action under consideration.<sup>260</sup>

Similarly, the Supreme Court agreed that NEPA's statutory language required a comprehensive analysis that includes cumulative effects. "[W]hen several proposals . . . that will have cumulative or synergistic environmental impact upon a region are pending concurrently before an agency, their environmental consequences must be considered together."<sup>261</sup> Thus, the requirement to consider indirect and cumulative

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79 (2d Cir. 1975) (requiring a cumulative effects analysis for dredging the Thames River); *see also* *Jones v. Lynn*, 477 F.2d 885, 891 (1st Cir. 1973) (requiring a cumulative effects analysis); *Swain v. Brinegar*, 517 F.2d 766, 775 (7th Cir. 1975) (same).

<sup>259</sup> *Nat. Res. Def. Council v. Callaway*, 524 F.2d at 94-95.

<sup>260</sup> *Id.* at 88; *see also* *Swain v. Brinegar*, 517 F.2d at 775 ("NEPA is clearly intended to focus concern on the 'big picture' relative to environmental problems. It recognizes that each 'limited' federal project is part of a large mosaic of thousands of similar projects and that cumulative effects can and must be considered on an ongoing basis."); *Minn. Pub. Int. Research Group v. Butz*, 498 F.2d 1314, 1322 (8th Cir. 1974) ("NEPA is concerned with indirect effects as well as direct effects. There has been increasing recognition that man and all other life on this earth may be significantly affected by actions which on the surface appear insignificant."); *Jones v. Lynn*, 477 F.2d at 891 (agency's "piecemeal" analysis of urban renewal program violated NEPA).

<sup>261</sup> *Kleppe v. Sierra Club*, 427 U.S. 390, 410 (1976).

effects arises from NEPA's statutory language and cannot be swept away by a regulatory amendment.

The second reason that caselaw interpreting the BLM's obligation to consider cumulative effects is still relevant is more technical and specific. The Department of the Interior's ("DOI") own regulations continue to explicitly require a cumulative effects analysis. To ensure that the environmental consequences of an action are properly considered Congress directed "to the fullest extent possible" that "all agencies of the Federal Government shall" . . . "develop methods and procedures . . . which will ensure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking."<sup>262</sup> Consistent with the statute's mandate, the DOI adopted implementing regulations that apply to the BLM.<sup>263</sup>

The DOI regulations incorporate by reference the implementing NEPA regulations originally drafted by the CEQ in 1978.<sup>264</sup> Section 46.20 of the DOI regulations provides a chart demonstrating the correlation between DOI regulations and CEQ regulations.<sup>265</sup> Some DOI regulations stand alone, without a corresponding CEQ regulation.<sup>266</sup> Other DOI regulations build upon the corresponding CEQ regulation and do not make sense alone. For example, DOI regulation Section 46.115, entitled "[c]onsideration of past actions in the analysis of cumulative effects," corresponds to CEQ regulation 1508.7 entitled "Cumulative impact."<sup>267</sup> Section 46.115 (DOI regulation) states, "[w]hen considering the effects of past actions as part of a cumulative effects analysis, [bureaus] must analyze the effects in accordance with 40 C.F.R. § 1508.7 ['cumulative impact'] and in accordance with relevant guidance issued by the Council on Environmental Quality."<sup>268</sup> Although the CEQ published changes to its regulations, the DOI has not begun rulemaking to amend its NEPA regulations. This begs the question, which version of CEQ regulations is incorporated by reference to the BLM's NEPA regulations?

Thankfully, the Office of Federal Register has encountered this problem before and drafted a regulation to address it. "Incorporation by

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<sup>262</sup> 42 U.S.C. § 4332(2)(B).

<sup>263</sup> 43 C.F.R. §§ 46.10-.450 (2019).

<sup>264</sup> *Id.* § 46.20 ("This part supplements, and is to be used in conjunction with, the CEQ regulations except where it is inconsistent with other statutory requirements."). The CEQ Regulations were finalized at 43 Fed. Reg. 56,003 (Nov. 29, 1978).

<sup>265</sup> 43 C.F.R. § 46.2(a).

<sup>266</sup> *Id.*

<sup>267</sup> *Id.* § 46.115 (corresponding *id.* § 46.115 (2019) with 40 C.F.R. § 1508.7 (2019)).

<sup>268</sup> *Id.* (the regulation specifically refers to a memo dated June 24, 2005, "or any superseding Council on Environmental Quality Guidance").

reference of a publication is limited to the edition of the publication that is approved. Future amendments or revisions of the publication are not included.”<sup>269</sup>

This approach parallels a relevant rule of statutory construction. The so-called “Lazarus Rule” holds that “where one statute refers to another and incorporates it, which incorporated statute is subsequently repealed, the statute repealed . . . remains in force so far as the adopting statute is concerned.”<sup>270</sup> In the context of administrative law, this principle ensures that the requirements of notice and comment rulemaking are satisfied for each agency and each regulated public. One agency does not have authority to amend another agency’s regulations, which is what would happen if dynamic incorporation were allowed.<sup>271</sup> The Administrative Procedure Act is clear: “[E]ach agency shall separately state and currently publish in the Federal Register for the guidance of the public . . . substantive rules of general applicability adopted as authorized by law, and statements of general policy or interpretations of general applicability formulated and adopted by the agency.”<sup>272</sup> Each agency must “separately state and currently publish . . . each amendment, revision, or repeal” of its rules and policies.<sup>273</sup> In other words, the DOI must amend its own regulations through notice and comment if it desires to eliminate the term “cumulative impacts.” The DOI cannot sidestep the Administrative Procedure Act by dynamically incorporating another agency’s rules. This requirement furthers the predictability expected by the regulated public, and it ensures that changes wrought by one agency are not foisted onto another. “These requirements exist, in part, because markets and industries rely on stable regulations.”<sup>274</sup>

Thus, notwithstanding the recent regulatory changes made by the CEQ, unless and until the DOI revises its own regulations, the BLM is still bound by the 1978 version of the CEQ regulations that are incorporated

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<sup>269</sup> 1 C.F.R. § 51.1(f) (2020).

<sup>270</sup> *Fisher v. City of Grand Island*, 239 Neb. 929, 932 (Neb. 1992) (internal quotations omitted). Presumably the name arose from the colorful introduction to the dissent provided in *Fisher*: “Not since ‘Lazarus, come forth’ has there been such a summons for the dead to associate with the living.” *Id.* at 933.

<sup>271</sup> See generally Emily S. Bremer, *Incorporation by Reference in an Open Government Age*, 36 HARV. J. L. & PUB. POL’Y 131 (2012) (explaining regulatory use of incorporation by reference and demonstrating that dynamic incorporation is legally prohibited in the rulemaking context because it violates the principles of notice and comment).

<sup>272</sup> 5 U.S.C. § 552(a)(1)(D).

<sup>273</sup> *Id.* § 552(a)(2)(E).

<sup>274</sup> *California v. Bernhardt*, 472 F. Supp. 3d 573, 601 (N.D. Cal. 2020).



into DOI's regulations. Those regulations, and relevant case law, still require an assessment of indirect and cumulative effects.

*B. The cumulative impacts discussion requires an analysis of contributions to climate change.*

The original CEQ NEPA regulations defined "cumulative impact" as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions."<sup>275</sup> Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."<sup>276</sup> DOI regulations adopt and build upon this definition. Looking toward the future, "reasonably foreseeable" is defined as "federal and non-federal activities not yet undertaken, but sufficiently likely to occur, that a Responsible Official of ordinary prudence would take such activities into account in reaching a decision."<sup>277</sup> Looking toward the past, DOI bureaus must include the effects of past actions as part of the cumulative effect analysis and "analyze the effects in accordance with 40 C.F.R. § 1508.7" and relevant guidance.<sup>278</sup>

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<sup>275</sup> 40 C.F.R. § 1508.7 (2019).

<sup>276</sup> *Id.*

<sup>277</sup> 43 C.F.R. § 46.30 (2019) (explaining further that reasonably foreseeable future actions that "must be taken into account in the analysis of cumulative impact include, but are not limited to, activities for which there are existing decisions, funding, or proposals identified by the bureau.").

<sup>278</sup> Identifying the relevant guidance is also a challenge. In 2010, the Council on Environmental Quality issued draft guidance instructing agencies on how to incorporate climate change into NEPA analyses. That guidance was finalized in 2016. COUNCIL ON ENV'T QUALITY, EXEC. OFF. OF THE PRESIDENT, MEMORANDUM OF FED. DEP'TS AND AGENCIES, FINAL GUIDANCE FOR FEDERAL DEPARTMENTS AND AGENCIES ON CONSIDERATION OF GREENHOUSE GAS EMISSIONS AND THE EFFECTS OF CLIMATE CHANGE IN NEPA REVIEWS (2016), <https://perma.cc/QP7E-7PUM>. Then it was withdrawn in 2017 by Executive Order 13783. Claiming to favor "clean and safe development of our Nation's vast energy resources," the Order lacked factual underpinnings contained in prior guidance and provided no analysis as to how agencies should address climate change. E.O. 13783, *Energy Independence*, *supra* note 13. Because of this analytical gap, courts and litigants continue to reference the rescinded guidance consistent with its power to persuade. *See, e.g., San Juan Citizens All. v. U.S. BLM*, 326 F. Supp. 3d 1227, 1243 n.5 (D.N.M. 2018) (explaining history of guidance and concluding "to the extent the reasoning is logically sound and consistent with case law, the Court finds it persuasive and worthy of citation"); *accord AquAlliance v. U.S. Bureau of Reclamation*, 287 F. Supp. 3d 969, 1028 n.31 (E.D. Cal. 2018); *see also United States v. Mead Corp.*, 533 U.S. 218, 228, 235 (2001) (recognizing that where a regulatory scheme is highly detailed and the agency can bring specialized experience to bear on subtle questions, an agency document may have the

Climate change is “precisely the type” of cumulative environmental problem that NEPA was intended to address.<sup>279</sup> The importance of considering GHG emissions as part of the cumulative effects analysis is reinforced by a growing tide of court decisions that are harshly critical of a lax cumulative effects analysis of climate change impacts. For example, in *Indigenous Environmental Network*, the agency failed to analyze the cumulative greenhouse gas emissions of the Keystone XL pipeline in combination with other pipelines being built.<sup>280</sup> More recently, in *WildEarth Guardians v. United States*, the same court found that the BLM failed to “give a sufficiently detailed catalogue of past, present, and future projects” where it declined to quantify the immediate and downstream GHG emissions associated with several leases that were issued separately.<sup>281</sup> In both instances, these errors required the agencies to revisit their NEPA analysis.

Project-specific quantification is not enough; the BLM must put the emissions into context. For example, in *WildEarth Guardians v. Bureau of Land Management*, the BLM quantified the greenhouse gas emissions anticipated from several oil and gas lease sales and calculated what percentage of national-level and state-level emissions the new emissions would comprise.<sup>282</sup> The court held that this recitation fell short of providing a meaningful cumulative impacts assessment, which requires that quantification to be put into the context of state and nation-wide emissions.<sup>283</sup> “The global nature of climate change and greenhouse gas emissions means that any single lease sale or BLM project will likely make up a negligible percent of state and nation-wide greenhouse gas emissions. Thus, if the BLM ever hopes to determine the true impact of its projects on climate change, it can do so only by looking at projects in combination with each other, not simply in the context of state and nation-wide

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“power to persuade” according to “the thoroughness evident in its consideration, the validity of its reasoning, [and] its consistency with earlier and later pronouncements.”)

<sup>279</sup> *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1217 (9th Cir. 2008) (“The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct. Any given rule . . . might have an ‘individually minor’ effect on the environment, but these rules are ‘collectively significant actions taking place over a period of time.’”) (citing 40 C.F.R. § 1508.7).

<sup>280</sup> *Indigenous Envtl. Network v. U.S. Dep’t of State*, 347 F. Supp. 3d 561, 579 (D. Mont. 2018).

<sup>281</sup> *WildEarth Guardians v. U.S. BLM*, 457 F. Supp. 3d 880, 895 (D. Mont. 2020) (quoting *Mine Watch v. Hankins*, 456 F.3d 955, 971–72 (9th Cir. 2006)).

<sup>282</sup> *Id.* at 893, 895.

<sup>283</sup> *Id.* at 895.

emissions.”<sup>284</sup> In other words, a permitting official of “ordinary prudence”<sup>285</sup> would consider the national context of past and future GHG emissions relevant when permitting an incremental increase.

Courts have also rejected arguments attempting to skirt the cumulative impacts analysis by asserting that individual leasing decisions result in negligible GHG emissions. For example, in *San Juan Citizens Alliance v. U.S. Bureau of Land Management*, the federal court for the District of New Mexico concluded, “[w]ithout further explanation, the facile conclusion that this particular [GHG emission] impact is minor and therefore ‘would not produce climate change impacts that differ from the No Action Alternative,’ is insufficient.”<sup>286</sup> Similarly, in *WildEarth Guardians v. United States Bureau of Land Management*, the District of Montana rejected the BLM’s segmented analysis of several individual oil and gas lease sales.<sup>287</sup> As it explained, “[t]he cumulative impacts analysis was designed precisely to determine whether ‘a small amount here, a small amount there, and still more at another point could add up to something with a much greater impact.’ ”<sup>288</sup> The court rejected several BLM arguments that assessing the specific impacts of GHG emissions from a specific lease sale was impossible due to the global nature of climate change.<sup>289</sup> “[E]ven though BLM cannot ascertain exactly how all of these projects contribute to climate change impacts felt in the project area, *it knows that less greenhouse-gas emissions equals less climate change.*”<sup>290</sup> These decisions demonstrate judicial awareness of the scientific consensus that in the context of climate change, every incremental increase of GHG emissions is cumulatively significant.

The cumulative effects analysis also requires agencies to consider the effects of actions outside of agency control.<sup>291</sup> The Ninth Circuit applied this requirement in the context of climate change when requiring the NHTSA to provide contextual information in determining whether vehicle emission standards would contribute to climate change. “[T]he fact that climate change is largely a global phenomenon that includes actions that

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<sup>284</sup> *Id.* at 894.

<sup>285</sup> 43 C.F.R. § 46.30 (2019).

<sup>286</sup> *San Juan Citizens All. v. U.S. BLM*, 326 F. Supp. 3d 1227, 1248 (D.N.M. 2018).

<sup>287</sup> *WildEarth Guardians v. U.S. BLM*, 457 F. Supp. 3d at 892 (“BLM provided no catalogue here and little analysis to show the combined environmental impacts.”).

<sup>288</sup> *Id.* at 894 (quoting *Klamath-Siskiyou Wildlands Ctr. v. U.S. BLM*, 387 F.3d 989, 994 (9th Cir. 2004)).

<sup>289</sup> *Id.* at 894.

<sup>290</sup> *Id.* (emphasis added).

<sup>291</sup> *Id.* (defining cumulative impacts to include reasonably foreseeable future actions “regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”).

are outside of the agency's control does not release the agency from the duty of assessing the effects of *its* actions on global warming within the context of other actions that also affect global warming."<sup>292</sup> To emphasize that even modest contributions of greenhouse gases could be considered significant in the context of climate change, the court cited a phrase from a dissent by Judge Wald on the D.C. Circuit in 1990. "[W]e cannot afford to ignore even modest contributions to global warming. If global warming is the result of the cumulative contributions of myriad sources, any one modest in itself, is there not a danger of losing the forest by closing our eyes to the felling of the individual trees?"<sup>293</sup> Putting a project in a regional context this way serves NEPA's primary purpose of informing the relevant decisionmaker "whether, or how, to alter the program to lessen cumulative impacts on climate change."<sup>294</sup>

Some agencies have sought to avoid analyzing the consequences of high-emissions scenarios by characterizing that trajectory as a "worst case scenario." NEPA does not require agencies to prepare a "worst case analysis."<sup>295</sup> However, as the cases discussed above demonstrate, the cumulative effects analysis requires context. Climate change models use scenarios to provide the context necessary to assess risks related to different emission trajectories.<sup>296</sup> For example, the world faces fewer risks if global warming is limited to 1.5 °C through immediate and disciplined adoption of GHG emission reduction strategies than if temperatures are allowed to rise unchecked.<sup>297</sup> In *AquAlliance*, the court rejected the agency's attempt to characterize a high emissions scenario as a "worst case" scenario.<sup>298</sup> As the court explained, the rejected high "emissions scenario is not a 'worst case' scenario, at least not in the way that term is

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<sup>292</sup> *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1217 (9th Cir. 2008).

<sup>293</sup> *Id.* (quoting *City of Los Angeles v. NHTSA*, 912 F.2d 478, 501 (D.C. Cir. 1990) (Wald, C.J., dissenting), *overruled on other grounds by Fla. Audubon Soc. v. Bentsen*, 94 F.3d 658 (D.C. Cir. 1996)).

<sup>294</sup> *WildEarth Guardians v. U.S. BLM*, 457 F. Supp. 3d 880, 894 (D. Mont. 2020).

<sup>295</sup> *See National Environmental Policy Act Regulations: Incomplete or Unavailable Information*, 51 Fed. Reg. 15,618 (Apr. 25, 1986) (to be codified at 40 C.F.R. pt. 1502) (rescinding the requirement to prepare a worst-case analysis).

<sup>296</sup> *See Safari Club Int'l v. Salazar (In re Polar Bear Endangered Species Act Listing and Section 4(d) Rule Litig.)*, 709 F.3d 1, 16 (D.C. Cir. 2012) (noting FWS observation that the different model projections provided in the IPCC's Fourth Assessment Report are "fairly consistent" until mid-century at which point they diverge on the basis of uncertainties about population growth, technological improvements, and regulatory changes, which provide context for risk analyses).

<sup>297</sup> *See generally* IPCC 1.5° Special Report, Summary for Policy Makers, *supra* note 6.

<sup>298</sup> *AquAlliance v. U.S. Bureau of Reclamation*, 287 F. Supp. 3d 969, 1029–30 (E.D. Cal. 2018).

generally understood, in part because the record reflects that recent carbon dioxide emissions have, in fact, been higher than the [high] emissions scenario.”<sup>299</sup> The court’s reasoning is logical and compelling. An agency cannot ignore realistic projections, adopt a model using optimistic warming scenarios, and then make its aspirational assessment even less likely by contributing to a higher warming scenario through increased GHG emissions.

In summary, the context of climate change elevates the significance of incremental increases in GHG emissions. Even though any single lease sale is likely to make up a negligible percent of state-wide greenhouse gas emissions, if the BLM ever hopes to determine the true impact of its project on climate change, it can only do so by looking at projects in combination.<sup>300</sup> That includes taking responsibility for the twenty-four percent of national GHG emissions tied to fossil fuel development on federal land and for the cumulative effect of increasing that percentage of emissions. Just as the BLM “knows that less greenhouse-gas emissions equals less climate change,”<sup>301</sup> it also knows that more greenhouse gas emissions equal more climate change. In order to achieve an emissions trajectory that will limit global warming to 1.5 °C, the United States must make immediate emission reductions and achieve net-zero by 2050. Each step toward a higher emissions trajectory has the cumulative effect of exacerbating climate change. This acknowledgement should be part of the cumulative effects analysis because it provides context by demonstrating the “incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.”<sup>302</sup> As Judge Wald recognized in 1990, failing to recognize that individually modest emissions contribute to climate change presents the danger of “losing the forest by closing our eyes to the felling of the individual trees.”<sup>303</sup>

*C. Upstream and downstream GHG emissions related to fossil fuel development are reasonably foreseeable and must be disclosed.*

Downstream combustion of fossil fuels is increasingly recognized as “reasonably foreseeable” when assessing the effects of a proposed action

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<sup>299</sup> *Id.*

<sup>300</sup> *Wildearth Guardians v. U.S. BLM*, 457 F. Supp. 3d at 894.

<sup>301</sup> *Id.*

<sup>302</sup> 40 C.F.R. § 1508.7 (2019).

<sup>303</sup> *City of Los Angeles v. NHTSA*, 912 F.2d 478, 501 (D.C. Cir. 1990) (Wald, C.J., dissenting) *overruled on other grounds by Fla. Audubon Soc. v. Bentsen*, 94 F.3d 658 (D.C. Cir. 1996); *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1217 (9th Cir. 2008) (quoting Judge Wald’s dissent).

and must therefore be part of the cumulative effects analysis. In addition to the emissions occurring at the exploration and production phases, multiple courts have held that NEPA requires the BLM to also consider the “indirect effect” of downstream emissions resulting from refining and consuming the fuel after it is sold.<sup>304</sup> The D.C. Circuit explained this requirement in *Sierra Club v. Federal Energy Regulatory Commission*: “[G]reenhouse gas emissions are an indirect effect of authorizing this project, which FERC could reasonably foresee, and which the agency has legal authority to mitigate.”<sup>305</sup> The court recognized that the quantification was important because it “would permit the agency to compare the emissions from this project to emissions from other projects, to total emissions from the state or region, and to regional or national emissions-control goals.”<sup>306</sup> That quantification provides an opportunity for informed public comment as well as a meaningful assessment of mitigation measures.

Arguments that it is too speculative to quantify anticipated downstream GHG emissions from fossil fuel combustion are losing credibility. Most permitting processes include a reasonably foreseeable development scenario (“RFDS”) setting forth estimated well or mine production, which can be used to anticipate downstream combustion and

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<sup>304</sup> See *San Juan Citizens Alliance v. U.S. BLM*, 326 F. Supp. 3d 1227, 1242–43 (D.N.M. 2018) (“[I]t is erroneous to fail to consider, at the earliest stage feasible, the environmental consequences of downstream combustion of the coal, oil, and gas resources potentially open to development under the proposed agency action.” (internal quotations omitted)); *W. Org. of Res. Councils v. U.S. BLM*, No. CV 16-21-GF-BMM, 2018 WL 1475470, at \*13 (D. Mont. Mar. 26, 2018) (holding that BLM must consider downstream combustion of coal, oil, and gas resources potentially open to development in RMPs); *Sierra Club v. Fed. Energy Reg. Comm’n*, 867 F.3d 1357, 1374 (D.C. Cir. 2017) (holding that because greenhouse gas emissions are an “indirect effect of authorizing this [pipeline project] which [the agency] could reasonably foresee,” the agency must provide a quantitative estimate of downstream emissions or explain why it could not do so); *Montana Envtl. Info. Ctr. v. U.S. Office of Surface Mining*, No. CV 15-106-M-DWM, 2017 WL 5047901, at \*3 (D. Mont. Nov. 3, 2017) (holding that GHG emissions caused by burning coal extracted from a coal mine are indirect effects of coal trains); *Diné Citizens Against Ruining Our Env’t v. U.S. Office of Surface Mining Reclamation & Enforcement*, 82 F. Supp. 3d 1201, 1213 (D. Colo. 2015) (finding that coal combustion is an indirect effect of expanding coal mine), *vacated as moot* by 643 Fed. Appx. 799 (10th Cir. 2016); *WildEarth Guardians v. U.S. Office of Surface Mining, Reclamation & Enforcement*, 104 F. Supp. 3d 1208, 1229–30 (D. Colo. 2015) (downstream coal combustion is an indirect effect of mining plan), *order vacated and appeal dismissed as moot* by 652 Fed. Appx. 717 (10th Cir. 2016).

<sup>305</sup> *Sierra Club v. FERC*, 867 F.3d at 1374.

<sup>306</sup> *Id.*

emissions.<sup>307</sup> The RFDS is a “long-term projection of oil and gas exploration, development, production and reclamation activity in a defined area for a specified time”<sup>308</sup> and should be included in the NEPA analysis.<sup>309</sup> The RFDS is important because it “serves as a baseline for identifying and quantifying direct, indirect, and cumulative impacts of oil and gas activity.”<sup>310</sup>

The BLM cannot skirt its responsibility to consider upstream and downstream GHG emissions by claiming that if it rejects or limits fossil fuel development in one location, the minerals will simply be developed elsewhere. The Tenth Circuit expressly rejected this argument and the BLM's conclusion that expanding two coal mines to extend the life of the mines would have no consequential impact on carbon dioxide emissions.<sup>311</sup> “This long logical leap presumes that either the reduced supply will have no impact on price, or that any increase in price will not make other forms of energy more attractive and decrease coal's share of the energy mix, even slightly.”<sup>312</sup> The court found that this assumption

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<sup>307</sup> See, e.g., *id.* (holding that because FERC had already estimated how much gas the pipelines would transport, there was no reason why that number could not be used to estimate GHG emissions); *Citizens for a Healthy Cmty. v. U.S. BLM*, 377 F. Supp. 3d 1223, 1237 (D. Colo. 2019) (“Simply put, an agency cannot rely upon production estimates while simultaneously claiming it would be too speculative to rely upon the predicted emissions from those same production estimates.”); *Wilderness Workshop v. U.S. BLM*, 342 F. Supp. 3d 1145, 1156 (D. Colo. 2018) (“It is arbitrary and capricious for a government agency to use estimates of energy output for one portion of an EIS, but then state that it is too speculative to forecast effects based on those very outputs.”); *High Country Conservation Advocates v. U.S. Forest Service*, 52 F. Supp. 3d 1174, 1196–97 (D. Colo. 2014) (“The agency cannot—in the same FEIS—provide detailed estimates of the amount of coal to be mined and simultaneously claim that it would be too speculative to estimate emissions from ‘coal that may or may not be produced’ from ‘mines that may or may not be developed.’ The two positions are nearly impossible to reconcile.” (internal parenthesis omitted)); *W. Org. of Res. Councils v. U.S. BLM*, No. CV 16-21-GF-BMM, 2018 U.S. Dist. LEXIS 49635, at \*40 (D. Mont. Mar. 26, 2018), *appeal docketed*, No. 18-35849 (9th Cir. Oct. 12, 2018) (“In light of the degree of foreseeability and specificity of information available to the agency while completing the EIS, NEPA requires BLM to consider in the EIS the environmental consequences of the downstream combustion of the coal, oil and gas resources potentially open to development under these RMPs. Without such analysis, the EIS fails to ‘foster informed decisionmaking’ as required by NEPA.” (emphasis and quotations in original)).

<sup>308</sup> R Terms, *Reasonably Foreseeable Development Scenario (RFDS)*, in 8 WILLIAMS & MEYERS, OIL AND GAS LAW SCOPE (2019) (citing Deborah Reichman, 173 IBLA 149, 157 (2007)).

<sup>309</sup> BLM, MANUAL § 1601.06(A)(3).

<sup>310</sup> WILLIAMS & MEYERS, *supra* note 308.

<sup>311</sup> See, e.g., *WildEarth Guardians v. U.S. BLM*, 870 F.3d 1222, 1229 (10th Cir. 2017).

<sup>312</sup> *Id.*

was arbitrary and capricious and an abuse of discretion because it “defeated NEPA’s purpose . . . of informed decisionmaking and informed public comment.”<sup>313</sup> Similarly, the Federal District Court in Montana recently rejected an argument that a coal mine expansion would not contribute to an increase to GHG emissions because the coal would be developed elsewhere. The court described the argument as “illogical,” noting that it put a “thumb on the scale by inflating the benefits of the action while minimizing the impacts,” which is the kind of inaccurate information that would defeat the purpose of a NEPA analysis.<sup>314</sup>

Cases such as these demonstrate that existing law already imposes a duty on the BLM to quantify anticipated GHG emissions, including the downstream emissions of the hydrocarbons produced from every oil and gas well. Existing case law also recognizes that the purpose of quantifying emissions is to provide a meaningful assessment of mitigation measures, including GHG emission mitigation, during the NEPA analysis.

#### *D. Courts recognize that old data is inadequate data.*

Although agencies may tier their EISs to earlier documents in order to avoid repetitive discussions of the same issues,<sup>315</sup> courts are recognizing that old data provided in outdated resource management plans or EISs do not satisfy NEPA if those documents do not incorporate accurate climate trends. When tiering to other NEPA documents, DOI regulations require the analysis to include a finding that the “conditions and environmental effects described in the broader NEPA document are still valid or address any exceptions.”<sup>316</sup> In relation to climate change, this standard cannot be satisfied if the earlier document relies on outdated climate assumptions.

In *Western Organization of Resource Councils v. BLM*, the court found that the BLM arbitrarily restricted the range of alternatives in a coal leasing analysis by relying on Resource Management Plans that were

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<sup>313</sup> *Id.* at 1237.

<sup>314</sup> *Mont. Envtl. Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1098 (D. Mont. 2017).

<sup>315</sup> 40 C.F.R. § 1502.20 (2019); *id.* § 1508.28; 43 C.F.R. § 46.140 (2019); *see also* Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. 43,304, 43,363 (to be codified at 40 C.F.R. pt. 1501.11) (discussing tiering).

<sup>316</sup> 43 C.F.R. § 46.140 (2019) (“A NEPA document that tiers to another broader NEPA document in accordance with 40 CFR 1508.28 must include a finding that the conditions and environmental effects described in the broader NEPA document are still valid or address any exceptions.”).



drafted in 1985 and 1996.<sup>317</sup> By shortening its alternatives analysis, the BLM also failed to consider the impacts of climate change.<sup>318</sup> Although other BLM documents generically acknowledged climate change at a departmental level, the BLM did not update its coal leasing analysis to include climate change concerns or to consider whether those concerns justified restricting new coal leases.<sup>319</sup> The court found that the omission arbitrarily restricted the alternatives analysis and did not deserve deference. “Without such consideration, BLM could not make a reasoned choice as to whether foreclosing development on additional acreage would serve its multiple use mandate and would address concerns that may arise from the changing conditions . . . including climate change.”<sup>320</sup>

Similarly, in *National Wildlife Federation v. National Marine Fisheries*, the District of Oregon held that “relying on data that is too stale to carry the weight assigned to it may be arbitrary and capricious,” particularly where it restricts the alternatives analysis.<sup>321</sup> In that case, the agency relied upon an EIS drafted in the 1990s that failed to incorporate recent climate science.<sup>322</sup> Harkening back to NEPA’s purpose, the court recognized that a thorough alternatives analysis “may be able to break through any logjam that simply maintains the precarious status quo.”<sup>323</sup>

These court decisions have implications for the BLM. The scenario addressed in *Western Organization* and *National Wildlife Federation* is not uncommon. Many of the BLM’s land use plans date to the 1980s and 1990s, and the majority of the BLM’s existing plans do not take into account knowledge and obligations around climate change that have been available for more than a decade.<sup>324</sup> New data regarding the effects,

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<sup>317</sup> *W. Org. of Res. Councils v. U.S. BLM*, Case No. CV 16-21-GF-BMM, 2018 WL 147570, at \*7 (D. Mont. 2018).

<sup>318</sup> *Id.* (“The 1985 Miles City RMP and the 1996 Miles City RMP failed to consider the impacts of climate change.”).

<sup>319</sup> *Id.* at \*9.

<sup>320</sup> *Id.*

<sup>321</sup> *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Servs.*, 184 F. Supp. 3d 861, 875 (D. Or. 2016).

<sup>322</sup> *Id.* (noting that “significant developments in the scientific information relating to climate change and its effects . . . has improved such that environmental impact statements prepared in the 1990s are neither current nor sufficient.”).

<sup>323</sup> *Id.* at 876 (holding that the purpose of a comprehensive NEPA analysis is to “allow, even encourage, new and innovative solutions to be developed, discussed, and considered.”).

<sup>324</sup> *See, e.g., Utah Planning and NEPA, Plans in Effect*, BLM, <https://www.blm.gov/programs/planning-and-nepa/plans-in-development/utah> (last visited May 27, 2020) (identifying seven plans within Utah that date to the 1980s and fifteen plans that are more than twenty years old); *see also New Mexico Planning and NEPA, Plans in Effect*, BLM, <https://www.blm.gov/programs/planning-and-nepa/plans-in-development/new->

intensity, and urgency of global warming must be included in the BLM's NEPA analyses, including permitting decisions. A comprehensive assessment of climate-related impacts may break historic logjams blocking consideration of new and innovative management strategies for fulfilling FLPMA's multiple use mandate. The BLM cannot continue to rely on stale data to maintain the precarious status quo.

## V. THE BLM SHOULD DEVELOP A COMPREHENSIVE GHG MITIGATION PLAN FOR ITS OIL AND GAS PERMITTING DECISIONS.

In order to find a more appropriate balance between the risks of climate change and federal energy development, the BLM could incorporate a net-zero mitigation requirement into its fossil fuel permitting decisions. This approach would allow continued energy development without ignoring climate change. A net-zero requirement on all new development activity would be more consistent with the BLM's responsibility of managing various resources "without permanent impairment of the productivity of the land and quality of the environment"<sup>325</sup> because it would help achieve the emissions trajectory necessary to keep global warming below 1.5 °C. A net-zero requirement would also "prevent unnecessary or undue degradation" by avoiding an increase in GHG emissions that will exacerbate climate change and its effects on public lands. Finally, a net-zero requirement would be more consistent with FLPMA's multigenerational investment horizon. It would also strike a more appropriate balance of resource uses to meet "the present and future needs of the American people."<sup>326</sup>

The BLM could incorporate a net-zero requirement without waiting for Congress to make a legislative change. The existing oil and gas leasing structure provides the BLM with ample authority to mitigate adverse effects at multiple stages of the exploration and production process. The following discussion focuses on the oil and gas permitting process; the same principles could apply to other fossil fuel permitting decisions.

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mexico (identifying two plans in effect that date to 1986 and six plans that are more than twenty years old) (last visited Mar. 1, 2021).

<sup>325</sup> 43 U.S.C. § 1702(c).

<sup>326</sup> *Id.* (defining multiple use to include "management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people").

*A. The BLM should impose a moratorium on oil and gas leasing until it has a comprehensive GHG mitigation plan.*

The BLM has authority to impose a moratorium on oil and gas while it develops a comprehensive GHG mitigation policy as part of the land-use planning process.<sup>327</sup> A moratorium is simply a pause on leasing and permitting decisions that would allow the BLM to develop a comprehensive strategy that is responsive to the climate data currently being ignored. The BLM's authority to impose a moratorium on oil and gas leasing arises from its overarching duty, articulated in FLPMA, to manage multiple uses without permanently impairing resources under its care.<sup>328</sup>

The argument that BLM lacks discretion to pause oil and gas lease sales elevates form over function and ignores the relevant facts. The Mineral Leasing Act ("MLA") states, "[a]ll lands subject to disposition under this Act . . . may be leased by the Secretary."<sup>329</sup> The statute then articulates procedures for leasing lands. Among other things, the procedures state that "[l]ease sales shall be held for each State where eligible lands are available at least quarterly and more frequently if the Secretary of the Interior determines such sales are necessary."<sup>330</sup> Some people have argued that this requirement prohibits the BLM from imposing a moratorium on oil and gas leasing.<sup>331</sup> This argument myopically focuses on the phrase "shall be held quarterly" to the exclusion of context. First, the Secretary has authority to determine which lands are "eligible" and that determination must be made consistent with FLPMA's multiple use mandate. The MLA qualifies the requirement to hold quarterly lease sales with the predicate "where eligible lands are available," suggesting that at some point and in some places, eligible lands

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<sup>327</sup> United States ex rel. McLennan v. Wilbur, 283 U.S. 414, 419 (1931) (upholding moratorium on oil and gas leasing); John D. Leshy, *Interior's Authority to Curb Fossil Fuel Leasing*, 49 ENVTL. L. REP. 10631, 10631–32 (2019); Michael Burger & Jessica Wentz, *Downstream and Upstream Greenhouse Gas Emissions: The Proper Scope of NEPA Review*, 41 HARV. ENVTL. L. REV. 109, 118–19 (2017) (discussing statutory and precedential authority to impose moratoriums on coal and oil and gas leases).

<sup>328</sup> Other provisions further emphasize this duty. *See, e.g.*, 43 U.S.C. § 1732(b) ("In managing the public lands, the BLM shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands.").

<sup>329</sup> *Id.* § 226(a).

<sup>330</sup> 30 U.S.C. § 226(b)(1)(A).

<sup>331</sup> *See, e.g.*, *W. Energy All. v. Jewell*, No. 1:16-CV-00912, 2017 U.S. Dist. LEXIS 5574, at \*42–44 (D.N.M. Jan. 13, 2017) (holding that plaintiffs, Western Energy Alliance, had standing to claim that BLM had a statutory non-discretionary duty to hold quarterly lease sales when eligible lands were available).

may not be available. Additionally, the BLM's permitting decisions under the MLA are governed by its statutory duties under FLPMA, not the other way around. FLPMA states explicitly, "[i]n managing the public lands the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands."<sup>332</sup> Where holding quarterly sales may result in unnecessary or undue degradation by locking in decades of unmitigated GHG emissions based on outdated scientific assumptions, this provision grants the BLM discretion to take a pause on the quarterly sales.

Additionally, a moratorium is simply an adjustment to the pace and structure of development. The MLA vests the BLM with discretion to manage the pace and structure of mineral leasing, including suspension of operations in the interest of conservation.<sup>333</sup> The BLM has relied upon its discretion under FLPMA and the MLA to adjust the pace of oil and gas leasing in the past.<sup>334</sup> Additionally, federal courts have recognized that the phrase "in the interest of conservation" used in the MLA includes the prevention of environmental harm.<sup>335</sup>

In a slightly different context involving routes across public lands, the Tenth Circuit recognized that the BLM must have discretion to suspend operations in order to complete the necessary analysis for land use planning where there is a threat of degradation. "Because the RMP revision process is much more time-consuming than enacting a temporary closure order, the BLM could not effectively respond to resource degradation only through the formal planning process."<sup>336</sup> The same is

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<sup>332</sup> 43 U.S.C. § 1732(b).

<sup>333</sup> See 30 U.S.C. § 209 ("In the event the Secretary of the Interior, in the interest of conservation, shall direct or shall assent to the suspension of operations and production under any lease granted under the terms of this chapter . . ."); 43 C.F.R. § 3103.4-4(a) (1996) ("A suspension of all operations and production may be directed or consented to by the authorized officer only in the interest of conservation of natural resources."); see also Burger & Wentz, *supra* note 327, at n.26-27 (listing provisions in the Mineral Leasing Act that vest the BLM with discretion to manage the pace and structure of oil and gas leasing); see also Leshy, *supra* note 327, at 10631-32 (challenging Secretary Bernhardt's suggestion that the BLM lacks authority to impose a moratorium by reviewing the discretionary language in 30 U.S.C. § 226(a) combined with precedent upholding a moratorium and subsequent legislative history of the Mineral Leasing Act).

<sup>334</sup> See DEP'T OF INTERIOR, IM 2016-143, IMPLEMENTATION OF GREATER SAGE-GROUSE RESOURCE MANAGEMENT PLAN REVISIONS OR AMENDMENTS- OIL & GAS LEASING AND DEVELOPMENT SEQUENTIAL PRIORITIZATION, 7 n.10 (Sept. 1, 2016).

<sup>335</sup> Copper Valley Machine Works, Inc. v. Andrus, 653 F.2d 595, 601 (D.C. Cir. 1981); Hoyl v. Babbit, 129 F.3d 1377, 1380 (10th Cir. 1997).

<sup>336</sup> Utah Shared Access All. v. Carpenter, 463 F.3d 1125, 1136 (10th Cir. 2006) (BLM closure of land to ORV use in order to avoid undue degradation during the land use

true with regard to fossil fuel development. The pace and structure of the current leasing system allows for cumulatively significant increases in GHG emissions, despite an urgent need to reduce national emissions in order to avoid widespread resource degradation. Every incremental increase in GHG emissions exacerbates climate change. Pausing oil and gas leasing in order to develop a comprehensive GHG mitigation strategy is within the BLM's discretion and will allow the BLM to fulfill its statutory mandate of multiple uses "without permanent impairment of the productivity of the land and the quality of the environment."<sup>337</sup>

The BLM's responsibility to inventory public resources in order to make informed and strategic land use decisions provides further justification for a moratorium.<sup>338</sup> FLPMA recognized that "the national interest will be best realized if the public lands and their resources are periodically and systematically inventoried and their present and future use is projected through a land use planning process."<sup>339</sup> FLPMA imposed a mandatory obligation on the BLM to inventory public lands and their resources and other values: "This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values."<sup>340</sup> Based on this inventory, the BLM must then "develop, maintain, and when appropriate, revise land use plans" directing the management of public lands.<sup>341</sup>

Existing oil and gas lease statistics indicate that a pause is needed to update planning for oil and gas development. The BLM maintains a website publishing statistical information relating to oil and gas leasing on federal lands.<sup>342</sup> Reviewing the most recent statistics reveals two notable trends. First, the BLM offers a supply of land available for oil and gas

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planning process was not "de facto planning" that required an Environmental Assessment and was within BLM's authority and responsibility under FLPMA).

<sup>337</sup> 43 U.S.C. § 1702(c).

<sup>338</sup> *Id.* § 1711(a) ("The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values . . . This inventory shall be kept current so as to reflect changes in conditions and identify new and emerging resource and other values."); *see also* U.S. DEP'T OF THE INTERIOR, SECRETARIAL ORDER 3338, DISCRETIONARY PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT TO MODERNIZE THE FEDERAL COAL PROGRAM (2016) (justifying a pause on the issuance of new federal coal leases to avoid "locking in for decades the future development of large quantities of coal under current rates and terms that the PEIS may ultimately determine to be less than optimal.").

<sup>339</sup> 43 U.S.C. § 1701(a)(2).

<sup>340</sup> *Id.* § 1711(a).

<sup>341</sup> *Id.* § 1712(a).

<sup>342</sup> *Oil and Gas Statistics*, BLM, <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/oil-and-gas-statistics> (last visited Mar. 7, 2021) [hereinafter BLM Statistics Website].

leasing that is significantly higher than the demand. According to the BLM's annual summary, in Fiscal Year 2020, the BLM offered 1,465 parcels (representing 5,295,075 acres) for sale.<sup>343</sup> Of those, only 754 parcels (representing 1,564,478 acres) received bids.<sup>344</sup> This means that only half of the parcels (fifty-one percent) and only thirty percent of the acreage put up for leasing received a bid. In other words, the current supply of leasable land far outpaces demand.

Additionally, many leases have not been brought into production. In 2018, the total number of leases was 38,147 (representing 25,552,475 acres).<sup>345</sup> In contrast, there were only 24,028 producing leases (representing 12,794,553 acres).<sup>346</sup> This indicates that there are 14,119 leases across 12,757,922 acres—almost 20,000 square-miles, or more than Vermont and New Hampshire combined—that have been leased but not developed. If each of these already leased parcels were put into production, it would increase the number of producing leases by thirty-seven percent. Therefore, the existing store of oil and gas leases will already impose a potentially significant, but not-yet-analyzed increase in GHG emissions. The significance of those emissions, and methods for mitigating those emissions should be analyzed before the BLM increases the supply even further. In light of these facts, instituting a pause on lease sales is justified and consistent with the BLM's duty to avoid permanent impairment of resources and prevent unnecessary or undue degradation.

*B. The BLM should use its statutory mitigation authority to require GHG mitigation for new oil and gas development activity.*

The BLM has broad authority under FLPMA, NEPA, and the MLA to identify and implement actions that mitigate adverse effects of a project, including oil and gas leasing activities.<sup>347</sup> The BLM also has contractual authority under the Standard Mineral Lease Form (“Lease”) to require oil and gas lessees to incorporate mitigation measures as a condition of approval for drilling operations. The BLM could use these authorities to identify GHG emissions as an adverse impact and require operators to

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<sup>343</sup> BLM Statistics Website, *supra* note 342, at tbl.15 (Oil and Gas Lease Sales, Fiscal Year 2020).

<sup>344</sup> *Id.*

<sup>345</sup> BLM Statistics Website, *supra* note 342, at tbl.1 (listing total number of leases), tbl.2 (listing total acreage in effect).

<sup>346</sup> BLM Statistics Website, *supra* note 342, at tbl.5 (listing total number of producing leases), tbl.6 (listing total acreage of producing leases).

<sup>347</sup> See Michael Burger, *A Carbon Fee as Mitigation for Fossil Fuel Extraction on Federal Lands*, 42 COLUM. J. ENVTL. L. 295, 316–22 (2017).

mitigate that impact by avoiding, minimizing, and offsetting GHG emissions. With this approach, the BLM could require that all new oil and gas development activity achieves net-zero emissions.

Mitigation authority under FLPMA stems from the BLM's obligation to balance multiple resources, avoid permanent impairment, and to prevent unnecessary or undue degradation.<sup>348</sup> This statutory mitigation authority infuses the BLM's regulations with the authority to set standards that avoid impairment of other resources.<sup>349</sup>

In addition to FLPMA, NEPA's plain statutory language and the BLM's related NEPA implementing regulations also impose a duty to consider alternatives that mitigate adverse impacts of a proposed action.<sup>350</sup> The DOI's NEPA regulations require that every proposed action include an analysis of "any appropriate mitigation measures or best management practices that are considered."<sup>351</sup> The mitigation measures "can be analyzed either as elements of alternatives or in a separate discussion of mitigation."<sup>352</sup>

Although NEPA is frequently characterized as a purely procedural statute, the process of disclosure creates an opportunity to determine whether reasonable mitigation measures were overlooked during the land planning phase. Paired with the BLM's duty to avoid permanent impairment of resources and the mandate to prevent unnecessary or undue degradation, the NEPA process could reveal circumstances where the

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<sup>348</sup> See *supra* Section III.A; see, e.g., *Mineral Policy Ctr. v. Norton*, 292 F. Supp. 2d 30, 42 (D.D.C. 2003) ("FLPMA, by its plain terms, vests the Secretary of the Interior with the authority—and indeed the obligation—to disapprove of an otherwise permissible mining operation because the operation, though necessary for mining, would unduly harm or degrade the public land."); Jessica Wilkinson et al., *Solid Ground: Using Mitigation to Achieve Greater Predictability, Faster Project Approval, and Better Conservation Outcomes*, 49 ENV'T L. REP. 10028, 10033–35 (2019) (listing authorities).

<sup>349</sup> See Burger, *supra* note 347, at 316–20; see generally Justin Pidot, *Compensatory Mitigation and Public Lands*, 61 BOS. COLL. L. REV. 1045 (2020) (articulating sources of BLM's authority to require compensatory mitigation).

<sup>350</sup> 42 U.S.C. § 4332(2)(C)(iii); see also Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. 43,304, 43,365 (July 16, 2020) (to be codified at 40 C.F.R. § 1502.14(e)) (requiring that EISs "[i]nclude appropriate mitigation measures not already included in the proposed action or alternatives."); see generally Jamison E. Colburn, *The Risk in Discretion: Substantive NEPA's Significance*, 41 COLUM. J. ENVTL. L. 1 (2016) (arguing for a substantive interpretation of NEPA).

<sup>351</sup> 43 C.F.R. § 46.130(a) (2008).

<sup>352</sup> *Id.*

BLM failed to incorporate mitigation measures into the permitting process, contrary to its statutory duties under FLPMA.<sup>353</sup>

Additionally, under the MLA, the BLM has broad discretion to determine which lands may be leased for oil and gas development.<sup>354</sup> That discretion encompasses authority to decide not to lease lands as well as authority to define operational limitations on all leasing activities.<sup>355</sup> Since at least 2008, the BLM has recognized that its authority to identify and implement mitigation measures—both on-site and off-site of mineral development leases—arises out of FLPMA and the authority to regulate public land uses.<sup>356</sup>

Specific to onshore oil and gas leases, the BLM has regulatory authority under the MLA “to require that all operations be conducted in a manner which protects other natural resources and the environmental quality.”<sup>357</sup> Emphasizing this authority, oil and gas leasing regulations also impose a duty on operators to comply with mitigation focused restrictions. Operators must conduct “all operations in a manner . . . [that] protects other natural resources and environmental quality; which protects life and property.”<sup>358</sup> Additionally, operators “shall conduct operations in a manner which protects the mineral resources, other natural resources, and environmental quality.”<sup>359</sup> These regulations are consistent with the BLM’s statutory duty under FLPMA that “in managing the public lands the [BLM] shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands.”<sup>360</sup>

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<sup>353</sup> Moreover, because the regulatory requirement to include mitigation and best management practices in the NEPA analysis arises out of the Department of Interior’s implementing regulations, it is unaffected by the proposed regulatory changes to the CEQ’s implementing regulations.

<sup>354</sup> See 30 U.S.C. § 226(a).

<sup>355</sup> Leshy, *supra* note 327, at 10631–32; see discussion *supra* Section V.A.

<sup>356</sup> BLM, INSTRUCTION MEMORANDUM NO. 2008-204: OFFSITE MITIGATION QUESTIONS AND ANSWERS (2008) (“The BLM’s authority to address the mitigation of impacts on public lands associated with a use authorization issued by the BLM derives from the Federal Land Policy and Management Act (FLPMA). Additional authority can be found in the statutes governing specific uses of the public lands such as the Mineral Leasing Act. The congressional declaration of policy for FLPMA states 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 . . .’ FLPMA § 102(A)(8). In addition, the use, occupancy, and development of public lands must be regulated by the Secretary through easements, permits, leases, licenses, or other instruments. FLPMA § 302(b)”; Burger, *supra* note 347, at 319–20.

<sup>357</sup> 43 C.F.R. § 3161.2 (2021).

<sup>358</sup> *Id.* § 3162.1(a).

<sup>359</sup> *Id.* § 3162.5-1(a).

<sup>360</sup> 43 U.S.C. § 1732(b).



In addition to the statutory sources of authority listed above, the BLM also has contractual authority to impose mitigation measures on oil and gas lessees. The plain language of the Lease puts every lessee on notice that the right to drill for oil and gas on federal land is subject to the duty to minimize adverse impacts, even if those impacts are not contemplated at the time of the lease sale.<sup>361</sup> Section 6 of the Lease, which addresses conduct of operations, states, “[l]essee must conduct operations in a manner that minimizes adverse impacts to the land, air, and water, to cultural, biological, visual, and other resources, and to other land uses or users.”<sup>362</sup> Lessees must also “take reasonable measures deemed necessary by lessor to accomplish the intent of this section.”<sup>363</sup> These measures can be identified after the lease sale, when the applicant applies to drill. “Prior to disturbing the surface of the leased lands,” the lessee must notify the lessor “to be apprised of procedures to be followed and modifications or reclamation measures that may be necessary.”<sup>364</sup> Finally, Section 6 of the Lease also puts lessees on notice that operations may be restricted or even ceased for environmental reasons.<sup>365</sup> Thus, the plain language of the standard lease form notifies each lessee that in addition to any stipulations imposed by land management plans and contained in the Lease, the BLM reserves contractual authority to impose additional mitigation and reclamation measures after the Lease is signed and when the lessee applies to drill.

In summary, the BLM has the statutory, regulatory, and contractual authority and obligation to regulate mineral leasing operations in a manner that protects environmental quality. That authority includes the ability to

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<sup>361</sup> BLM, OFFER TO LEASE AND LEASE FOR OIL AND GAS, FORM 3100-11, at 3, § 6. (2008) (These contractual provisions are consistent with the BLM regulations.); 43 C.F.R. § 3162.5-1(a) (2021) (“The operator shall conduct operations in a manner which protects . . . natural resources, and environmental quality.”); *see also id.* § 3152.5-1(b) (“The operator shall exercise due care and diligence to assure that leasehold operations do not result in undue damage to surface or subsurface resources.”); *id.* § 3101.1-2 (“A lessee shall have the right to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, remove and dispose of all the leased resource in a leasehold subject to: Stipulations attached to the lease; restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed.”).

<sup>362</sup> OFFER TO LEASE AND LEASE FOR OIL AND GAS, *supra* note 361, at 3, § 6.

<sup>363</sup> *Id.*

<sup>364</sup> *Id.*

<sup>365</sup> *Id.* (“If in the conduct of operations, threatened or endangered species, objects of historic or scientific interest, or substantial unanticipated environmental effects are observed, lessee must immediately contact lessor. Lessee must cease any operations that would result in the destruction of such species or objects.”).

impose mitigation measures as necessary to protect other asset values protected by the multiple use and sustained yield standard imposed by FLPMA.<sup>366</sup>

*C. Arguments that the BLM cannot impose compensatory mitigation measures are procedurally irregular, inconsistent with precedent, and contrary to the statutory duties imposed by FLPMA.*

Before delving into the BLM's authority to impose a net-zero standard in the context of oil and gas development, it is necessary to distinguish between legal authority and the BLM's current policy. This Section first provides history regarding the BLM's current stance rejecting compensatory mitigation, which is set forth in Instruction Memorandum ("IM 2018-093") entitled "Compensatory Mitigation."<sup>367</sup> The second part of this Section summarizes the legal arguments against the BLM's current stance.

*1. The history of the BLM's current stance rejecting compensatory mitigation in IM 2018-093.*

The Trump administration's approach to climate change was to ignore it,<sup>368</sup> and the BLM embraced this policy.<sup>369</sup> On March 28, 2017,

<sup>366</sup> See *supra* Section III.

<sup>367</sup> IM 2018-93, *supra* note 100 (This was later replaced by IM 2019-018 without substantive changes. For simplicity and consistency with other analytical discussions of the memo, this discussion uses the original title.)

<sup>368</sup> See, e.g., Chris Baynes, *Trump Administration Removes Quarter of All Climate Change References from Government Websites*, THE INDEPENDENT (Aug. 17, 2019), <https://www.independent.co.uk/climate-change/news/trump-climate-change-government-websites-global-warming-a9020461.html> (discussing report that analyzed more than 5,300 pages of 23 federal agencies and found a twenty-five percent reduction in usage of terms "climate change," "clean energy" and "adaptation."); ERIC NOST ET AL., ENV'T DATA GOVERNANCE INITIATIVE, THE NEW DIGITAL LANDSCAPE: HOW THE TRUMP ADMINISTRATION UNDERMINED FEDERAL WEB INFRASTRUCTURES FOR CLIMATE INFORMATION (2019), [https://envirodatagov.org/wp-content/uploads/2019/07/New\\_Digital\\_Landscape\\_EDGI\\_July\\_2019.pdf](https://envirodatagov.org/wp-content/uploads/2019/07/New_Digital_Landscape_EDGI_July_2019.pdf); see also *Website Monitoring*, ENV'T DATA & GOVERNANCE INITIATIVE, <https://envirodatagov.org/website-monitoring/> (providing ongoing analysis and reports of changes to federal agency websites that restrict access to climate-related information) (last visited Mar. 21, 2021).

<sup>369</sup> See ANDREW BERGMAN, ET AL., ENV'T DATA & GOVERNANCE INITIATIVE, REMOVAL OF CLIMATE CHANGE WEBPAGE FROM AND SHIFT IN LANGUAGE ON THE BUREAU OF LAND MANAGEMENT'S WEBSITE (2018), <https://envirodatagov.org/wp-content/uploads/2018/01/WM-CCR-21-DOI-BLM-Website-180109.pdf> (documenting changes to the BLM's website that eliminate references to climate change).

Executive Order 13783, *Promoting Energy Independence and Economic Growth*, rescinded all executive orders related to climate change and instructed all agencies to “suspend, revise, or rescind” any action undertaken in compliance with the rescinded energy and climate-related presidential regulatory actions.<sup>370</sup> In addition to revoking Presidential Actions, Executive Order 13783 also rescinded climate related reports, including “The President’s Climate Action Plan” and the “Climate Action Strategy to Reduce Methane Emissions.” The Order provided no factual justifications for the recession, alternative climate-related reports, or replacement strategy for climate change response. It simply reversed course and wished away climate change.

In response to Executive Order 13783, the DOI issued several Secretarial Orders, including Secretarial Order 3349, *American Energy Independence*, which instructed all departments to undertake a “Mitigation Policy Review” and a “Climate Change Policy Review” as well as a review of “Other Department Actions Impacting Energy Development.”<sup>371</sup> The BLM responded with zeal. The results were published in October in “*Final Report: Review of the Department of the Interior Actions that Potentially Burden Domestic Energy*,” which listed all of the climate-related actions that the BLM either intended to or had already reversed.<sup>372</sup>

In addition to revoking and halting all climate-related programs, Secretarial Order 3349 also took aim at mitigation practices. After revoking Secretarial Order 3330, “*Improving Mitigation Policies and Practices of the Department of the Interior*,”<sup>373</sup> it directed agencies to review all actions taken pursuant to that order for possible reconsideration, modification, or rescission.<sup>374</sup> Next, Secretarial Order 3360 rescinded BLM Manual Section 174 Mitigation (Dec. 22, 2016) and BLM Mitigation Handbook H-1794-1.<sup>375</sup>

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<sup>370</sup> Exec. Order No. 13783, *Energy Independence*, *supra* note 13.

<sup>371</sup> SECRETARIAL ORDER 3349, AMERICAN ENERGY INDEPENDENCE, *supra* note 99.

<sup>372</sup> DOI, REPORT OF ACTIONS THAT POTENTIALLY BURDEN ENERGY, *supra* note 99.

<sup>373</sup> U.S. DEP’T OF THE INTERIOR, SECRETARIAL ORDER 3330, IMPROVING MITIGATION POLICIES AND PRACTICES OF THE DEPARTMENT OF THE INTERIOR § 1 (2013) (Secretarial Order 3330 had been adopted to establish a department-wide mitigation strategy that ensured consistency, efficiency, and durability in mitigation practices. One of the purposes of S.O. 3330 was to facilitate the use of a landscape-scale approach to land use decisions and to “focus on mitigation efforts that improve the resilience of our Nation’s resources in the face of climate change.”).

<sup>374</sup> SECRETARIAL ORDER 3349, AMERICAN ENERGY INDEPENDENCE, *supra* note 99, at 2.

<sup>375</sup> SECRETARIAL ORDER NO. 3360, RESCINDING AUTHORITIES INCONSISTENT WITH SECRETARY’S ORDER 3349, “AMERICAN ENERGY INDEPENDENCE” (2017), <https://www>

In response, the Deputy Director for Policy and Programs in the BLM, Brian Steed, issued a department wide Instruction Memorandum (“IM 2018-093”) entitled “Compensatory Mitigation.”<sup>376</sup> IM 2018-093 took the highly unusual and unprecedented position that “the BLM must not require compensatory mitigation from public land users.”<sup>377</sup> It juxtaposed this unusual interpretation with a statement that, “[i]n all instances, the BLM must refrain from authorizing any activity that causes unnecessary or undue degradation.”<sup>378</sup> Notwithstanding this duty, the memo announced that any compensatory mitigation must be proposed by a project proponent and must be voluntary. “To ensure compensatory mitigation is voluntary, the BLM must not explicitly or implicitly suggest that project approval is contingent upon proposing a ‘voluntary’ compensatory mitigation component or that doing so would reverse or avoid an adverse finding.”<sup>379</sup> The IM’s sparse legal analysis relied on Executive Order 13783, Secretarial Order 3349, and Secretarial Order 3360 as justification.<sup>380</sup> Without discussing the statutory language of FLPMA, the existing regulatory structure, or case law, the Instruction Memorandum took the unsupported position that “[w]hile FLPMA in some instances may be interpreted to authorize various forms of the mitigation hierarchy, such as avoidance and minimization, it cannot reasonably be read to allow BLM to require mandatory compensatory mitigation for potential temporary or permanent impacts from activities authorized on public lands.”<sup>381</sup>

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.enews.net/assets/2018/01/05/document\_gw\_04.pdf (this order also rescinded two Departmental Manuals, including Part 523, Chapter 1: Climate Change Policy (Dec. 20, 2012); Part 600, Chapter 6: Landscape-Scale Mitigation Policy (Oct. 23, 2015)).

<sup>376</sup> IM 2018-93, *supra* note 100 (this was later replaced by IM 2019-018 without substantive changes. For simplicity and consistency with other analytical discussions of the memo, this discussion uses the original title).

<sup>377</sup> *Id.* at 1 (Ironically, the Background section of Secretarial Order 3360 discussed the role of compensatory mitigation in a positive light, even though IM 2018-093 decried it as unauthorized. “Implemented properly and appropriately, compensatory mitigation can be an appropriate tool used to reduce or offset impacts from specific actions . . . The Department recognizes the appropriateness of compensatory mitigation in certain instances and the role it serves in the legal use and management of public lands under the jurisdiction of the Department.”).

<sup>378</sup> *Id.*

<sup>379</sup> *Id.* at 2.

<sup>380</sup> *Id.* at 3.

<sup>381</sup> *Id.*

2. *IM 2018-093 is not legally binding and does not deserve deference because it is contrary to precedent and the statutory language of FLPMA.*

The BLM's retreat from mitigation has been harshly criticized, and rightfully so. The inventive interpretations set forth in IM 2018-093 are not legally binding and do not deserve deference.<sup>382</sup> First, the DOI has clearly stated that instruction memorandums "do not have the force and effect of law."<sup>383</sup> Second, IM 2018-093 cannot impose a "binding norm" because it was not adopted through notice and comment rulemaking. Third, the legal interpretation set forth in IM 2018-093 finds no support in the words or structure of FLPMA.

Under the APA, an agency must generally use notice and comment procedures to make a rule.<sup>384</sup> Without following this procedure, statements of policy must leave officials "free to consider the individual facts of the various cases that arise."<sup>385</sup> Because IM 2018-093 was not adopted through the appropriate rulemaking procedures, it does not have the force of law and cannot restrict officials within the BLM from utilizing compensatory mitigation as a tool to achieve the multiple use balance.

The interpretation provided in IM 2018-93 also ignores precedent and jettisons years of hard work. Creative solutions to avoiding degradation have frequently been implemented by the BLM through compensatory mitigation. For example, in 1988, to conserve the desert tortoise, the BLM adopted a "no net loss" standard to govern compensatory mitigation for activities within the habitat of an unlisted species.<sup>386</sup> More recently, the BLM incorporated compensatory mitigation measures in the Desert Renewables Energy Conservation Plan (guiding the development of alternative energy resources in California), and the BLM's commitment to

<sup>382</sup> Pidot, *The BLM's Infirm Compensatory Mitigation Policy*, *supra* note 100, at 1, 18 (detailing the procedural irregularity of issuing such a sweeping change of legal interpretation through an instruction memorandum issued by an acting director, where a change in legal interpretation would normally be issued by the Solicitor in an M-Opinion).

<sup>383</sup> Robert S. Glenn, 124 Interior Dec. 109 (IBLA 1992) (noting that although agency employees are bound to follow agency manuals, "Instruction Memoranda and BLM Manual Provisions do not have the force and effect of law and are not binding on either this Board or the public at large." (quoting *Pamela S. Crocker-Davis*, 94 IBLA 328, 332 (1986)); *McMaster v. United States*, 731 F.3d 881 (9th Cir. 2013) (quoting Robert S. Glen).

<sup>384</sup> 5 U.S.C. § 553; *W. Watersheds Project v. Zinke*, 336 F. Supp. 3d 1204, 1233 (D. Mont. 2018).

<sup>385</sup> *W. Watersheds Project*, 336 F. Supp. 3d at 1233–34 (quoting *Mada-Luna v. Fitzpatrick*, 813 F. 2d 1006, 1012–14 (9th Cir. 1987)) (internal quotation marks omitted).

<sup>386</sup> See DESERT TORTOISE MGMT. OVERSIGHT GRP., BLM, FINAL REPORT: COMPENSATION FOR THE DESERT TORTOISE 1 (1991), <https://tortoise.org/conservation/hastey1991.pdf>.

implementing compensatory mitigation measures to address impacts to the greater sage-grouse provided justification for the FWS's decision not to "list" the greater sage-grouse as a threatened or endangered species.<sup>387</sup> Each of these programs relied upon compensatory mitigation to achieve the BLM's multiple use mandate.

Moreover, the rejection of compensatory mitigation finds no support in the words or the structure of FLPMA. "The implausibility of Congress's leaving a highly significant issue unaddressed . . . is assuredly one of the factors to be considered."<sup>388</sup> If Congress had meant to preclude compensatory mitigation, it would have said so. Instead, Congress entrusted the BLM with a vast and challenging duty without imposing specific limitations on the tools that the BLM could use.<sup>389</sup> Even the definition of multiple use grants broad leeway to the BLM to make "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 needs and conditions."<sup>390</sup> Additionally, in the development and revision of land-use plans, the BLM shall "consider the relative scarcity of the values involved and the availability of alternative means . . . and sites for realization of those values."<sup>391</sup> It is illogical that Congress would have assigned such a large task in such broad terms with such wide authority, but then silently restrict the BLM from finding creative ways to strike the right balance by offsetting harms through compensatory mitigation.<sup>392</sup> In other words, Congress does not "hide elephants in mouseholes."<sup>393</sup>

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<sup>387</sup> See generally BLM, DESERT RENEWABLE ENERGY CONSERVATION PLAN: LAND USE PLAN AMENDMENT (2016), [https://eplanning.blm.gov/epl-frontoffice/projects/lup/66459/133474/163144/DRECP\\_BLM\\_LUPA.pdf](https://eplanning.blm.gov/epl-frontoffice/projects/lup/66459/133474/163144/DRECP_BLM_LUPA.pdf) [<https://perma.cc/8B7A-3PJU>]; see Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to List Greater Sage-Grouse (*Centrocercus urophasianus*) as Endangered or Threatened Species, 80 Fed. Reg. 59,858, 59,880 (Oct. 2, 2015) (to be codified at 50 C.F.R. pt. 17).

<sup>388</sup> *Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 468–69 (2000).

<sup>389</sup> See, e.g., 43 U.S.C. §§ 1701(a)(8), (12) (instructing the BLM to balance multiple uses that include recognition of "the Nation's need for domestic sources of minerals, food, timber, and fiber from public lands" with the responsibility to manage those lands "in a manner that will protect the quality of scientific, scenic, ecological, environmental, air and atmospheric, water resource, and archeological values.").

<sup>390</sup> *Id.* § 1702(c).

<sup>391</sup> *Id.* § 1712(c)(6).

<sup>392</sup> See Pidot, *Compensatory Mitigation*, *supra* note 349, at 1088–89 (noting that when Congress enacted FLPMA, compensatory mitigation was a familiar land use planning tool for municipal planners and that the term "land use planning" was a term of art with general usage that incorporated the body of learning from which it was taken).

<sup>393</sup> *Am. Trucking Ass'ns*, 531 U.S. at 468.

In summary, the BLM's current policy rejecting compensatory mitigation lacks the force of law, jettisons decades of precedent, and contradicts a reasonable statutory interpretation.<sup>394</sup> Because it represents a policy choice, not a legal boundary of the BLM's authority, it should not detract from an informed discussion of the BLM's legal authority to require mitigation of GHG emissions.

## VI. WAYS TO INCORPORATE GHG MITIGATION AT EACH STAGE OF THE OIL AND GAS DEVELOPMENT PROCESS.

Oil and gas leasing decisions occur in three stages: (1) land use planning; (2) leasing; and (3) Application to Drill approval. Each stage triggers NEPA, and the BLM has authority to mitigate adverse environmental impacts at each stage.<sup>395</sup> By identifying GHG emissions as an adverse impact of oil and gas development, the BLM could use its existing regulatory authority to require that all new oil and gas development activity include a mitigation strategy for achieving net-zero emissions.

*A. Land Use Planning: New data regarding climate change provide changed circumstances that justify revising land use plans to include a net-zero stipulation on all new oil and gas leases.*

Oil and gas development decisions begin with land-use planning and preparing a resource management plan ("RMP"). Land-use planning is an ongoing statutory duty imposed on the BLM through FLPMA.<sup>396</sup> RMPs define allowable uses across a broad landscape that often exceeds a million acres or more, defining the desired future conditions for that landscape and the resources it contains.<sup>397</sup> This includes identifying which areas will be open to future oil and gas leasing and the land-use stipulations that will apply to those lands. Creating and revising an RMP is a major federal action that requires a NEPA analysis, which includes consideration of

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<sup>394</sup> See Pidot, *Compensatory Mitigation*, *supra* note 349, at 1062; *see generally* Pidot, *The BLM's Infirm Compensatory Mitigation Policy*, *supra* note 100.

<sup>395</sup> See *New Mexico ex rel. Richardson v. BLM*, 565 F.3d 683, 716 (10th Cir. 2009); *Pennaco Energy, Inc. v. U.S. Dept. of Interior*, 377 F.3d 1147, 1151 (10th Cir. 2004); *S. Utah Wilderness All. v. Norton*, 457 F. Supp. 2d 1253, 1255 (D. Utah 2006).

<sup>396</sup> 43 U.S.C. § 1732(a).

<sup>397</sup> *S. Utah Wilderness All.*, 457 F. Supp. 2d at 1255.

climate change.<sup>398</sup> The planning process—aided by NEPA—must “use and observe the principles of multiple use and sustained yield.”<sup>399</sup>

Congress anticipated that RMPs would, and should, change with the needs of future generations.<sup>400</sup> When appropriate, the BLM has a duty to revise land-use plans.<sup>401</sup> BLM regulations state that RMPs “shall” be amended when new information, such as monitoring and evaluation findings, new data, or a change in circumstances, becomes available.<sup>402</sup>

The BLM has already acknowledged that these statutory principles impose a responsibility on the agency to consider climate change as it relates to mineral development. Referring to coal, the BLM stated, “[c]onsideration of the implications of Federal coal leasing for climate change, as an extensively documented threat to the health and welfare of the American people, falls squarely within the factors to be considered in determining the public interest.”<sup>403</sup> This statement is equally applicable to other fossil fuels, including oil and gas. The BLM also recognized that the information related to climate change “is critical in the development of land-use plans where the Secretary must ‘weigh the long-term benefits to the public against short-term benefits.’”<sup>404</sup>

Since the BLM made those statements acknowledging the urgency of climate change, new reports have added additional urgency. For example,

<sup>398</sup> 43 C.F.R. § 1601.0-6 (2017); *id.* §§ 1610.5-5(a), (b).

<sup>399</sup> 43 U.S.C. § 1712(c)(4); *Or. Nat. Desert Ass’n v. BLM*, 625 F.3d 1092, 1094 (9th Cir. 2010); Squillace, *supra* note 195, at 429 (these principles include the obligation to “rely, to the extent that it is available, on the inventory of the public lands, their resources, and other values”; “use a systematic interdisciplinary approach”; “give priority to the designation and protection of areas of critical environmental concern”; “weigh long term benefits to the public against short-term benefits”; “provide for compliance with applicable pollution control laws”; and coordinate the land use inventory, planning, and management activities with the programs of other Federal departments and agencies and states, local, and tribal governments.).

<sup>400</sup> 43 U.S.C. § 1711(a) (the inventory upon which plans are based “shall be kept current so as to reflect changes in conditions”); *id.* § 1712(c)(4) (plans “shall . . . rely, to the extent it is available on the inventory of the public lands, their resources, and other values.”).

<sup>401</sup> *Id.* § 1712(a) (BLM must “develop, maintain, and, when appropriate revise land plans.”); *Or. Nat. Desert Ass’n*, 625 F.3d at 1096; *Norton v. S. Utah Wilderness All.*, 542 U.S. 55, 58–60 (2004) (describing the land use process).

<sup>402</sup> 43 C.F.R. § 1610.5-5 (2017) (“An amendment shall be initiated by the need to consider monitoring and evaluating findings, new data, new or revised policy, a change in circumstances, or a proposed action that may result in a change in the scope of resource uses or a change in the terms, conditions, and decisions of the approved plan.”).

<sup>403</sup> BLM, FEDERAL COAL PROGRAM PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT SCOPING REPORT ES-2 (2017), [https://www.eenews.net/assets/2017/01/11/document\\_gw\\_02.pdf](https://www.eenews.net/assets/2017/01/11/document_gw_02.pdf).

<sup>404</sup> *Id.*



the IPCC Special Report emphasizing the importance of limiting global warming to 1.5 °C and myriad scientific studies associated with that report have been released. Because many BLM plans date to the 1980s and 1990s,<sup>405</sup> current climate science reports constitute new data and a change in circumstances warranting a reassessment of land use decisions.<sup>406</sup> With this justification, the land-use plan revision process could be used to update or implement generally applicable land-use requirements and lease stipulations that better account for GHG emissions and climate change.<sup>407</sup>

More specifically, the BLM could amend existing land use plans to adopt a stipulation that would apply to all new oil and gas leases. Such a stipulation could impose GHG mitigation measures requiring that all new oil and gas leases achieve net-zero emissions. As the BLM recognized in the coal program Scoping Report, a net-zero requirement could be achieved by requiring the lessee to carry out or fund activities that proportionally offset emissions.<sup>408</sup> “This approach has been used under the Endangered Species Act and Clean Water Act as an efficient way to provide appropriate and measurable benefits to a resource that has been negatively affected through a proposed action.”<sup>409</sup>

Potential methods of achieving net-zero emissions are diverse. As a small, illustrative example, the lessee could implement methane reduction strategies such as plugging abandoned and orphaned wells sufficient to offset the anticipated CO<sub>2</sub>e emissions quantified during the NEPA process. So long as the methane reduction strategies implemented would not otherwise be required by law, the reduction in GHGs could be used to offset the emissions from the new well. The potential GHG reductions that can be achieved by plugging abandoned and orphaned wells are significant. The EPA estimates that methane emitted from abandoned oil and gas wells was responsible for seven MMTs of CO<sub>2</sub>e emissions, and that abandoned underground coal mines produced an additional 6.2 MMTs

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<sup>405</sup> See *supra* note 324 and accompanying text.

<sup>406</sup> 43 U.S.C. § 1712(c)(7).

<sup>407</sup> For example, in order to implement procedures that would protect the greater sage-grouse, the BLM revised or amended 98 land management plans to adopt sage grouse protections across the bird's range in ten Western states. To ensure that the mitigation measures incorporated into the land-use plans were implemented consistently, the BLM issued an Instructional Memorandum detailing implementation. See *Mont. Wildlife Fed'n v. Bernhart*, CV-18-69-GF-BMM, 2020 U.S. Dist. LEXIS 90571, at \*6-8 (D. Mont. May 22, 2020).

<sup>408</sup> BLM, FEDERAL COAL PROGRAM PEIS SCOPING REPORT, *supra* note 98, at 6–17 (“Alternatively, under this option, the BLM could approve transactions proposed by lessees that would achieve the desired outcome of compensatory mitigation, but for which projects were carried out by private businesses, non-profits, or state or local agencies.”).

<sup>409</sup> *Id.*

of CO<sub>2</sub>e emissions in 2018.<sup>410</sup> These emissions provide no benefit to society, but still exacerbate climate change. Leak reduction at unabandoned facilities may provide an additional opportunity for methane emission reductions and avoid the waste of financially valuable resources that return no revenue to the U.S. Treasury.

Alternatively, a lessee could offset emissions through investment in carbon sink strategies verified by a third party. Or a company could offset emissions by transitioning to an electric vehicle fleet. Although there are still challenges to be worked out, a market already exists to utilize third-party providers who verify and manage net-zero commitments.<sup>411</sup>

Individually revising every RMP to incorporate climate data would be painstakingly slow. Fortunately, that is not necessary because NEPA provides a procedural mechanism for analyzing this type of programmatic change. The most efficient way to implement a GHG mitigation strategy (applicable to all new oil and gas leasing decisions) would be to initiate a Programmatic EIS (“PEIS”) considering a nationwide strategy and identifying standardized, predictable ways of implementing and phasing in a net-zero emission standard on all new oil and gas development.<sup>412</sup> Conducting a nationwide PEIS would enable the BLM to accurately assess the reasonably foreseeable impacts from oil and gas development combined with other fossil fuel development activities nationally and globally. It would also allow the BLM to incorporate the most recent scientific observations regarding climate change, which indicate that every incremental increase in GHG emissions is significant in order to limit warming to 1.5 °C.<sup>413</sup> Moreover, a national PEIS is appropriate because climate change is a global problem. GHGs emitted regionally affect the whole nation equally.

In summary, the BLM has authority to impose a net-zero mitigation requirement on all new oil and gas development through its ongoing

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<sup>410</sup> EPA, FAST FACTS: 1990-2018 NATIONAL-LEVEL U.S. GREENHOUSE GAS INVENTORY (2020), <https://www.epa.gov/sites/production/files/2020-04/documents/fastfacts-1990-2018.pdf>.

<sup>411</sup> See generally Michael A. Mehling, *Governing Cooperative Approaches under the Paris Agreement*, 46 *ECOLOGY L.Q.* 765 (2019).

<sup>412</sup> MICHAEL BOOTS, WHITE HOUSE COUNCIL ON ENVTL. QUALITY, EFFECTIVE USE OF PROGRAMMATIC NEPA REVIEWS 10 (2014), <https://perma.cc/93PR-JTUU> (“A well-crafted programmatic NEPA review provides the basis for decisions to approve such broad or high-level decisions such as identifying geographically bounded areas within which future proposed activities can be taken or identifying broad mitigation and conservation measures that can be applied to subsequent tiered reviews.”).

<sup>413</sup> *Id.* (“One advantage of preparing a programmatic NEPA review for repetitive agency activities is that the programmatic NEPA review can provide a starting point for analyzing direct, indirect, and cumulative impacts.”).

statutory duty to update land use plans where new data or changed circumstances justify revision. The overwhelming scientific consensus regarding the urgency of reducing emissions constitutes changed circumstances that justify such a revision. The BLM could advance the substantive goals contained in FLPMA through the NEPA process by programmatically evaluating options to achieve net-zero emissions.

*B. Leasing: Even without amending RMPs, the BLM can impose a net-zero mitigation requirement as a stipulation attached to all new leases.*

The second stage of oil and gas development occurs when the BLM offers specific parcels of land for lease sale through a competitive or noncompetitive bidding process.<sup>414</sup> At the leasing stage, the BLM may include stipulations set forth in the RMP or attach new stipulations.<sup>415</sup> The leasing process tiers to the applicable RMP while affording an opportunity to take a closer look at specific areas and likely developments. A closer look may be necessary because RMPs can cover millions of acres and lack the resolution required to address discrete resources in specific areas.

Leasing decisions require a NEPA analysis because they represent an “irreversible and irretrievable commitment [] of resources.”<sup>416</sup> Even if an RMP authorizes a particular land use, the site-specific NEPA analysis provides an opportunity to assess whether the assumptions supporting the RMP decision remain valid and whether there are additional or new site-specific considerations that may have a significant effect on the environment. The pre-leasing NEPA process may identify mitigation

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<sup>414</sup> Bruce Pendery, *BLM's Retained Rights: How Requiring Environmental Protection Fulfills Oil and Gas Leasing Obligations*, 40 ENVTL. L. 599, 607–08 (2010) [hereinafter Pendery, *BLM's Retained Rights*].

<sup>415</sup> 43 C.F.R. § 3101.1–3 (“The authorized officer may require stipulations as conditions of lease issuance. Stipulations shall become part of the lease and shall supersede inconsistent provisions of the standard lease form.”).

<sup>416</sup> See, e.g., *Sierra Club v. Peterson*, 717 F.2d 1409, 1414 (D.C. Cir. 1983) (holding that issuing an oil and gas lease without a no surface occupancy stipulation “represents an irreversible and irretrievable commitment of resources,” which requires compliance with NEPA (quoting *Mobil Oil Corp. v. Fed. Trade Comm'n*, 562 F.2d 170, 173 (2d Cir. 1977))); see also Pendery, *BLM's Retained Rights*, *supra* note 414, at 609, 670–73 (discussing cases). However, some courts have accepted agency arguments that the environmental impacts at this stage are too speculative for a NEPA analysis. See, e.g., *WildEarth Guardians v. Jewell*, 738 F.3d 298, 310 (D.C. Cir. 2013) (“[P]rojects in their infancy have uncertain futures,” and thus, it would be unreasonable to require BLM to consider every proposed lease from its analysis of foreseeable future actions (quoting *Theodore Roosevelt Conservation P'ship v. Salazar*, 616 F.3d 497 (D.C. Cir. 2010))).

measures based on site-specific limitations or in response to monitoring and evaluation results that are part of an adaptive management strategy.<sup>417</sup> Mitigation measures developed during the pre-leasing NEPA process may be incorporated as lease stipulations and published prior to the lease sale.<sup>418</sup> Because the lease is a contract, the BLM has broad authority to define the terms of the contract prior to sale.<sup>419</sup>

Stipulations have been used in a wide variety of contexts to adjust the standard lease terms to avoid adverse effects related to energy development. A 2008 study conducted under the Energy Policy and Conservation Act found that of the 128 federal land use plans surveyed, there were approximately 3,125 individual stipulations in place.<sup>420</sup> The study reported that the reviewed stipulations “serve many purposes, ranging from the protection of environmental, social, historical, or cultural resources or values to the payment of rentals and royalties.”<sup>421</sup>

Rather than amending RMPs to require a net-zero lease stipulation, the BLM could use its regulatory authority over mineral lease operations to impose a standard stipulation that would apply nationally to all new leases. As discussed above, initiating a PEIS would provide an appropriate procedural mechanism for implementing this approach. Alternatively, the BLM could impose stipulations on a lease-by-lease basis. While a lease-by-lease approach would increase flexibility, it would also increase the burden posed by project-specific NEPA analyses, reduce certainty for oil and gas operators, and increase the risk of inconsistent stipulations between leases.

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<sup>417</sup> 43 C.F.R. § 46.145 (directing Interior Bureaus to use “adaptive management” as part of the NEPA process, especially “in circumstances where long-term impacts may be uncertain and future monitoring will be needed to make adjustments in subsequent implementation decisions.”).

<sup>418</sup> 43 U.S.C. § 3101.1–3 (“Any party submitting a bid . . . shall be deemed to have agreed to stipulations applicable to the specific parcel”).

<sup>419</sup> Pendery, *BLM’s Retained Rights*, *supra* note 414, at 642; Burger, *A Carbon Fee as Mitigation*, *supra* note 347, at 319–21.

<sup>420</sup> U.S. DEPT. OF INTERIOR ET AL., INVENTORY OF ONSHORE FEDERAL OIL AND NATURAL GAS RESOURCES AND RESTRICTIONS TO THEIR DEVELOPMENT 109 (2008) [https://www.blm.gov/sites/blm.gov/files/EPCA\\_III\\_Inventory\\_Onshore\\_Federal\\_Oil\\_Gas.pdf](https://www.blm.gov/sites/blm.gov/files/EPCA_III_Inventory_Onshore_Federal_Oil_Gas.pdf) [hereinafter BLM 2008 EPCA INVENTORY].

<sup>421</sup> *Id.* at xxviii.

*C. APD Approval: The BLM can require GHG mitigation through Conditions of Approval and Best Management Practices.*

At the third stage, the lessee submits an Application for a Permit to Drill (“APD”), which is a site-specific drilling and reclamation plan that the BLM must approve before operations can commence. Consistent with the plain language of the standard lease form, the “[l]essee must conduct operations in a manner that minimizes adverse impacts to the land, air, and water, to cultural, biological, visual, and other resources, and to other land uses or users.”<sup>422</sup> As the lessor, the BLM retains extensive authority to require that mitigation measures, best practices, and other “reasonable measures deemed necessary” be incorporated into the drilling plan as a Condition of Approval (“COA”) for the APD.<sup>423</sup>

The BLM has used this authority to incorporate best practices and mitigation measures as part of the drilling plan, even if those practices were not anticipated at the time of the lease sale.<sup>424</sup> For example, a 2008 study summarized:

Older leases issued before the effective date of the relevant plans may not be subject to stipulations from the current land use planning document. It is reasonable, however, to consider the plan stipulations as applicable. Environmental conditions that necessitate stipulations often are the driver for COAs that are attached to the drilling permits on older leases.<sup>425</sup>

The BLM report goes on to explain that COAs enable the surface managing agency to achieve the necessary environmental protection, even at the APD stage,<sup>426</sup> listing multiple adverse effects that may be mitigated through COAs, including air quality impacts, visual impacts, noise, and suburban encroachment.<sup>427</sup>

A lessee challenging mitigation measures imposed as a COA at the APD stage must show by a preponderance of the evidence that BLM's

<sup>422</sup> OFFER TO LEASE AND LEASE FOR OIL AND GAS, *supra* note 361, at 3.

<sup>423</sup> *Id.* § 6.

<sup>424</sup> Yates Petroleum Inc., 176 Interior Dec. 144, 154 (IBLA 2008) (upholding mitigation measures imposed as COAs that were more stringent than standards in the RMP); BUREAU OF LAND MGMT, SURFACE OPERATING STANDARDS AND GUIDELINES FOR OIL AND GAS EXPLORATION AND DEVELOPMENT: THE GOLD BOOK 3 (4th ed. 2007) (“Constraints may result from lease stipulations, the surface management agency’s review and environmental analysis of the proposed operations, Notices to Lessees, Onshore Orders, or regulations.”).

<sup>425</sup> BLM 2008 EPCA INVENTORY, *supra* note 420, at 12.

<sup>426</sup> *Id.*

<sup>427</sup> *Id.*

opinion requiring the mitigation measures is erroneous.<sup>428</sup> This standard affords the BLM considerable discretion to impose mitigation measures at the APD stage based on the best available scientific evidence. For example, in *Yates Petroleum*, the lessee challenged mitigation measures that were more stringent than those set forth in the RMP, as well as the BLM's decision to deny permits for five wells.<sup>429</sup> In upholding the BLM's decisions, the Interior Board of Land Appeals ("IBLA") emphasized the BLM's regulatory and statutory authority to minimize adverse impacts on other resource values.<sup>430</sup> The court reminded Yates that "[a] lessee's right to use the leased lands is subject to 'such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses, or users not addressed in the lease stipulations at the time operations are proposed.'" <sup>431</sup> Applying this standard, the Board gave deference to the BLM's imposition of mitigation measures and denial of APDs as "reasonable measures required by the authorized officer to minimize adverse impacts to a resource value not addressed in the lease stipulations at the time operations were proposed."<sup>432</sup> The imposition of mitigation measures to address GHG emissions is equally reasonable and enforceable.

Additionally, the IBLA requires the BLM to incorporate new science into mitigation measures on oil and gas leases, even where the RMP has not yet been revised. For example, in *Maycock, Powder River Basin Resource Council, Biodiversity Conservation Alliance*, the IBLA set aside the approval of eighty-two APDs and remanded the decision to the BLM for reconsideration of scientific studies showing that the sage grouse mitigation measures identified in the RMP were "not as effective as BLM

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<sup>428</sup> *Yates Petroleum Inc.*, 176 Interior Dec. 144, 154 (IBLA 2008); *see also* *Grynberg Petroleum*, 152 Interior Dec. 300, 307 (IBLA 2000) (holding that a lessee challenging a remedial requirement imposed as a Condition of Approval at the plugging and abandonment stage must show by a preponderance of the evidence that such a requirement is excessive).

<sup>429</sup> *Yates Petroleum Inc.*, 176 Interior Dec. 144, 152, 156 (IBLA 2008).

<sup>430</sup> *Id.* at 155 ("The Secretary has general statutory authority to condition post-lease approvals in accordance with section 17(g) of the Mineral Leasing Act of 1920, as amended by section 5102(g) of the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (FOOGLRA), 30 U.S.C. § 226(g)(2000) (determine actions required 'in the interest of conservation of the surface resources'), section 302(a) of the Federal Land Policy and Management Act of 1976 (FLPMA), 43 U.S.C. § 1732(a) (2000) (manage the public lands under principles of multiple use and sustained yield, in accordance with land-use plans), and section 301(b) of FLPMA, 43 U.S.C. § 1732(b) (2000) ("take any action necessary to prevent unnecessary or undue degradation of the lands.")).

<sup>431</sup> *Id.* (quoting 43 C.F.R. § 3101.1-2).

<sup>432</sup> *Id.* at 157-58; *see also* *Grynberg Petroleum*, 152 Interior Dec. 300 (IBLA 2000).

contemplated they would be.”<sup>433</sup> Since the issuance of the RMP in 2001, scientific studies showed that assumptions made in the RMP regarding sage grouse brooding behavior were inaccurate.<sup>434</sup> Although the EA acknowledged the studies, the BLM relied upon the mitigation measures identified in the RMP instead of imposing more stringent mitigation measures consistent with the new science.<sup>435</sup> The IBLA found that the BLM’s reliance on the default mitigation measures prescribed in the RMP and the Powder River Basin EIS was arbitrary and capricious.<sup>436</sup> Additionally, the Board found no reason for the BLM to rely on the existing RMP and FEIS until further research could be accomplished.<sup>437</sup> Declining to defer to the BLM’s discretion, the IBLA pointed out that there was no “difference of opinion between experts” where all the “more recent scientific studies uniformly indicate that the current measures are less effective than BLM believed they would be.”<sup>438</sup> In a related case, the IBLA upheld the BLM’s authority to impose more stringent mitigation measures than identified in the RMP and the FEIS based on the results of the new research.<sup>439</sup>

These holdings are particularly relevant to climate change, where there is also no difference of opinion among experts. All recent scientific studies uniformly indicate that increasing GHG emissions will exacerbate climate change and result in resource degradation unanticipated by most RMPs. Accordingly, relying on existing RMPs to avoid the imposition of GHG mitigation measures at the APD stage is potentially arbitrary and capricious and contrary to the BLM’s statutory duty to prevent permanent impairment while balancing multiple uses. Requiring existing lessees to mitigate their impacts to the atmosphere and climate therefore fits squarely within the BLM’s existing authority.

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<sup>433</sup> William P. Maycock, Powder River Basin Resource Council, Biodiversity Conservation Alliance, 177 Interior Dec. 1, 15, 28 (IBLA 2009).

<sup>434</sup> *Id.* at 16–17.

<sup>435</sup> *Id.* at 17.

<sup>436</sup> *Id.* at 19 (“It is contradictory for the BLM to rely solely on those mitigation measures in issuing an EA and FONSI at the same time that it acknowledges the validity of more recent research that demonstrates that those mitigation measures are not as effective as originally anticipated.”).

<sup>437</sup> *Id.* (“Nor can BLM avoid the problem by purporting to rely on the 1985 Buffalo RMP and the 2003 PRB FEIS and ROD until further research can provide a more accurate answer regarding the appropriate distance between disruptive activities and sage grouse lek and nesting and brood-rearing areas . . . BLM has not shown any ‘conflicting’ scientific research.”).

<sup>438</sup> *Id.*

<sup>439</sup> *See* Yates Petroleum Corp., 176 Interior Dec. 144 (IBLA 2008).

*1. Using NEPA at the APD stage to implement GHG mitigation requirements.*

The NEPA process, which is triggered at the APD stage, can also provide a forum to identify and justify the reasonableness of mitigation measures as COAs; the opportunity afforded by NEPA should not be avoided.<sup>440</sup> If the appropriate analysis has been done earlier, this final and most granular level of NEPA review is often handled through a Categorical Exclusion that tiers to the RMP and leasing analysis.<sup>441</sup> If the earlier analysis avoided a meaningful assessment of GHG emissions and climate change impacts, further analysis may be required. According to BLM regulations:

Before approving any Application for Permit to Drill . . . [the BLM] shall prepare an environmental record of review or an environmental assessment as appropriate. These environmental documents will be used in determining whether or not an environmental impact statement is required and in determining any appropriate terms and conditions of approval of the submitted plan.<sup>442</sup>

Moreover, under the DOI's regulations, "any action that is normally categorically excluded must be evaluated to determine whether it meets any of the extraordinary circumstances in section 46.215; if it does, further analysis and environmental documents must be prepared."<sup>443</sup> Among the twelve categories of defined extraordinary circumstances are actions that "have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects."<sup>444</sup> Thus, even though APD applications may be numerous, they still require a meaningful environmental assessment under BLM regulations. Where the tiered document lacks an updated climate change assessment, a lack of significant impact cannot be presumed.

Both industry and the BLM often cite the BLM's regulatory authority to impose mitigation measures at the APD stage in order to avoid a thorough NEPA analysis at the leasing stage.<sup>445</sup> Especially where a

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<sup>440</sup> 43 C.F.R. § 3162.5-1(a) (2019).

<sup>441</sup> See *supra* note 242 and accompanying text.

<sup>442</sup> 43 C.F.R. § 3162.5-1(a).

<sup>443</sup> *Id.* § 46.205(c)(1).

<sup>444</sup> *Id.* § 46.215(f).

<sup>445</sup> See, e.g., *San Juan Citizens All. v. U.S. BLM*, 326 F. Supp. 3d 1227, 1245–46 (D.N.M. 2018); see also *Park County Res. Council Inc. v. U.S. Dep't of Agric.*, 817 F.2d 609, 622 (10th Cir. 1987) (holding that the BLM was not required to address potential mitigation measures of lease stipulations at the leasing stage because "[i]n order to work the lease, the lessee must submit site-specific proposals to the Forest Service and BLM



climate change analysis was deferred until the APD stage, it becomes necessary and appropriate to use the NEPA process at the APD stage to explore cumulative effects and require mitigation. Otherwise, alternatives to prevent unnecessary or undue degradation caused by exacerbating climate change will have been foreclosed without discussion. In a similar context, a federal court in Colorado rejected the BLM's claim that it was "too late" to analyze and mitigate GHG emissions after having delayed a thorough NEPA analysis at an earlier stage of the leasing process. "Under this reasoning, it could theoretically reward agencies for skirting NEPA requirements in prior stages of oil and gas development, which does not align with the informed decision-making goals of NEPA."<sup>446</sup>

In order to justify a deferred environmental analysis at the leasing stage, the BLM itself has argued that it is not "too late" to impose stringent mitigation requirements at the APD stage.<sup>447</sup> For example, in a case before the IBLA, a homeowners association challenged the BLM's FONSI associated with a lease sale.<sup>448</sup> The homeowners argued that the BLM had not undertaken sufficient analysis to know whether it was safe to allow development of the oil and gas resources to proceed upon issuance of the lease.<sup>449</sup> Specifically, the homeowners argued that the BLM had not sufficiently analyzed the risk of emitting hydrogen sulfide gas, which had been released from several nearby wells.<sup>450</sup> The BLM took the position that it had ample authority to require mitigation at the APD stage and that the reserved authority would be sufficient to offset any potentially significant environmental effects. The IBLA accepted the BLM's

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who can then modify those plans to address any number of environmental considerations" and "each action is subject to continuing NEPA review"), *overruled on other grounds by* Village of Los Ranchos de Albuquerque v. Marsh, 956 F.2d 970, 972 (10th Cir. 1992) (en banc).

<sup>446</sup> Citizens for a Healthy Cmty. v. U.S. BLM, 377 F. Supp. 3d 1223, 1237 (D. Colo. 2019) (holding that because downstream emissions were not considered at the leasing stage, the "earliest possible time" mandated by NEPA required that they be considered at the MDP stage. "Since it did not happen before, this stage of the development process would be the earliest possible time.").

<sup>447</sup> See, e.g., Duna Vista Resorts, 187 Interior Dec. 43 (IBLA 2016) (arguing that it was appropriate to issue a FONSI at the leasing stage because the BLM had authority to mitigate all potential environmental effects by imposing COAs at the APD stage, including dictating which formation the lessee could drill into); see also BLM, SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT FOR THE MAY 2015–AUGUST 2016 SOLD AND ISSUED LEASES (2019),

[https://eplanning.blm.gov/public\\_projects/nepa/121368/170685/207328/20190412.WYSu pplementalEA.WEGvZinke.Final.pdf](https://eplanning.blm.gov/public_projects/nepa/121368/170685/207328/20190412.WYSu pplementalEA.WEGvZinke.Final.pdf) [hereinafter BLM, EA FOR SOLD WYOMING LEASES].

<sup>448</sup> See Duna Vista Resorts, 187 Interior Dec. 43 (IBLA 2016).

<sup>449</sup> *Id.* at 46.

<sup>450</sup> *Id.* at 50–51.

argument that it appropriately deferred analysis of this issue. The holding relied on the BLM's authority to mitigate the risk at the APD stage by precluding the lessees from recovering oil and gas from the problematic formation. "Further, were BLM to determine that such effects were unacceptable, even given the imposition of appropriate mitigation measures, it could, at that time, preclude the recovery of any oil and gas from that formation."<sup>451</sup>

In sum, the BLM itself argues that its authority to impose mitigation measures at the APD stage is adequate to allow imposition of new conditions sufficient to prevent environmental and public health injuries or even preclude development from a particular formation entirely.

*2. The BLM has already imposed GHG mitigation measures at the APD stage, demonstrating its authority to require more meaningful mitigation at this stage.*

Existing practices demonstrate the BLM's authority to require GHG mitigation at the APD stage. BLM field offices have already imposed GHG mitigation through Best Management Practices ("BMPs") or COAs at the APD stage. For example, the Colorado State Office in 2013 published a document identifying BMPs related to emissions, including GHG emissions.<sup>452</sup> The document described the "process and strategies the BLM will use when authorizing activities that have the potential to adversely impact air quality."<sup>453</sup> They began by recognizing that "[t]he BLM has the authority and responsibility under [FLPMA] to manage public lands in a manner that will protect the quality of air and atmospheric values."<sup>454</sup> To accomplish this, "[t]he BLM will request the proponent of an oil and gas development activity . . . to submit a comprehensive inventory of anticipated direct and indirect emissions . . . including fugitive emissions and greenhouse gas emissions."<sup>455</sup> Using this inventory, where the project's emissions are potentially significant, the operator's plans "shall include a detailed description of operator

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<sup>451</sup> *Id.* at 51.

<sup>452</sup> COLORADO BUREAU OF LAND MANAGEMENT, COMPREHENSIVE AIR RESOURCE PROTECTION PROTOCOL (CARPP) (Sept. 2013) [hereinafter CARPP STANDARDS].

<sup>453</sup> *Id.* at 3; *see also id.* at 9 ("Appropriate emission reduction measures are best identified and required at the project authorization stage, when the temporal and spatial characteristics and technological specifications of the proposed action have been defined. The project-specific information available at that stage allows for the development of an emissions inventory and impact analysis that can be used to identify effective mitigation options for predicted adverse impacts.").

<sup>454</sup> *Id.*

<sup>455</sup> *Id.* at 6 (emphasis added).

committed measures to reduce project related pollutant emissions, including greenhouse gases.”<sup>456</sup>

The BLM recently reaffirmed its authority to mitigate GHG emissions at the APD stage in response to a remand from the federal district court for the District of Columbia. In *WildEarth Guardians v. Zinke*, the court concluded that the “BLM failed to take a ‘hard look’ at GHG emissions” arising from 282 parcels leased in a Wyoming oil and gas lease sale.<sup>457</sup> In response, the BLM conducted an EA “to comply with the court’s decision.”<sup>458</sup> In the EA, the BLM took the position that “[t]he sale of parcels and issuance of oil and gas leases is an administrative action, without direct impacts to surface resources such as habitat, and watershed resources.”<sup>459</sup> The BLM asserted that it conducts additional documentation and technical analysis prior to issuing a permit for site-specific lease operations.<sup>460</sup> In other words, the BLM explicitly identified the APD stage, rather than the lease stage, as the appropriate stage to impose GHG mitigation strategies. Specific to mitigation of impacts from GHG emissions, the BLM 2019 Wyoming Lease Sale EA identified four sources of authority—and effective mechanisms—to mitigate GHG emissions at the APD stage: (1) COAs;<sup>461</sup> (2) BMPs;<sup>462</sup> (3) applicant-committed measures;<sup>463</sup> and (4) requirements incorporated into a state air quality permit.<sup>464</sup> Each one of these avenues could be utilized on other projects.

In summary, the BLM could impose a net-zero requirement on existing leases at the APD stage. Imposing this requirement would be consistent with scientific consensus and would fulfill the BLM’s duty to avoid permanent impairment of other resources, including the atmosphere.

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<sup>456</sup> *Id.* at 9.

<sup>457</sup> *WildEarth Guardians v. Zinke*, 368 F. Supp. 3d 41, 85 (D.D.C. 2019).

<sup>458</sup> BLM, EA FOR SOLD WYOMING LEASES, *supra* note 447, at 7 (articulating the “Purpose and Need”).

<sup>459</sup> *Id.* at 26.

<sup>460</sup> *Id.*

<sup>461</sup> *Id.* (“Aside from the protection measures required under the lease stipulations or measures that may be voluntarily committed to by a project proponent, additional measures may be required as conditions of approval (COAs) attached to BLM’s authorization . . . based on technical and site specific NEPA review.”) (citation omitted).

<sup>462</sup> *Id.* at 35 (“In carrying out its responsibilities, BLM has developed BMPs designed to reduce emissions from field production and operations. Analysis and approval of future development on the lease parcels may include application of BMPs within BLM’s authority, as Conditions of Approval (COAs), to reduce or mitigate GHG emissions.”).

<sup>463</sup> *Id.* (explaining that additional GHG mitigation measures could be incorporated as “applicant-committed measures”).

<sup>464</sup> *Id.* (explaining that additional GHG mitigation measures could be “added to necessary State of Wyoming air quality permits”).

The NEPA process can be used to provide further justification for the reasonableness of imposing a net-zero requirement at the APD stage. Moreover, it is not too late to impose mitigation measures at the APD stage, especially where the BLM and industry shortchanged the NEPA analysis at the leasing stage, promising to evaluate mitigation measures at the APD stage. Finally, the BLM has already acknowledged its authority to impose GHG mitigation measures as BMPs or as COAs and it is not unreasonable to expand this practice to impose a standardized net-zero requirement that is applicable to all new oil and gas wells.

## VII. CONCLUSION: REQUIRING THAT ALL NEW OIL AND GAS ACTIVITY ACHIEVES NET-ZERO GHG EMISSIONS IS A REASONABLE OPERATIONAL REQUIREMENT AND NET-ZERO POLICIES HAVE PRECEDENT.

Climate change is creating a “new normal” requiring a fundamental reassessment of risks and asset management. Entrusted with managing roughly a quarter billion acres of land surface and the rich resources those lands contain—range, water, wildlife, timber, cultural resources, scenic and recreational resources, and more, the BLM sits at the crossroads of this transition. Scientific consensus indicates that the climate has already warmed 1 °C, resulting in observed ecological and systemic changes that caution against allowing warming to exceed 1.5 °C. The current emissions trajectory will exacerbate climate change, with forecasted warming of at least 3 °C by the end of the century. Reversing this trend and limiting global warming to 1.5 °C requires adhering to a carbon budget that will achieve a forty-five percent decline in global anthropogenic emissions by 2030 and reach net-zero no later than 2050. At this late stage in the game, every incremental increase in GHG emissions has cumulatively significant environmental consequences.

Avoiding the irreversible and catastrophic results of warming above 1.5 °C requires immediate reductions in GHG emissions sufficient to achieve economy-wide net-zero emissions by 2050.<sup>465</sup> In response to this scientifically derived prescription, many countries and large corporations have already adopted a net-zero target. BP Oil’s CEO, Bernard Looney, declined to mince words: “Let me be very clear today . . . The world does have a carbon budget. It is finite and it is running out fast, and we need a

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<sup>465</sup> IPCC 1.5° Special Report, Summary for Policy Makers, *supra* note 6, at 14.

rapid transition to net-zero.”<sup>466</sup> Other large emitters, like Duke Energy and Dominion Energy, are also pledging to become net-zero by 2050.<sup>467</sup> Amazon has taken a leadership role by pledging to be net-zero by 2040, ten years in advance of the schedule set by the Paris Agreement.<sup>468</sup> Similarly, the House Select Committee on the Climate Crisis established a goal of reaching net-zero economy-wide by 2050.<sup>469</sup> Additionally, the Biden-Harris plan includes a commitment to “ensure the U.S. achieves a 100% clean energy economy and reaches net-zero emissions no later than 2050.”<sup>470</sup> Adopting a net-zero mitigation standard for all new oil and gas development activity would be consistent with these trends.

A net-zero requirement would also fulfill the BLM's responsibility to maximize coordination of its land use plans with management programs of other federal departments and agencies, and of the states and local governments.<sup>471</sup> FLPMA requires that the BLM coordinate land use planning and management “with the land use planning and management programs . . . of the States and local governments within which the lands are located,” and that the BLM's “[l]and use plans . . . shall be consistent with State and local plans to the maximum extent . . . consistent with Federal law and the purposes of this Act.”<sup>472</sup> The United States previously made a commitment, consistent with scientific consensus, to significantly

<sup>466</sup> Robert Perkins, *BP Sets Target for 'Net-zero' Carbon Footprint by 2050*, S&P GLOBAL PLATTS (Feb. 12, 2020, 12:04 UTC), <https://www.spglobal.com/platts/en/market-insights/latest-news/coal/021220-bp-sets-target-for-net-zero-carbon-footprint-by-2050>.

<sup>467</sup> Dominion Energy, *Dominion Energy Sets New Goal of Net Zero Emissions by 2050* (Feb. 12, 2020), <https://news.dominionenergy.com/2020-02-11-Dominion-Energy-Sets-New-Goal-of-Net-Zero-Emissions-by-2050> (Thomas F. Farrell, II, chairman, president and CEO said, “Our employees have always been problem-solvers in the work we do for our customers. I am confident we can use this same mindset to help solve this challenge and leave the world a better place for future generations.”); Duke Energy, *Duke Energy Aims to Achieve Net Zero Carbon Emissions by 2050* (Sept. 17, 2019), <https://news.duke-energy.com/releases/duke-energy-aims-to-achieve-net-zero-carbon-emissions-by-2050> (“The company is also accelerating its near-term goal by cutting its carbon dioxide emission by half or more from 2005 levels by 2030.”).

<sup>468</sup> Joanna G. Ramey, *Jeff Bezos Details Amazon's Net-Zero Carbon Emissions 2040 Goal*, FORTUNE (Sept. 19, 2019, 2:32 PM), <https://fortune.com/2019/09/19/jeff-bezos-details-amazons-net-zero-carbon-emissions-2040-goals-climate-change/>.

<sup>469</sup> STAFF OF H. SELECT COMM. ON THE CLIMATE CRISIS, 116<sup>TH</sup> CONG., REP. ON SOLVING THE CLIMATE CRISIS: THE CONG. ACTION PLAN FOR A CLEAN ENERGY ECONOMY AND A HEALTHY, RESILIENT, AND JUST AMERICA 3 (Comm. Print 2020).

<sup>470</sup> *The Biden Plan for a Clean Energy Revolution and Environmental Justice*, BIDEN HARRIS, <https://joebiden.com/climate-plan/> (last visited Aug. 17, 2020).

<sup>471</sup> 43 U.S.C. § 1712(c)(8)–(9).

<sup>472</sup> *Id.* § 1712(c)(9).

reduce emissions.<sup>473</sup> Despite the Trump administration's hostility to the United Nations Framework Convention on Climate Change,<sup>474</sup> numerous state and local municipalities have committed to uphold the United States' commitments under the Paris Accord.<sup>475</sup> Twenty-five states have joined the United States Climate Alliance, a bipartisan coalition of twenty-five governors committed to achieving the goals of the Paris Agreement.<sup>476</sup> The Climate Alliance recognizes "that climate change presents a serious threat to the environment and our residents, communities, and economies."<sup>477</sup> Alliance members are committed to "pursuing aggressive climate action to make progress" toward the goals of the Paris Agreement.<sup>478</sup> Among the Alliance members are states with significant fossil fuel resources managed by the BLM, including Colorado and New Mexico.<sup>479</sup> In addition to these states, 466 mayors, representing seventy-four million Americans, have also committed to uphold the commitments and goals of the Paris Agreement.<sup>480</sup> A net-zero requirement for new

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<sup>473</sup> The United States submitted a plan to reduce economy-wide GHG emissions by twenty-six to twenty-eight percent below 2005 levels by 2025, which would put the country on a trajectory to achieve emission reductions of eighty percent or more by 2050. THE WHITE HOUSE, U.S. MID-CENTURY STRATEGY FOR DEEP DECARBONIZATION 6 (2016); U.S. Cover Note, INDC and Accompanying Information, *U.N. Framework Convention on Climate Change* (Mar. 9, 2016), available at <https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/United%20States%20of%20America/1/U.S.%20Cover%20Note%20INDC%20and%20Accompanying%20Information.pdf>.

<sup>474</sup> See Lisa Friedman, *Trump Serves Notice to Quit Paris Climate Agreement*, N.Y. TIMES (Nov. 4, 2019), <https://www.nytimes.com/2019/11/04/climate/trump-paris-agreement-climate.html>.

<sup>475</sup> Julia Rosen, *Cities, States and Companies Vow to Meet U.S. Climate Goals Without Trump. Can They?*, L.A. TIMES (Nov. 4, 2019, 1:51 PM), <https://www.latimes.com/environment/story/2019-11-04/cities-states-companies-us-climate-goals-trump> ("More than 400 city leaders have joined the Climate Mayors association, and 25 states and territories have joined the U.S. Climate Alliance. Both organizations have vowed to uphold the country's Paris pledge.").

<sup>476</sup> See *Governors*, U.S. CLIMATE ALLIANCE, <http://www.usclimatealliance.org/governors-1> (last visited July 12, 2020).

<sup>477</sup> See *Alliance Principles*, U.S. CLIMATE ALLIANCE, <http://www.usclimatealliance.org/alliance-principles> (last visited July 12, 2020).

<sup>478</sup> *Id.*

<sup>479</sup> *About Us*, U.S. CLIMATE ALLIANCE, <http://www.usclimatealliance.org/about-us> (last visited July 12, 2020) (listing the following states as Alliance members: California, Colorado, Connecticut, Delaware, Hawaii, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, Nevada, New Jersey, New Mexico, New York, North Carolina, Oregon, Pennsylvania, Puerto Rico, Rhode Island, Vermont, Virginia, Washington, Wisconsin).

<sup>480</sup> *468 US Climate Mayors Commit to Adopt, Honor and Uphold Paris Climate Agreement Goals*, CLIMATE MAYORS, <http://climatemayors.org/actions/paris-climate-agreement/> (last updated Nov. 27, 2019) (publishing a statement signed by 466 mayors

development would be consistent with the BLM's statutory duty to coordinate its land use decisions with these states' commitments to address climate change.

There is also substantial precedent for adopting a net-zero policy, and for including offsetting mitigation as a tool to achieve net-zero emissions. For example, on November 3, 2015, President Obama issued a Presidential Memorandum directing federal agencies to develop mitigation policies that "establish a net benefit goal or, at a minimum, a no net loss goal for natural resources the agency manages that are important, scarce, or sensitive, or wherever doing so is consistent with agency mission and established natural resource objectives."<sup>481</sup> The Environmental Protection Agency created the Net Zero Initiative to assist communities and the military in achieving net-zero goals in energy, waste, and water use.<sup>482</sup> Through this initiative, the EPA has signed Memorandums of Understanding with the U.S. Army and the Department of Defense to advance the sustainability goals of achieving net-zero energy, water, and waste in military installations.<sup>483</sup> A net-zero policy is also consistent with the BLM's landscape-scale approach to mitigation and land use decisions and with policies adopted by the BLM's sister agencies within the Department of the Interior. For example, the Fish and Wildlife Service explicitly adopted a "no net loss" strategy in its definition of landscape-scale mitigation.<sup>484</sup> A no net loss policy has been applied to wetlands, and that policy has remained in place for decades through multiple administrations, Republican and Democrat alike.<sup>485</sup> Thus, net-zero

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committing to increase efforts to cut greenhouse gas emissions in order to meet the 1.5 °C target).

<sup>481</sup> Memorandum on Mitigating Impacts on Natural Resources from Development and Encouraging related Private Investment, Daily Comp. Pres. Doc. 1, at 3 (Nov. 3, 2015) (withdrawn by E.O. 13783, *Energy Independence*, *supra* note 13, at 16094).

<sup>482</sup> *Promoting Sustainability Through Net Zero Strategies*, EPA, <https://www.epa.gov/water-research/promoting-sustainability-through-net-zero-strategies> (last updated June 5, 2018).

<sup>483</sup> EPA, PROMOTING SUSTAINABILITY AND RESILIENCE THROUGH NET ZERO AND NET POSITIVE TECHNOLOGIES AND APPROACHES 1, [https://www.epa.gov/sites/production/files/2015-09/documents/net\\_zero\\_fact\\_sheet\\_9\\_14.pdf](https://www.epa.gov/sites/production/files/2015-09/documents/net_zero_fact_sheet_9_14.pdf) (last visited Aug. 17, 2020).

<sup>484</sup> U.S. Fish and Wildlife Service Mitigation Policy, 81 Fed. Reg. 83440 (Nov. 21, 2016) (adopting a mitigation policy that "provides a framework for applying a landscape-scale approach to achieve, through application of the mitigation hierarchy, a net gain in conservation outcomes, or at a minimum, no net loss of resources and their values, services, and functions resulting from proposed actions.") (withdrawn by 83 Fed. Reg. 36,472 (July 30, 2018)).

<sup>485</sup> *See* Presidential Statement on Signing the North American Wetlands Conservation Act, 1989 Pub. Papers 1699 (Dec. 13, 1989); *see also* George H. W. Bush, National Wetland Mitigation Action Plan (Dec. 24, 2002), [https://www.epa.gov/sites/production/files/2015-08/documents/national\\_wetlands\\_miti](https://www.epa.gov/sites/production/files/2015-08/documents/national_wetlands_miti)

policies have been successfully incorporated into BLM policies and permitting decisions in the past. Adopting a net-zero requirement for all new oil and gas development activity would be consistent with scientific consensus regarding the urgency of climate change, and it would be in line with policies adopted by other federal agencies responding to the risks of climate change.

Within the existing legal framework, the BLM has authority to achieve net-zero emissions on all new oil and gas development activity, and it can do so by imposing mitigation requirements at each stage of the development process. This approach would be consistent with the BLM's statutory duty to manage federal lands according to a standard of care, with a multi-generation time horizon, and without permanent impairment of the nation's ecological resources, including the atmosphere. Continuing to ignore climate change in its permitting decisions puts almost every resource under the BLM's care at risk and fails to recognize what Larry Fink cautioned investors: "Climate risk is investment risk."

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gation\_action\_plan\_0.pdf; EPA, CLEAN WATER ACTION PLAN: RESTORING AND PROTECTING AMERICA'S WATERS 40 (1998) (proposing that the Clinton administration increase acreage of wetlands); Coastal Wetlands Planning, Protection and Restoration Act, Pub. L. No. 101-646, § 304, 104 Stat. 4778, 4784 (Nov. 29, 1990) (including a no net loss of wetlands pledge); Water Resources Development Act of 1990, Pub. L. No. 101-640, § 307, 101 Stat. 4604, 4635 (including a no net loss of wetlands pledge); EPA & Dep't of the Army, Memorandum of Agreement Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines 2 (1990); Correction to Memorandum of Agreement, Clean Water Act Section 404(b)(1) Guidelines, 55 Fed. Reg. 48,9210 (Mar. 12, 1990) (clarifying wetlands not net loss policy).