Notes & Comments

The Waikato-Tainui Settlement Act: A New High-Water Mark for Natural Resources Co-management

Jeremy Baker*

"[I]f we care for the River,
the River will continue to sustain the people."
—The Waikato-Tainui Raupatu Claims (Waikato River)
Settlement Act 2010

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* Jeremy Baker is a 2013 J.D. candidate at the University of Colorado Law School.

I. INTRODUCTION

Adaptive co-management, an approach to environmental and natural resource management that enables stakeholders to share management responsibility and to learn from their actions, is a promising innovation in managing natural resources under conditions of uncertainty and complexity.[1] While not a panacea, adaptive co-management does hold promise as a means of moving past conflict and towards developing more effective and resilient methods of natural resource management, particularly in resource disputes involving indigenous peoples.

New Zealand's Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010[2] ("Settlement Act") outlines a bold vision and strategy for the Waikato River that embodies adaptive co-management. The Settlement Act creates a robust co-governance and co-management regime that cuts across all levels of government and attempts to move beyond decades of dispute by providing a meaningful role for local Maori tribes in the management of this important resource. It also provides statutory mandates for resource monitoring and reporting, and for periodic review and adjustment of management policies based on results and observations. Given the Settlement Act's groundbreaking provisions, governments and scholars around the world are closely monitoring its implementation, and "[i]f successful, it could provide a blueprint for future shared-resource management schemes."[3]

This Note examines the Settlement Act's innovative approach towards managing the country's longest and most economically significant river through the lens of adaptive co-management. Part II reviews the theoretical development of adaptive co-management and describes some challenges associated with this approach. Part III highlights relevant aspects of the historical development of natural resources management and governance in New Zealand and after establishing this context, provides an overview of the Settlement Act.

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1. Derek Armitage, Fikret Berkes & Nancy Doubleday, *Introduction: Moving Beyond Co-Management*, *in* ADAPTIVE CO-MANAGEMENT: COLLABORATION, LEARNING, AND MULTI-LEVEL GOVERNANCE 5 (Derek Armitage, Fikret Berkes & Nancy Doubleday eds., 2007).

2. Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 (N.Z.).

3. Nin Tomas, *Maori Concepts of Rangatiratanga, Kaitiakitanga, the Environment, and Property Rights*, *in* PROPERTY RIGHTS AND SUSTAINABILITY: THE EVOLUTION OF PROPERTY RIGHTS TO MEET ECOLOGICAL CHALLENGES 242 (David Grinlinton & Prue Taylor eds., 2011).

Finally, Part IV analyzes the provisions of the Settlement Act with respect to four elements central to adaptive co-management approaches.

II. THE EMERGENCE OF ADAPTIVE CO-MANAGEMENT

Adaptive co-management is an interdisciplinary approach to managing complex systems that represents "an important innovation in natural resource governance under conditions of change, uncertainty, and complexity."[4] The concept emerged from a fusion of separate social science narratives on co-management and adaptive management.[5]

A. Co-management

The theory and practice of co-management has its origins in the study of collaborative management of common pool resources such as fisheries.[6] The term "co-management" was first used in the 1970s by the tribes of western Washington to describe the relationship they sought to have with state fishery managers.[7] Generically, collaborative (or cooperative) management describes a sharing of rights and responsibilities by government and civil society, while co-management denotes formalized (sometimes statutory) collaborative arrangements linking local communities and governments.[8] However, there is no single definition of co-management, as there is a continuum of possible co-management schemes providing for differing degrees of power sharing.[9]

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4. Armitage, Berkes & Doubleday, *supra* note 1, at 5.

5. *Id.*

6. *See, e.g.*, CO-OPERATIVE MANAGEMENT OF LOCAL FISHERIES: NEW DIRECTIONS FOR IMPROVED MANAGEMENT AND COMMUNITY DEVELOPMENT (Evelyn Pinkerton ed., 1989); Armitage, Berkes & Doubleday, *supra* note 1, at 6 (noting key works in the development of co-management theory).

7. Evelyn Pinkerton, *Toward Specificity in Complexity: Understanding Co-management from a Social Science Perspective*, *in* THE FISHERIES CO-MANAGEMENT EXPERIENCE 62 (Douglas Clyde Wilson et al. eds., 2003). However, functionally similar agreements had been implemented at least as early as the beginning of the twentieth century. *See* Ryan Plummer & Derek Armitage, *Crossing Boundaries, Crossing Scales: The Evolution of Environment and Resource Co-Management*, 1 GEOGRAPHY COMPASS 834, 835 (2007).

8. Armitage, Berkes & Doubleday, *supra* note 1, at 2.

9. *Id.* at 3; Marren Sanders, *Ecosystem Co-Management Agreements: A Study of Nation Building or a Lesson on Erosion of Tribal Sovereignty?*, 15 BUFF. ENVTL. L.J. 97, 106 (2008) (describing four different levels of co-management power sharing (from strongest to weakest): "parity," "consent," "advisory," and "consultation").

Co-management's potential benefits include more appropriate and equitable governance, as well as enhancement of management functions such as data gathering, long-term planning, allocation and logistical decisions (e.g., regulating harvest), protection of resources from degradation, enforcement of regulations, and inclusive decision making.[10] Criticisms of co-management often relate to challenges commonly associated with collaborative decision-making processes, such as difficulties in achieving consensus[11] and problems of coordination where large numbers of stakeholders are involved in decision making.[12]

On the other hand, where co-management has been implemented in response to demands by resource users and communities, including indigenous groups, it has generally "serve[d] to democratize decision making, foster conflict resolution, and encourage stakeholder participation."[13] Through its inclusive processes, co-management also provides a unique opportunity to apply traditional understandings of ecological relationships and systems of resource management, or "traditional ecological knowledge," to complex problems calling for a broader and deeper understanding of the issues presented.[14] Moreover, "[c]o-management is the approach that best fits with the modern conception of sovereignty as involving reciprocity and bilateralism."[15] Thus, co-management agreements can be both a practical tool for natural resource management and an instrument for improved intergovernmental relations.[16]

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10. Armitage, Berkes & Doubleday, *supra* note 1, at 3.

11. *E.g.*, Joseph Feller, *Collaborative Management of Glen Canyon Dam: The Elevation of Social Engineering over Law*, 8 NEV. L.J. 896 (2008); Sandra Zellmer & Lance Gunderson, *Why Resilience May Not Always be a Good Thing: Lessons in Ecosystem Restoration from Glen Canyon and the Everglades*, 87 NEB. L. REV. 893, 929 (2009).

12. *E.g.*, Cameron Holley & Neil Gunningham, *Natural Resources, New Governance and Legal Regulation: When Does Collaboration Work?*, 24 NZULR 309, 336 (2011).

13. Armitage, Berkes & Doubleday, *supra* note 1, at 3.

14. Edmund J. Goodman, *Indian Tribal Sovereignty and Water Resources: Watersheds, Ecosystems, and Tribal Co-Management*, 20 J. LAND RESOURCES & ENVTL. L. 185, 215 (2000).

15. *Id.* at 214.

16. Sanders, *supra* note 9, at 136.

B. Adaptive Management

Adaptive management developed separately out of the field of applied ecology as a method for addressing the uncertainty and complexity associated with managing social-ecological systems.[17] Under an adaptive approach, often described as "learning-by-doing,"[18] management policies can be considered experiments and the learning aspect of the process is emphasized.[19] The focus is on achieving "an integrative understanding of the system dynamics, feedbacks, and thresholds that may undermine social-ecological resilience."[20] This implies that "front-end" decision processes, such as predecisional environmental impact assessment and cost-benefit analysis, should be de-emphasized. [21] In addition, formal follow-up mechanisms demanding integration of new information and ongoing decision adjustment processes are integral aspects of any adaptive management regime. [22]

Adaptive management approaches acknowledge that "what a complex system is *doing* seldom gives any indication of what it *would do* under changed conditions"[23] and that uncertainty is inherent in all ecosystems, including managed ones.[24] To address this uncertainty, adaptive management proponents have embraced the concept of "resilience": "the ability of a system to maintain its structure and patterns of behavior in the face of disturbance."[25]

Implementing adaptive approaches may amount to a "cultural challenge" for government agencies that will have to "live with management choices and uncertain outcomes over a long period rather

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17. *See* Armitage, Berkes & Doubleday, *supra* note 1, at 6.

18. Daniel Schramm & Akiva Fishman, *Legal Frameworks for Adaptive Natural Resource Management in a Changing Climate*, 22 GEO. INT'L ENVTL. L. REV. 491, 498 (2010).

19. Armitage, Berkes & Doubleday, *supra* note 1, at 4.

20. *Id.*

21. J.B. Ruhl, *General Design Principles for Resilience and Adaptive Capacity in Legal Systems—With Applications to Climate Change Adaptation*, 89 N.C. L. REV. 1373, 1396 (2011).

22. *Id.*

23. Paul Nadasdy, *Adaptive Co-Management and the Gospel of Resilience*, *in* ADAPTIVE CO-MANAGEMENT: COLLABORATION, LEARNING, AND MULTI-LEVEL GOVERNANCE, *supra* note 1, at 210 (quoting C.S. Holling, *Overview and Conclusions*, *in* ADAPTIVE ENVIRONMENTAL ASSESSMENT AND MANAGEMENT 4 (C.S. Holling ed., 1978)).

24. FIKRET BERKES, SACRED ECOLOGY 72 (2d ed. 2008).

25. Nadasdy, *supra* note 23, at 210 (quoting C.S. Holling, *The Resilience of Terrestrial Ecosystems: Local Surprise and Global Change*, *in* SUSTAINABLE DEVELOPMENT OF THE BIOSPHERE 296 (W.C. Clark and R.E. Munn eds., 1986)).

than going from quick fix to quick fix."[26] In addition, the political nature of many regulatory decisions can be an impediment to adaptive management, particularly where legal rights or interests are deeply entrenched.[27] Nonetheless, there is broad consensus among ecologists that adaptive management is necessary to achieve resilient ecosystems.[28] Situations where indigenous peoples have successfully adapted to their environment over millennia have provided evidence of effective adaptive management approaches, as well as inspiration.[29]

C. Fusion: Adaptive Co-management

Merging the concepts of co-management and adaptive management results in an approach that is distinct from either. Adaptive co-management aims to be closely attuned to the needs of resource users, "a flexible system of resource management, tailored to specific places and situations, supported by, and working in conjunction with, various organizations at different scales."[30] Additionally, as "a process by which institutional arrangements and ecological knowledge are tested and revised in a dynamic, self-organized process of learning-by-doing,"[31] it emphasizes learning and adapting.[32] Adaptive co-management recognizes ecological and social uncertainties as inherent to resource management and regards collaborative processes incorporating multiple sources and types of knowledge as the best approach to problem solving.[33] While "[a]ttention to management objectives and structures is necessary[,] . . . an emphasis on trust building, institutional development,

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26. A. Dan Tarlock, *Slouching Toward Eden: The Eco-Pragmatic Challenges of Ecosystem Revival*, 87 MINN. L. REV. 1173, 1198 (2003).

27. Zellmer & Gunderson, *supra* note 11, at 946.

28. *Id.* at 898. For a discussion of situations where adaptive management may not be appropriate, see Holly Doremus, *Adaptive Management as an Information Problem*, 89 N.C. L. REV. 1455, 1457 (2011).

29. Nadasdy, *supra* note 23, at 211; *see also* BERKES, *supra* note 24, at 72 (discussing analogous aspects of adaptive management and traditional knowledge systems).

30. *See* Derek Armitage et al., *Adaptive Co-Management for Social-Ecological Complexity*, 7 FRONTIERS IN ECOLOGY & ENV'T 95, 96 (2009).

31. Armitage, Berkes & Doubleday, *supra* note 1, at 5.

32. Fikret Berkes, *Evolution of Co-Management: Role of Knowledge Generation, Bridging Organizations and Social Learning*, 90 J. ENVTL. MGMT. 1692, 1698 (2009).

33. *See* Armitage et al., *supra* note 30, at 96.

and social learning takes adaptive co-management into the realm of governance."[34]

Four indispensable elements of adaptive co-management have been identified in the academic literature: collaboration and power sharing among community, regional, and national levels; a focus on learning-by-doing; integration of different knowledge systems; and management flexibility.[35] Part IV of this Note, below, discusses how the Settlement Act embodies each of these elements.

D. Some Criticisms and Challenges Associated with Adaptive Co-management

Notwithstanding its conceptual appeal, several important challenges have become apparent in association with implementing adaptive co-management schemes. Many of these relate to the fact that "the equitable treatment of marginalized peoples is simply not a management issue (cooperative, adaptive, or otherwise); it is a political issue."[36]

The complexities inherent in the ostensibly benign concept of resilience provide one illustration. Scientists have long recognized that complex systems, such as ecosystems, may have multiple equilibrium states; for example, there can be more than one stable community composition in a given habitat.[37] Managing for resilience thus necessitates a political choice in determining which state is most desirable, begging the question of "most desirable for whom?"[38] Hence, how one evaluates resilience and the social-ecological status quo likely depends on one's position within that system, potentially leading to disagreement over preferred approaches and outcomes.[39] Moreover, managing for resilience can come at the expense of managing for stability.[40] Because capitalist systems of resource extraction typically rely on stability-based management practices, managing for resilience can involve difficult political decisions to forgo maximizing short-term

34. *Id.*

35. *See* Armitage, Berkes & Doubleday, *supra* note 1, at 5.

36. *See* Nadasdy, *supra* note 23, at 223.

37. Peter S. Petraitis & Steve R. Dudgeon, *Detection of Alternative Stable States in Marine Communities*, 300 J. EXPERIMENTAL MARINE BIOLOGY & ECOLOGY 343, 343–45 (2004).

38. *See* Nadasdy, *supra* note 23, at 215.

39. *Id.* at 216.

40. *Id.* at 217.

economic gains.[41] This can result in politicians disregarding sound management recommendations in the face of pressure from powerful commercial interests.[42]

Recognizing that managing for resilience may not be desirable where it implies maintaining a disagreeable status quo, many adaptive management proponents instead emphasize managing for sustainability.[43] However, sustainability often seems to refer simply to a different chosen state of resilience. Some scholars go so far as to suggest that since normative goals such as sustainability and resilience cannot be value-neutral, the idea that science should be considered before values are introduced into a policy process is obsolete.[44]

Meaningful incorporation of traditional ecological knowledge into the adaptive co-management process can partially address these concerns by "offer[ing] practices and adaptations that may expand the range of the rather limited set of Western resource management prescriptions."[45] However, while Western and indigenous conceptions of conservation share a common interest in sustainability, merging two systems rooted in different worldviews and unequal in power is not straightforward.[46] Indeed, the inclusion of indigenous knowledge is ultimately "*political* because it threatens to change power relations between indigenous groups and the dominant society."[47] Much of the difficulty Western and aboriginal experts find in integrating the two systems may result from differences in their political agendas and relationships to the resource in question.[48]

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41. *Id.* at 216. Professor Nadasdy laments that, although much of adaptive co-management involves indigenous peoples, the field's scholars generally "take for granted the broader political/economic context of capitalism/colonialism that gave rise to the notion of and need for resource management institutions" and is "most responsible for the marginalization of indigenous peoples and the dispossession of their lands and resources." *Id.* at 218. He notes that as the concept of management is based on assumptions "that are rooted in the economic and political context of capitalist resource extraction," economic imperatives make it difficult to avoid "pathologies" that lead to decreased resilience. *Id.* at 216, 223.

42. *Id.* at 216.

43. Nadasdy, *supra* note 23, at 214.

44. BERKES, *supra* note 24, at 253.

45. *See id.* at 3, 30.

46. *See id.* at 239, 270.

47. *Id.* at 254.

48. *See id.* at 12–13.

For example, the Maori environmental ethic "is oriented to conservation for human use."[49] As human-nature duality does not exist in the Maori worldview, traditional prohibitions are intended to ensure resource productivity, not to protect an intrinsic value such as "wilderness."[50] However, New Zealand's Conservation Act provides for the setting aside of land for "preservation."[51] From the Maori point of view, this "unacceptable notion of conservation driven by the Western concept of a human-nature dichotomy . . . 'only serves to further alienate all humans, but particularly Maori, from their land, and thus from their *kaitiaki* [guardianship, stewardship] responsibilities.' "[52] The New Zealand situation is not unique; analogous cases of resource-related power struggles involving fundamentally divergent environmental ethics are found in many parts of the world.[53]

Adopting indigenous conservation on its own terms also means abandoning romanticized ideas about indigenous people living in "perfect harmony" with nature.[54] Indigenous peoples, like all others, frequently participate in market economies in an attempt to improve their standard of living.[55] Therefore, conservation of key resources often has the mixed motive of maintaining a healthy environment *and* making a living.[56]

Moreover, "[a]lmost all traditional ecological knowledge systems may be characterized as a complex of knowledge, practice, *and belief*."[57] In contrast, Western science by definition does not contain a belief component.[58] Such fundamental incompatibilities between indigenous practices and the conceptual framework of scientific resource management systems can lead "to indigenous knowledge being treated as supplementary or taken out of context and reduced to data compatible with scientific analysis."[59] Given these challenges, Professor Fikret

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49. *Id.* at 235.

50. *Id.*

51. Conservation Act 1987, pt. IV (N.Z.).

52. BERKES, *supra* note 24, at 235 (quoting Roberts et al., *Kaitiakitanga: Maori Perspectives on Conservation*, 2 PACIFIC CONSERVATION BIOLOGY 7, 15 (1995)).

53. BERKES, *supra* note 24, at 263.

54. *Id.* at 238–39.

55. *Id.* at 239.

56. *Id.*

57. *Id.* at 252.

58. *Id.* at 253.

59. Julia Christensen & Miriam Grant, *How Political Change Paved the Way for Indigenous Knowledge: The Mackenzie Valley Resource Management Act*, 60 ARCTIC 115, 116 (2006); BERKES, *supra* note 24, at 16 (describing "the creation of a 'traditional

Berkes, a leading scholar on adaptive co-management and traditional ecological knowledge, believes that it may not be possible or desirable to meld Western scientific knowledge and indigenous knowledge, and that the best approach may be to pursue the two systems "separately but in parallel, enriching one another as needed."[60] Clearly, the development of effective methods for scientists to interact with traditional knowledge holders in the resource management process is critical to ensuring that adaptive co-management can accomplish its objective of inclusiveness.[61]

It is thus apparent that adaptive co-management does not guarantee fairness or equity in resource allocation.[62] Moreover, the theory may not translate into practice: learning may fail to lead to adaptation, and in some cases, co-management processes "may be reduced to a bureaucratic mechanism in which some groups are able to pursue their private interests at the expense of other, less powerful stakeholders."[63] Indeed, the track record of co-management in terms of poverty reduction and empowerment of the marginalized appears to be weak.[64]

Professor Nin Tomas, who supports adoption of a traditional Maori worldview as the foundation for a sustainable society, describes this type of co-management as "a halfway house to reeducating Western thinking away from the micromanagement of 'my' 'sacred' 'individual' 'property' 'rights' and toward accepting, if not adopting, a broader environmental indigenous-based worldview."[65] Nevertheless, a halfway house is a positive step, and a step that should be taken. Despite its limitations, most scholars are decidedly enthusiastic about adaptive co-management, emphasizing its power sharing, institution building, trust

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ecological knowledge industry' ").

60. BERKES, *supra* note 24, at 270.

61. *See* Christensen & Grant, *supra* note 59, at 120, 122; BERKES, *supra* note 24, at 270.

62. Berkes, *supra* note 32, at 1698.

63. *Id.*; *see also* Alejandro E. Camacho, *Can Regulation Evolve? Lessons From a Study in Maladaptive Management*, 55 UCLA L. REV. 293 (2007) (concluding that the Habitat Conservation Plan program of the Endangered Species Act, which has been lauded as a successful example of collaborative adaptive regulation, is "ultimately defective" in that its participatory mechanisms allow developers to evade the Endangered Species Act's strict provisions and because the agencies administering it have failed to adequately monitor and learn from Habitat Conservation Plan implementation).

64. Berkes, *supra* note 32, at 1692–93.

65. Tomas, *supra* note 3, at 220.

building, knowledge development, and social learning aspects.[66] "[T]he very act of engagement in adaptive co-management has the potential to change the way that the dominant management agencies have always conducted their business, challenging their biases and creating windows of opportunity for new leadership to emerge."[67] Additionally, where indigenous peoples are involved in co-management and succeed politically in achieving a meaningful level of power sharing, they are in a position to more effectively deal with parties whose interests in natural resources run contrary to their own.[68]

III. NEW ZEALAND'S WAIKATO-TAINUI SETTLEMENT ACT 2010—HISTORY AND BACKGROUND

Co-management of natural resources in New Zealand, where people of indigenous ancestry make up fifteen percent of the population, has been developing for some time.[69] Co-management in this context consists of negotiated arrangements involving specific Maori groups and Crown agencies, regional councils, and/or local councils.[70] In 2010, New Zealand's Parliament passed the Waikato River Settlement Act,[71] which provides for an innovative collaborative management scheme that has the potential to "bring to an end a paradigm of exclusion and usher in a new era that promises enhanced governance and management of a significant

66. *See, e.g.*, Berkes, *supra* note 32, at 1698–99.

67. Derek Armitage, Fikret Berkes & Nancy Doubleday, *Synthesis: Adapting, Innovating, Evolving*, *in* ADAPTIVE CO-MANAGEMENT: COLLABORATION, LEARNING, AND MULTI-LEVEL GOVERNANCE, *supra* note 1, at 317.

68. *See* Sanders, *supra* note 9, at 110. However, applying Derrick A. Bell, Jr.'s Interest-Convergence theory to ecosystem co-management suggests that "the cooperative aspect of co-management agreements may last only as long as the benefits to non-[indigenous peoples] do." *Id.* at 171.

69. *See, e.g.*, LOCAL GOV'T NEW ZEALAND, CO-MANAGEMENT: CASE STUDIES INVOLVING LOCAL AUTHORITIES AND MAORI (2007), *available at* http://www.lgnz.co.nz/library/publications/Co-Management_-_case_studies_involving_local_government_and_Maori.pdf; GEOFFREY PALMER & MATTHEW PALMER, BRIDLED POWER: NEW ZEALAND'S CONSTITUTION AND GOVERNMENT 344 (4th ed. 2004) (noting collaborative management aspects of 1997 settlement agreement between the Crown and Ngai Tahu with respect to fisheries, conservation, and environmental decision-making).

70. Linda Te Aho, *Indigenous Challenges to Enhance Freshwater Governance and Management in Aotearoa New Zealand—The Waikato River Settlement*, 20 J. WATER L. 285, 288 (2010).

71. Settlement Act, *supra* note 2.

waterway."[72] The Settlement Act, in ensuring Maori interests equal representation in managing the Waikato River, is a clear step forward in the Maori-Crown relationship and provides a workable model for bringing the two worldviews together.[73] However, the Settlement Act has come about only after generations of struggle by the Waikato-Tainui people to restore unjustly confiscated lands and end their exclusion from governance of their namesake river, a struggle that is embedded in the larger issue of recognition of Maori rights and interests in natural resources. This Part provides a context for and an overview of this groundbreaking accord.

A. Maori Worldview and Environmental Ethics

The Maori, sailing from distant Polynesian islands over a thousand miles of uncharted seas, became Aotearoa New Zealand's first human inhabitants.[74] Essentially isolated from the rest of the world for several centuries, these immigrants developed a distinctive culture in their new, colder home.[75] Maori society is organized by *hapu* and *iwi* (subtribes and tribes) occupying exclusive territories.[76] The various hapu and iwi share a common language and environmental philosophy.[77]

Maori law is largely defined by *whakapapa* (the principle of upholding genealogy), which provides a sense of intergenerational belonging and a basis for long-term planning.[78] Such a principle is generally lacking in Western legal frameworks, which tend to emphasize the allocation of property among living people and typically do not have fully developed concepts of intergenerational responsibility. In the Maori system, on the other hand, a duty to care for the environment in order to

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72. Te Aho, *supra* note 70, at 285.

73. *See* Tomas, *supra* note 3, at 242.

74. *E.g.*, Lloyd Burton & Chris Cocklin, *Water Resource Management and Environmental Policy Reform in New Zealand: Regionalism, Allocation, and Indigenous Relations*, 7 COLO. J. INT'L ENVTL. L. & POL'Y 75, 75 (1996). Aotearoa ("land of the long white cloud") is the Maori name for New Zealand.

75. *See generally* DORA ALVES, THE MAORI AND THE CROWN: AN INDIGENOUS PEOPLE'S STRUGGLE FOR SELF-DETERMINATION 3–11 (1999).

76. Tomas, *supra* note 3, at 220. The New Zealand government has statutorily recognized some of these traditional tribal territories. *Id.*

77. *Id.* Variations among Maori groups in their principles and concepts for relating to the natural environment are "differences in application rather than in kind." *Id.*

78. *Id.* at 228.

"uphold[] the physical and spiritual connections between humans and natural systems across generations" is a fundamental principle underlying all property-type concepts.[79]

The Maori worldview emphasizes humankind's place as an integral part, rather than masters, of the natural environment.[80] Like the complex systems theory underlying adaptive management,[81] Maori philosophy conceives of the universe as an intricate web of relationships.[82] Maori are thus generally cautious about interfering with well-functioning natural systems and recognize that seeking short-term benefits may destabilize a system and lead to a loss of *mauri* (life-generating capacity).[83] Explicitly recognizing humanity's dependence on the environment and its relationship to all other things, Maori accordingly perceive their role to be that of a *kaitiaki* (caretaker, guardian, conservator).[84] Under Maori law, hapu and iwi groups have *mana* (authority), and thus access to resources, with respect to specific territories.[85] However, if the hapu should fail to carry out its *kaitiakitanga* (guardianship) duties adequately, its *mana* will be removed and harm will come to its members.[86] When necessary, *rahui* (access restrictions) were traditionally invoked as conservation measures to ensure sufficient resources for the future, and strong sanctions were provided for their breach.[87]

B. British Colonization of Aotearoa New Zealand and Maori Interests in Natural Resources

The Maori enjoyed sole occupation of this isolated group of islands for several hundred years, until the early nineteenth century when *Pakeha* (European—mainly British—colonial settlers) arrived.[88] Although for the first few decades of Pakeha presence in Aotearoa the British did not challenge, and indeed fully recognized, Maori

79. *Id.* at 229.

80. *Id.* at 223–24. However, Professor Tomas notes that the Treaty Settlement process has provided some iwi with significant financial resources, inviting temptation from profit-making opportunities that may be inconsistent with traditional environmental practices and creating "a new group of potential environmental exploiters." *Id.* at 238.

81. *See* BERKES, *supra* note 24, at 189.

82. Tomas, *supra* note 3, at 226-27.

83. *Id.* at 228.

84. *Id.* at 226.

85. *Id.* at 227.

86. *Id.*

87. *Id.* at 228.

88. *See generally* ALVES, *supra* note 75, at 11–20.

sovereignty, colonial representatives eventually became determined to negate any British recognition of an independent New Zealand.[89]

British and Maori leaders signed the Treaty of Waitangi ("Treaty") in 1840.[90] There were two versions of the Treaty: one in English, signed by thirty-nine Maori *rangatira* (chiefs), and one in the Maori language, signed by over 500 *rangatira*.[91] The English version cedes sovereignty to the Crown, while the Maori version guarantees *tino rangatiratanga* (absolute authority) to Maori.[92] However, on the subject of Maori rights to their lands and natural resources, the Treaty is unambiguous:

> Her Majesty the Queen of England confirms and guarantees to the Chiefs and Tribes of New Zealand and to the respective families and individuals thereof the full exclusive and undisturbed possession of their Lands and Estates Forests Fisheries and other properties which they may collectively or individually possess so long as it is their wish and desire to retain the same in their possession . . . .[93]

While its interpretation has been a continual source of debate, New Zealand law regards the Treaty as confirming the transfer of power and authority over the entire territory of New Zealand, including title to all of

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89. Benjamin A. Kahn, *The Legal Framework Surrounding Maori Claims to Water Resources in New Zealand: In Contrast to the American Experience*, 35 STAN. J. INT'L L. 49, 55 (1999).

90. Treaty of Waitangi, U.K.-N.Z., Feb. 6, 1840, 29 B.S.P. 1111. The orthodox legal view is that the Treaty itself is not formally part of New Zealand law unless specifically referenced in a particular statute; however, New Zealand courts generally accept the application of Treaty principles as a consideration in statutory interpretation and administrative decision-making. PALMER & PALMER, *supra* note 69, at 337.

91. Tomas, *supra* note 3, at 220–21 n.5.

92. *Id.* New Zealand courts have generally refused to apply the doctrine of *contra proferentum*, whereby ambiguous terms would be construed against the treaty's writer; rather, they undertake to "have regard to both" versions of the Treaty. Kahn, *supra* note 89, at 108–114. In addition, the New Zealand government deemphasizes the Treaty's wording, maintaining that the Treaty's principles deserve greater respect than its literal provisions. *Id.* at 114.

93. Treaty of Waitangi, *supra* note 90. Commentators and New Zealand judges have long noted that, like the Pacific Northwest tribes, the Maori were willing to sign the Treaty and cede land only if their rights to the resources they depended on were guaranteed. *See* Kahn, *supra* note 89, at 66. Despite the Treaty's text, Maori rights to land and natural resources were diminished by legislation beginning in the 1860s and continuing into the twentieth century, and communal tribal holdings were broken up pursuant to policies encouraging allotment and assimilation. *Id.* at 86–93. Thus, the Treaty was largely "forgotten or ignored" by Pakeha for over a century. *Id.* at 102.

its natural resources, to the British, and by succession, the New Zealand government.[94] New Zealand's democratic model does not recognize tribal sovereignty.[95]

There has been significant public controversy in recent decades surrounding Maori claims that the Crown has repeatedly breached the Treaty since its signing in 1840.[96] The Waitangi Tribunal, an "independent forum" established by the Treaty of Waitangi Act 1975, hears grievances and makes recommendations to the government regarding alleged breaches of the Treaty.[97] The nature of the claims brought before the Tribunal varies widely, but they often relate to *raupatu* (unjust confiscation of lands) or regulation of natural resources.[98] The Tribunal's powers, however, are limited to making recommendations; the Crown ultimately retains discretion in deciding whether to negotiate and settle with claimants.[99] Since the 1990s, Treaty settlements have gained momentum, with the parties resorting to hearings by the Tribunal, direct negotiation, or a mixture of the two to resolve Treaty claims.[100]

Maori began to lodge claims related to water resources with the Waitangi Tribunal shortly after its inception, and early Tribunal reports highlight the importance of Maori participation in water resource management.[101] One Tribunal report found that the Crown's failure to properly regulate sewage and industrial discharge onto or near traditional

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94. Tomas, *supra* note 3, at 221. Given that Maori (numbering approximately 90,000) were a decisive majority of the population and that they had reserved their authority and their lands under the Declaration of the Independence of New Zealand/HaWakaputanga o te Rangatiratanga (1835), Professor Tomas notes that it is unlikely they would have willingly ceded both just five years later. *Id.* Ironically, the Maori signed the Declaration at the urging of the British resident in New Zealand, James Busby, who was fearful of French inroads into New Zealand. Kahn, *supra* note 89, at 54–55.

95. Kahn, *supra* note 89, at 64.

96. PALMER & PALMER, *supra* note 69, at 336.

97. Treaty of Waitangi Act 1975 (N.Z.). In 1985, New Zealand's Parliament extended the Waitangi Tribunal's jurisdiction back to the date of the signing of the Treaty (February 6, 1840) creating "a forum for historical breaches of the Treaty." PALMER & PALMER, *supra* note 69, at 337. Recently, the Tribunal has been statutorily limited to hearing only those historical claims submitted prior to September 2008. Treaty of Waitangi Act 1975 § 6AA (N.Z.), *amended by* Treaty of Waitangi Amendment Act 2006 (N.Z.).

98. PALMER & PALMER, *supra* note 69, at 344.

99. Te Aho, *supra* note 70, at 288.

100. PALMER & PALMER, *supra* note 69, at 339–43.

101. *See* Te Aho, *supra* note 70, at 288.

fishing grounds was inconsistent with the Treaty's principles.[102] The Tribunal affirmed that, pursuant to the Treaty, the Crown had a duty to physically protect the fishing grounds from pollution or destruction, and went on to recognize the *rangatiratanga* (sovereignty) of the Maori to use and control the fishing grounds in accordance with their culture and custom.[103] In another significant report, the Tribunal found that the interests of an iwi (Te Atihaunui-a-Paparangi) in its ancestral river (the Whanganui) had been extinguished in a manner inconsistent with the Treaty's principles and recommended that the iwi be given approval authority over any river-related resource use.[104] Waitangi Tribunal reports such as these laid the foundation for co-management of natural resources in New Zealand.[105]

The New Zealand government took another step towards recognizing Maori interests in natural resource management in the Resource Management Act 1991 ("RMA").[106] Declaring an overarching purpose of "sustainable management,"[107] the RMA created a unified system of governance of land, water, and air resources.[108] Regional and local authorities are vested with day-to-day control of resource management, although the central government retains some influence, primarily through promulgating environmental standards and national policy statements.[109] The regional and local councils, which are organized along watershed lines, prepare plans relating to the use of land, air, and water resources that specify when one must apply to the council for a "resource consent" (i.e., a permit to do something affecting land,

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102. *Id.*

103. *Id.*

104. *See id.* Although the iwi's claims remain unsettled, this report's recommendations served as a precursor for the Waikato River Settlement Agreement. *Id.*

105. *Id.* at 288.

106. Resource Management Act 1991 (N.Z.) [hereinafter RMA]. While it was initially widely hailed as representing a model for sustainable management, it is generally agreed that the RMA has not lived up to its promise. *See* Peter Horsley, *Property Rights Viewed from Emerging Relations Perspectives*, *in* PROPERTY RIGHTS AND SUSTAINABILITY: THE EVOLUTION OF PROPERTY RIGHTS TO MEET ECOLOGICAL CHALLENGES, *supra* note 3, at 93–94.

107. RMA, *supra* note 106, § 5.

108. *See* Jacinta Ruru, *Undefined and Unresolved: Exploring Indigenous Rights in Aotearoa New Zealand's Freshwater Legal Regime*, 20 WATER L. 236, 237 (2010) (summarizing the RMA), *available at* http://www.otago.ac.nz/law/nrl/water/journal/236-242_final.pdf.

109. *See id.*

air, or water).[110] The RMA calls for administrators to "recognize and provide for" the relationship of Maori to their traditional lands, natural resources, and other *taonga* (treasures);[111] to have "particular regard" to *kaitiakitanga* (guardianship of resources);[112] and to "take into account" the principles of the Treaty of Waitangi.[113] In addition, when preparing policy statements or planning documents pursuant to the RMA, council authorities "shall consult" local iwi that may be affected.[114]

While the RMA's language is promising, it largely presents Maori interests as considerations to be balanced against other factors in making decisions.[115] In practice, Maori have been largely disappointed with their role under the RMA, with commentators claiming that rather than being recognized as a Treaty partner entitled to full participation in the decision-making process, the Maori role has been relegated to mere consultation.[116] In many cases, decisions have been made on a non-notified basis, denying Maori any participation in the management process.[117] Moreover, the political power of commercial interests has often led to councils putting "too much emphasis on *mitigating* and *remedying* damage rather than *avoiding* it."[118] Maori appeals of decisions made under the RMA have been largely unsuccessful.[119] While the courts have recognized that the RMA does offer some procedural protections, they have also confirmed that under the RMA, Maori interests do not "trump other matters."[120]

Frustrated Maori leaders urged the government to take strong legislative action that would provide for effective Maori engagement in natural resource management and called for proactive restoration and protection of freshwater resources.[121] As a result, the RMA was amended

110. *See* RMA, *supra* note 106, §§ 9–23, 59–77; Ruru, *supra* note 108, at 237.

111. RMA, *supra* note 106, pt. II § 6(e).

112. *Id.* pt. II § 7(a).

113. *Id.* pt. II § 8.

114. *Id.* sched. 1, pt. I(3)(1)(d).

115. *See* Ruru, *supra* note 108, at 240.

116. *E.g.*, Te Aho, *supra* note 70, at 287.

117. *Id.*

118. *Id.*

119. *See* Ruru, *supra* note 108, at 238–40 (noting that "[i]n a survey of RMA cases concerning Maori and water, only two of the identified 19 relevant cases resulted in clear wins for Maori" and that both of those cases involved atypical facts).

120. *Id.* at 240 (citing *Freda Pene Reweti Whanau Trust v Auckland Regional Council* (2005) 11 ELRNZ 235 (Environment Court Auckland)).

121. Te Aho, *supra* note 70, at 287. The Waikato River Settlement incorporates many of these suggestions. *Id.*

in 2005 to encourage collaboration by providing for joint management agreements ("JMAs") between government and iwi or hapu authorities.[122] Most importantly, JMAs provide for Maori representation in the decision-making bodies that administer the RMA.[123] Some JMAs also provide for vesting of title to resources in Maori groups as well as public use rights.[124] Although today there are several JMAs relating to natural resources, all but one were statutorily mandated outcomes of the Treaty settlement process.[125] While the 2005 Amendment to the RMA provides for the voluntary creation of JMAs, this essentially entails an optional transfer of power from a council to an iwi that many councils have been reluctant to undertake.[126]

Iwi also have reason to be unenthusiastic about entering into JMAs under the RMA. The RMA mandates that even Maori decision makers must balance Maori interests with other matters of national importance, seriously constraining Maori self-determination with respect to resource management.[127] Thus, important concerns remain regarding "whether co-management can ever truly work in New Zealand when there is such an imbalance of power and resourcing and when the Crown partner is the ultimate decision-maker."[128]

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122. Resource Management Amendment Act 2005 § 18 (N.Z.).

123. *See, e.g.*, LOCAL GOV'T NEW ZEALAND, LOCAL AUTHORITIES AND MAORI: CASE STUDIES OF LOCAL ARRANGEMENTS 9 (Feb. 2011), *available at* http://www.lgnz.co.nz/library/files/store_024/000000507784.pdf.

124. Te Aho, *supra* note 70, at 289.

125. *See* Natalie Coates, *Joint-Management Agreements in New Zealand: Simply Empty Promises?*, 13 J. S. PACIFIC L. 32, 33, 37 (2009), *available at* http://www.paclii.org/journals/fJSPL/vol13no1/pdf/coates.pdf. The sole voluntary JMA provides for joint administration of the RMA in relation to certain traditional Maori lands in the Taupo District. Joint Management Agreement between Taupo District Council and The Tuwahretoa Maori Trust Board (2009), a*vailable at* http://www.taupodc.govt.nz/Documents/Policy/Tuwharetoa%20Council%20Joint%20Management%20Agreement/Joint%20Management%20Agreement.pdf.

126. Coates, *supra* note 125, at 33–36.

127. *Id.* at 36.

128. Te Aho, *supra* note 70, at 292. For example, Maori activist Moana Jackson notes that co-management agreements let the Crown frame the discussion while continuing to deny iwi sovereignty. *See* Moana Jackson, *Constitutional Transformation*, *in* WEEPING WATERS: THE TREATY OF WAITANGI AND CONSTITUTIONAL CHANGE 326–27 (Malcom Mullholland & Veronica Tawhai eds., 2010).

C. The Waikato River and Its People

The Waikato River, the country's longest, originates in the volcanic highlands at the heart of Aotearoa New Zealand's North Island and flows through alluvial plains for much of its 425 kilometers before emptying into the Tasman Sea just south of Auckland.[129] An Austrian geologist visiting New Zealand in 1859 provided an apt description of the "mighty Waikato":

> [T]he sight of the majestic stream is truly grand. . . . Its sources spring from the very core of the land; its waters roll through the most fertile and most beautiful fields, populated by numerous and most powerful tribes of the natives, who have taken their name from it; and no second river of New Zealand has such an importance, as the grand thoroughfare for the interior of the country.[130]

Maori view rivers as having "their own life force, their own spiritual energy and their own powerful identities. Rivers are inextricably linked to tribal identities."[131] The iwi affiliated with the modern Waikato-Tainui confederation consider themselves descendants of Hoturoa, the legendary captain of the Tainui canoe that first brought their people to Aotearoa.[132] These "river people," who take their name from the river and occupied its banks continuously for centuries, consider the Waikato River a "living ancestor" with its own *mauri* (life force).[133] For over 500 years, the river provided them with a variety of fish and an abundance of eel, while wetlands in the valley provided waterfowl as well as flax, which the Maori wove into a multitude of essential everyday items.[134]

The nineteenth-century transfer of the Waikato River from Maori to Pakeha control was abrupt. However, given the fecundity of the Waikato plain and the crucial transportation artery the river provided, the settlers

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129. Te Aho, *supra* note 70, at 285.

130. F. VON HOCHSTETTER, NEW ZEALAND: ITS PHYSICAL GEOGRAPHY, GEOLOGY AND NATURAL HISTORY 294–95 (Edward Sauter trans., 1867) (quoted in Te Aho, *supra* note 70, at 285).

131. Te Aho, *supra* note 70, at 285. This relationship is exemplified by the Maori adage "*Ko au te awa, ko te awa ko au*." (I am the river, and the river is me.) *Id.*

132. *Id.* at 285–86. After the Tainui canoe came to rest on the west coast of the North Island in the fourteenth century, Hoturoa's people moved inland and settled along the Waikato River. *Id.* The Settlement Act's Preamble also provides an account of Waikato-Tainui's relationship to the River, the confiscation of its lands, and its persistent struggles for redress. Settlement Act, *supra* note 2.

133. Te Aho, *supra* note 70, at 286.

134. *See id*. Although the Waikato offered a wealth of resources, Maori elders recall that the traditional ethic was "not to be greedy, to only take enough for one meal." *Id.*

acted in predictable fashion. In 1863, British forces invaded the Waikato region on the pretense of suppressing a Maori rebellion;[135] the actual motive was clearly to secure more of its fertile lands for settlement.[136] The British moved up the Waikato River in gunboats, bombarded the Waikato-Tainui people with shells fired from the waters of their namesake river,[137] and unjustly confiscated 1.2 million acres of prime land.[138] After two decades of exile, many Waikato-Tainui people returned to the region, but they found a new political and legal regime in place[139]—a "paradigm of exclusion" that persisted for over a century.[140]

After successfully driving the Maori from their ancestral villages, the Crown assumed control of the Waikato River.[141] Wetlands were drained; nonnative vegetation, such as willows, were introduced and rapidly took hold; sewage, farm run-off, mining, and industry polluted the waters; dams were built and flows altered to generate hydroelectric power; and coal-fired power plants were constructed.[142] While this development has contributed significantly to the country's economic growth, the river iwi have suffered tangible losses. Due to dams, pollution, commercial fishing, and competition from introduced species, the Waikato-Tainui people can no longer gather food from a river "once teeming with life."[143] Traditional knowledge is also being lost, and as

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135. The alleged rebellion, the *Kingitanga* (Maori King) movement, arose in the 1850s in response to the rapidly increasing Pakeha threat to Maori lands and authority. Te Ahukaramu Charles Royal, *Waikato tribes—The King movement*, TE ARA—THE ENCYCLOPEDIA OF NEW ZEALAND, http://www.TeAra.govt.nz/en/waikato-tribes/4 (last updated May 3, 2010). At the heart of this movement, which was centered in the Waikato region and continues to this day, was a desire to remain on the traditional lands. *Id.*

136. David Young, *Rivers*, TE ARA—THE ENCYCLOPEDIA OF NEW ZEALAND, http://www.TeAra.govt.nz/en/rivers/4/1 (last updated Mar. 16, 2009).

137. *See id.*

138. *See* Te Aho, *supra* note 70, at 286.

139. *Our History*, WAIKATO TAINUI, http://www.waikatotainui.com/?id=126 (last visited Sept. 24, 2012).

140. *See* Te Aho, *supra* note 70, at 287.

141. *See id*. The Waikato Maori have continuously fought their exclusion from the region. The second Maori King, Tawhiao, sailed to England in hopes of meeting "monarch to monarch" with Queen Victoria; he was not granted an audience. *Id.* In 1914, his grandson Te Rata, the fourth Maori King, travelled to England and was received by King George V and Queen Mary, who informed him that he must look to the New Zealand government for any redress of his people's grievances. *Id.*

142. *Id.*

143. *See id.* at 286.

elders are no longer able to pass down food gathering techniques and ecological knowledge gathered over hundreds of years, intergenerational connections have been severed.[144]

European property institutions have further alienated the Waikato-Tainui from the Waikato River. The British government applied English common law to the ownership of water in New Zealand, presuming that the Crown owned the beds and banks of tidal rivers and providing that riparian owners had title to the beds of nontidal rivers.[145] These distinctions between bed, banks, and waters, and determinations of ownership based on navigability and the reach of the tides were, of course, completely foreign to the Maori, who see rivers as indivisible entities and living ancestral beings with their own life force and sacredness.[146]

The New Zealand government's first step toward acknowledging the deeply held grievances of the Waikato Maori came in 1927, when a Commission of Inquiry found that the confiscation of the Waikato Maori's lands had been a grave injustice.[147] Decades of sustained effort by the Waikato-Tainui culminated in an opportunity for direct negotiations with the Crown, resulting in the Waikato Raupatu Claims Settlement Act 1995.[148] In the Act, the Crown acknowledged it had breached the Treaty of Waitangi and returned land to the Waikato-Tainui people.[149] The Act did not, however, address Waikato-Tainui claims relating to the Waikato River, such as the ownership of the water resource itself.[150]

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144. *See id.*

145. *See id.* at 287.

146. *Id.*

147. *See id.* at 288.

148. *Id.* at 290.

149. Waikato Raupatu Claims Settlement Act 1995 (N.Z.). The Act recites the confiscation of 1.2 million acres of land from the Waikato-Tainui in the 1860s, records an apology by the Crown, and provides for the transfer of lands valued at up to NZ$ 170 million to the Waikato-Tainui along with a right of first refusal on other Crown lands within the Waikato. PALMER & PALMER, *supra* note 69, at 343.

150. Te Aho, *supra* note 70, at 290. According to Waikato-Tainui chief executive Tuku Morgan, the issue of water rights has been "parked" for discussion at a later date as the parties focus on implementing their co-management agreement. Yvonne Tahana, *Ownership of Water an Option, Say Iwi Leaders*, NEW ZEALAND HERALD (Feb. 9, 2012), http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10784311.

D. The Waikato River Settlement Act 2010

In 2008, continued negotiations between the Crown and Waikato-Tainui resulted in a Deed of Settlement acknowledging the Crown's confiscation of the Waikato River and the surrounding lands, the subsequent decline in the River's health, and the special nature of the relationship between the Waikato-Tainui and the River.[151] The Deed of Settlement provides for co-management of the Waikato River involving a range of agencies, with a central purpose of restoring and protecting the health of the River.[152]

The Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 implements the terms of the Deed of Settlement.[153] Schedule 2 of the Settlement Act sets out a "vision" for the River, calling "for a future where a healthy Waikato River sustains abundant life and prosperous communities, who, in turn, are all responsible for restoring and protecting the health and wellbeing of the Waikato River, and all it embraces, for generations to come."[154] In furtherance of this vision, the Settlement Act articulates "objectives" including "the integrated, holistic, and co-ordinated [sic] approach to management of the natural, physical, cultural, and historic resources of the Waikato River" and "the adoption of a precautionary approach towards decisions that may result in significant adverse effects on the Waikato River."[155] The Settlement Act also provides twelve "strategies" to be followed in implementing its vision.[156] These strategies include establishing the current health of the River and developing targets for improving its health utilizing both *matauranga Maori* (traditional Maori knowledge) and the latest Western science.[157] The Settlement Act is "to be the primary direction-setting document for the Waikato River and activities within its catchment

151. Deed of Settlement in Relation to the Waikato River 2008 (N.Z.), *available at* http://nz01.terabyte.co.nz/ots/DocumentLibrary/WaikatoRiverDeedofSettlement.pdf.

152. *Id.*; Te Aho, *supra* note 70, at 290. The co-management framework was refined by a revised Deed of Settlement in 2009. Deed of Settlement in Relation to the Waikato River 2009 (N.Z.), *available at* http://nz01.terabyte.co.nz/ots/DocumentLibrary%5CWaikatoRiverDOSDec09.pdf.

153. Settlement Act, *supra* note 2.

154. *Id.* sched. 2 § 1(2).

155. *Id.* sched. 2 § 1(3). The Waikato River is defined to include all tributaries, wetlands, and lakes within the catchment. *Id.* pt. 1 § 6.

156. *Id.* sched. 2 § 2.

157. *Id.* sched. 2 § 2(b)–(c).

affecting the Waikato River."[158] As such, it takes precedence over national policy statements[159] and parts of the RMA relating to planning and policy statements.[160] Furthermore, decisions made pursuant to other statutes will be required to "give[] effect to" or "have particular regard to" the Settlement Act's vision and strategy.[161]

The co-management approach mandated by the Settlement Act revolves around an integrated river management plan that the Waikato-Tainui and all government authorities with jurisdiction over the River and its resources will prepare jointly.[162] In addition, JMAs are required between the Waikato-Tainui and regional or local councils performing management functions relating to the Waikato River.[163] Committees evaluating resource consent applications affecting the River must include Maori-appointed commissioners.[164]

The Settlement Act provides for co-governance as well as co-management.[165] The Waikato River Authority, composed of both Crown- and iwi-appointed members, embodies co-governance.[166] The Authority has responsibility for implementing and amending the Settlement Act's vision and strategy,[167] as well as administering the Waikato River Clean-

158. *Id.* pt. 1 § 5(1).

159. *Id.* pt. 2 § 12(1)(a).

160. *Id.* pt. 2 §§ 10(2), 12.

161. *Id.* pt. 2 §§ 15, 17.

162. *Id.* pt. 2 § 35.

163. *Id.* pt. 2 § 41. The Waikato-Tainui and Waikato District Council agreed to the first JMA pursuant to the Settlement Act in 2010. The Waikato Raupatu River Trust and Waikato District Council Joint Management Agreement 2010 (N.Z.), *available at* http://www.waikatodistrict.govt.nz/CMSFiles/37/37ce0ceb-c0c5-4e0d-bbe4-62c14d10eb65.pdf.

164. Settlement Act, *supra* note 2, pt. 2 §§ 25–28. Such committees must consist of an equal number of members appointed by iwi and the Waikato Regional Council, with an independent, jointly appointed chairperson. *Id.* pt. 2 § 28(2).

165. Te Aho, *supra* note 70, at 291.

166. Settlement Act, *supra* note 2, sched. 6 § 2. The Authority consists of ten members: one appointed by each of the five iwi associated with the Waikato River—Waikato-Tainui, Te Arawa, Tuwharetoa, Raukawa, Maniapoto—and five appointed by the Minister for the Environment in consultation with other Ministers (including the Minister of Maori Affairs). *Id.* As the Waikato-Tainui, by far the region's most populous Maori group, may appoint only one representative to the Waikato River Authority, the Settlement Act has been criticized for failing to provide for proportional representation of iwi based on either population or tribal territory. Te Aho, *supra* note 70, at 292. Earlier versions of the settlement had provided for four Waikato-Tainui representatives, but calls for equity by other Waikato River iwi resulted in their being granted representatives at the expense of the Waikato-Tainui. *Id.*

167. Settlement Act, *supra* note 2, pt. 2 § 22.

Up Trust with an objective of "restoration and protection of the health and well-being of the Waikato River for future generations."[168]

The Settlement Act further addresses Maori grievances by recognizing the right to continue traditional activities such as performing traditional ceremonies and fishing from whitebait stands and eel weirs.[169] The Settlement Act also provides for vesting title to certain sites of traditional significance in the Waikato-Tainui[170] and for Waikato-Tainui participation in the co-management of Crown-owned lands related to the river.[171]

IV. THE WAIKATO-TAINUI SETTLEMENT ACT AS ADAPTIVE CO-MANAGEMENT

The influence of adaptive co-management on the Waikato-Tainui Settlement Act is clear. Indeed, during committee deliberations on the Settlement Bill, two committee members referred to the bill's model as being one of adaptive co-management.[172] The Settlement Act, in its statement of principles, recognizes that "[t]o be effective, co-management must . . . include provision for . . . the planning and development of new and amended policies or management initiatives or decisions affecting or relating to the Waikato River."[173] Analyzing the Settlement Act pursuant to the tenets of adaptive co-management illuminates those concepts as well as the Settlement Act's unique provisions.

The key features of adaptive co-management include collaboration and power sharing among community, regional, and national levels; a focus on learning-by-doing; integration of different knowledge systems; and management flexibility.[174] This Note will evaluate the Settlement Act with respect to each of those four features below. However, it should

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168. *Id.* pt. 2 § 32.

169. *Id.* pt. 2 § 56.

170. *Id.* pt. 2 § 66.

171. *Id.* pt. 2 § 80.

172. [2010] 662 NZPD 10465 (N.Z.), *available at* http://www.parliament.nz/en-NZ/PB/Debates/Debates/8/8/8/49HansD_20100427_00000820-Waikato-Tainui-Raupatu-Claims-Waikato-River.htm.

173. Settlement Act, *supra* note 2, sched. 1 § 4.

174. *See* Armitage, Berkes & Doubleday, *supra* note 1, at 5.

be emphasized that the Settlement Act provides only a vision and framework. The still-evolving details of its implementation will largely determine its success.

A. Collaboration and Power Sharing—Community, Regional, National

The Settlement Act exhibits a nuanced understanding of the requirements of successful co-management:

> [C]o-management includes the highest level of good faith engagement and consensus decision-making as a general rule . . . . To be effective, co-management must be implemented and achieved at a number of levels and across a range of management agencies, bodies, and authorities . . . and [must] include provision for effective Waikato-Tainui input and participation by engagement at an early stage in . . . actions[] that may affect the health and wellbeing of the Waikato River.[175]

The Settlement Act provides a framework for effective co-management of the Waikato River through a robust mix of collaborative arrangements. The "integrated river management plan," which is to be prepared together by the Waikato-Tainui and all government departments, authorities, and agencies involved in governing and managing the Waikato River's resources,[176] provides a foundation for the Settlement Act's co-management scheme.

Another co-management agreement is required between Waikato-Tainui and the Waikato Regional Council to address Crown- and iwi-controlled river-related lands.[177]

The Settlement Act also created the Waikato River Authority ("Authority"), an innovative co-management institution. The Authority is comprised of ten members, half appointed by iwi and half by the Minister for the Environment (in consultation with other specified Ministers).[178] As the five iwi-appointed representatives presumably have a fundamental connection to the Waikato River, the Settlement Act helps to ensure that a majority of the Authority's ten members will have a meaningful connection to the region by requiring that two of the other

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175. Settlement Act, *supra* note 2, sched. 1 § 4(1)–(2) (internal punctuation omitted).

176. *Id.* pt. 2 §§ 35, 36.

177. *Id.* pt. 2 § 80.

178. *Id.* sched. 6 § 34(2).

members be Waikato residents.[179] The Authority must pursue consensus decision making, and matters that cannot be agreed upon are referred to the Minister for the Environment and an iwi-appointed representative for binding resolution.[180] The Authority's functions include engaging with and advising local authorities and government agencies with planning and management responsibilities relating to the River with the aim of achieving an "integrated, holistic, and co-ordinated approach" to the River's management.[181] The Settlement Act facilitates interaction among these groups by requiring that the Waikato Regional Council and local authorities periodically review their planning documents to ensure consistency with the Settlement Act's vision and strategy[182] and that actions taken pursuant to a number of other statutes (including the Conservation Act) must "give effect to" or "have particular regard to" the vision and strategy.[183]

The Authority will have the opportunity to consider and provide input on all matters of significance affecting the Waikato River, primarily through JMAs with regional and local authorities.[184] The RMA's characteristics of devolved decision making and organization of management units along watershed lines already provide substantial management roles to local and regional authorities, including the power to grant resource consents for uses relating to the River.[185] Pursuant to the Settlement Act, Waikato-Tainui and each local authority must execute JMAs covering matters relating to the Waikato River and providing for the parties to work together in carrying out monitoring and enforcement activities, preparing planning documents, and processing resource consent applications.[186] The parties to the JMA are required to meet at least twice each year to review monitoring data and to discuss appropriate responses.[187] When the Waikato Regional Council holds a hearing under the RMA on an application to make a point source

179. *See* Settlement Act, *supra* note 2, sched. 6 § 34(2) (setting out the rules regarding composition of the Waikato River Authority).

180. *Id.* sched. 6 §§ 9–11.

181. *Id.* pt. 2 § 23(2)(b).

182. *Id.* pt. 2 § 13.

183. *Id.* pt. 2 §§ 15–17.

184. *Id.* pt. 2 § 41–55. Actions taken pursuant to a JMA have the same legal effect as actions by a local authority. *Id.* pt. 2 § 51(2).

185. *See supra* notes 106–110 and accompanying text.

186. Settlement Act, *supra* note 2, pt. 2 §§ 41–47.

187. *Id.* pt. 2 § 45(2).

discharge into the Waikato River or "to take, use, dam, or divert" its waters, the hearing committee must contain an equal number of Council- and iwi-appointed members, plus a jointly appointed chairperson.[188]

The Settlement Act takes on co-management of a large-scale resource—the country's longest and most economically significant river—which will no doubt create challenges due to the variety of competing interests and attendant institutional complexities.[189] However, the Settlement Act takes steps to mitigate these challenges through providing opportunities to build trust among the various stakeholders by first tackling a noncontroversial project (establishing the current health of the river) and by ensuring that Authority members, iwi-appointed or not, have a shared connection to the Waikato region.[190] In addition, under the Settlement Act's directive to develop and share relevant knowledge on local, national, and international scales,[191] the preceding decades of international co-management experience will provide a valuable source of information and inspiration. Given the co-governance functions of the Waikato River Authority, the mandatory JMAs between Waikato-Tainui and all relevant government authorities across all levels, as well as the integrated river management plan and river-related lands co-management agreements, the Settlement Act exemplifies collaboration and power sharing.

B. Learning-by-Doing

The Settlement Act, while not going so far as to label management policies "experiments," does explicitly provide for learning-by-doing. For example, the section setting out the "general functions" of Waikato River Authority charge it with monitoring "the implementation, effectiveness, and achievement of the vision and strategy, including any targets and methods"; reporting the results to the Crown and Waikato-Tainui; and "periodically review[ing] the vision and strategy and, at the Authority's discretion, recommend[ing] amendments to it."[192] This increased monitoring and data collection will be of great value to all

188. *Id.* pt. 2 §§ 26, 28.

189. *See* Armitage et al., *supra* note 30, at 101.

190. *See generally* Berkes, *supra* note 32, at 1699 ("[A] new co-management arrangement should start off by tackling small problems, and proceed through successive cycles by elaborating the knowledge base while building trust and learning.").

191. Settlement Act, *supra* note 2, sched. 2 § 2.

192. *Id.* Pt. 2 § 23(2)(e)–(g). The Settlement Act's vision and strategy must be reviewed at least every five to ten years. *Id.* pt. 2 § 19.

Waikato stakeholders in assessing the health of the River and the effectiveness of management policies.[193]

In addition, the Settlement Act requires that the "integrated river management plan" be reviewed at least every five years and outlines procedures for its amendment.[194] Learning is also emphasized in the strategies outlined in the Settlement Act that require the development and sharing of "local, national, and international expertise, including indigenous expertise, on rivers and activities within their catchments that may be applied to the restoration and protection of the . . . Waikato River."[195]

Similarly, with respect to JMAs, the Settlement Act specifies that local authority and Waikato-Tainui representatives must meet at least twice each year to discuss and agree to monitoring priorities and methods, and to "discuss appropriate responses to address the outcomes of the monitoring," including the potential for review of RMA planning documents.[196] The Settlement Act also provides specific procedures for "reviewing, changing, or varying" an RMA planning document.[197]

Importantly, one of the Settlement Act's first priorities is determining the current health of the Waikato River, employing both traditional knowledge and the latest science.[198] This should provide an agreed-upon and well-studied baseline against which to measure the effectiveness of management policies and changes in the well-being of the River over time.[199]

The Settlement Act's emphasis on establishing a baseline, monitoring the effectiveness of management practices, reviewing the results, and using the information and knowledge gained to revise policies epitomizes learning-by-doing and provides the framework for improving resource management through an adaptive approach. Statutorily mandating these elements demonstrates the Settlement Act's firm commitment to learning-by-doing.

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193. *See* Armitage et al., *supra* note 30, at 99.

194. Settlement Act, *supra* note 2, sched. 7 § 4.

195. *Id.* sched. 2 § 2(e).

196. *Id.* pt. 2 § 45.

197. *Id.* pt. 2 § 46.

198. *Id.* sched. 2 § 2(b).

199. *See* Schramm & Fishman, *supra* note 18, at 500 (describing the process of identifying a baseline of conditions against which to evaluate changes as the first step in the adaptive management process).

C. Integration of Different Knowledge Systems

The Settlement Act's vision sets out as one of its objectives that "both maatauranga Maaori [sic] and the latest available scientific methods" be applied in the pursuit of all the other enumerated objectives.[200] The Settlement Act further specifies that both *matauranga Maori* and modern science must be employed in establishing the current state of the River, as well as in developing targets for improving its health and well-being.[201] Significantly, the statutory language gives equal footing to Maori traditional knowledge and modern science and mandates that both of these knowledge systems be applied to all decisions affecting the Waikato River. The Settlement Act also calls for the development and sharing of indigenous knowledge that may be applicable to management of the River.[202]

Although bridging these two knowledge systems that embody such disparate worldviews will undoubtedly present numerous challenges that must be worked out in implementing these directives,[203] the Settlement Act's express language stipulating that traditional knowledge be used in conjunction with modern science embodies a political determination that Maori environmental ethics will play a significant role in the River's management. Meaningful provisions for Maori co-management, which require iwi input on any management or legislative process that may affect the Waikato River, bolster this recognition of traditional knowledge.

There is an important synergy here, as "[t]he use of traditional knowledge provides a mechanism, a point of entry, to implement co-management and self-government and to integrate local values into decision-making."[204] Thus, the Settlement Act's express inclusion of *matauranga Maori* should help "level the playing field" and lead to revised management approaches that are not exclusively informed by Western scientific principles.[205] The Waikato iwi could learn a great deal by studying the Pacific Northwest tribes' success in increasing their power over management of their fisheries by becoming masters of Western science as well as traditional knowledge.[206]

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200. Settlement Act, *supra* note 2, sched. 2 § 1(3)(m).

201. *Id.* sched. 2 § 2(b)–(c).

202. *Id.* sched. 2 § 2.

203. *See supra* notes 46–61 and accompanying text.

204. BERKES, *supra* note 24, at 273–74.

205. *See id.* at 274.

206. For a discussion of scientific capabilities and management institutions

D. Management Flexibility

The Settlement Act describes a vision and strategy and provides only a framework for its implementation, but it is a framework that supports flexibility in management policies and institutions. By leaving the development of specific management policies to subsequent collaborative processes, the Settlement Act gives stakeholders the flexibility to choose from a wide range of regulatory, collaborative, and economic tools in managing the River's resources. The Settlement Act's procedures for reviewing and amending its provisions further illustrate its commitment to management flexibility.[207] For example, the parties to the mandatory integrated river management plan may agree to review and amend the plan (or any component thereof) at any time.[208] In addition, a local or regional management plan giving effect to the Settlement Act's vision and strategy will trump a conflicting national standard where the plan is more stringent than the standard.[209]

This management flexibility complements the learning-by-doing attributes of the Settlement Act's adaptive co-management regime by providing for the revision of management practices based on accumulated experience and knowledge. By remaining open to different approaches, the Settlement Act also supports the incorporation of Maori traditional knowledge into the management process.[210] In addition, this flexibility provides greater capacity to deal with uncertainty and change, potentially enhancing the social-ecological resilience of the Waikato region.[211]

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developed by the Pacific Northwest tribes, see CHARLES WILKINSON, BLOOD STRUGGLE: THE RISE OF MODERN INDIAN NATIONS 311 (2005); CHARLES WILKINSON, CROSSING THE NEXT MERIDIAN: LAND, WATER, AND THE FUTURE OF THE WEST 213 (1992).

207. *See* Settlement Act, *supra* note 2, pt. 2 §§ 18–21, sched. 4 (vision and strategy); pt. 2 § 53 (JMAs); pt. 2 § 46 (RMA planning document); sched. 7 § 4 (integrated river management plan).

208. *Id.* sched. 7 § 4.

209. *Id.* pt. 2 § 12(4).

210. *See generally* Gary P. Kofinas, Susan J. Herman & Chanda Meek, *Novel Problems Require Novel Solutions: Innovation as an Outcome of Adaptive Co-Management*, *in* ADAPTIVE CO-MANAGEMENT: COLLABORATION, LEARNING, AND MULTI-LEVEL GOVERNANCE, *supra* note 1, at 260.

211. *See generally* Per Olsson, *The Role of Vision in Framing Adaptive Co-Management Process: Lessons from Kristianstads Vattenrike, Southern Sweden*, *in* ADAPTIVE CO-MANAGEMENT: COLLABORATION, LEARNING, AND MULTI-LEVEL GOVERNANCE, *supra* note 1, at 268–69.

V. CONCLUSION

Co-management of a resource of the size and importance of the Waikato watershed is an ambitious undertaking. Implementing the Settlement Act will be a long-term social process. Balancing the competing interests and rectifying the historical imbalance of power will undoubtedly prove challenging at times, and the process itself will be costly and resource-intensive. Adaptive co-management does not in itself resolve differences between stakeholders, but it has the potential to make the process less adversarial and more productive. As Te Aho notes, although the Settlement Act is the product of a lengthy, painful, negotiated compromise, it "provides an opportunity to bring to an end a 'paradigm of exclusion' " and to move beyond decades of conflict by developing a cooperative spirit "and mutual regard towards a single purpose, to restore and protect the health and well-being of the Waikato River for future generations."[212]

The Settlement Act did not address all of the Waikato-Tainui's concerns, most notably ownership of the river. Undoubtedly, iwi water rights will be the subject of future negotiations between the Crown and Waikato-Tainui. Restoration of Maori tenure over the water resource will provide an additional incentive—self-interest—for iwi to manage the River sustainably.[213] It should also be emphasized that the Settlement Act only applies to the Waikato River, while Maori in other areas of New Zealand generally do not enjoy a comparable level of influence in resource management at present.

Although the costs associated with this process-oriented approach may seem high in the short-term, it offers the potential for tremendous long-term benefits in the form of social and ecological sustainability.[214] Looking to a wider context, beyond the interests of any particular stakeholder, adaptive co-management approaches that include indigenous peoples and their traditional knowledge offer an opportunity to attend to increasingly complex and urgent ecosystem management problems with a broader perspective and deeper understanding.[215] Given that past resource management schemes have proven inadequate and we do not yet know how to manage a river sustainably in the face of

212. Te Aho, *supra* note 70, at 292.

213. *See* BERKES, *supra* note 24, at 273 (describing the importance of secure property rights to successful community-based resource management).

214. *See* Armitage et al., *supra* note 30, at 100.

215. *See* Goodman, *supra* note 14, at 215.

exponentially growing demands and a rapidly changing climate, learning-by-doing seems to be the wisest course to follow.