

VERMONT JOURNAL OF ENVIRONMENTAL LAW
VERMONT LAW SCHOOL

Volume 20, Issue 3

Winter 2019

ARTICLES

- Implementing Nature’s Rights Through Regulatory Standards
Linda Sheehan..... 227
- The Common Law as a Critical Lever in Expanding Rights Beyond
the Human: Reflections on the Vermont Journal of Environmental
Law’s 2018 “Rights of Nature Symposium
Kevin Schneider, Esq. 243
- How Courts Are Developing River Rights Jurisprudence:
Comparing Guardianship in New Zealand, Colombia, and India
Craig M. Kauffman & Pamela L. Martin. 260
- The Saga of Jerusalem’s Ein Lavan Spring: How the Human Right
to Development Trumps Rights of Nature
Rachelle Adam. 290

NOTES

- Cruising Into a New Energy Future: A Look Into the Energy
Transition in the Cruise Ship Industry
Elias Ancharski..... 305
- Using the Public Trust Doctrine to “Make it Rain”
Ethan Story 330

IMPLEMENTING NATURE’S RIGHTS THROUGH REGULATORY STANDARDS

*Linda Sheehan**

Introduction.....	227
I. Strategies for Implementing Nature’s Rights Laws	228
II. Limits of Current Environmental Statutes and Implementing Regulations	231
III. Clean Water Act Regulations vs. Regulations that Protect Waterways’ Inherent Rights	235
A. Laundry List of “Designated Uses” vs. Prioritization of Water System Integrity	236
B. Criteria to Support “Designated Uses” vs. Criteria to Protect Rights	237
C. “Antidegradation” v. Restoration.....	238
IV. Developing Regulatory Standards Consistent with the Rights of Nature.....	239
Conclusion	241

INTRODUCTION

At Vermont Law School’s (“VLS”) 2018 Symposium, “Rights of Nature: Shifting Paradigms and Grounding in the Law” (“Symposium”), numerous experts shared insights on the evolution of nature’s rights movement and offered projections for its future. The speakers’ presentations illustrated that an increasing number of statutes, cases, constitutional law provisions, treaties, and other forms of law now

* Advisor, Global Alliance for the Rights of Nature; Linda Sheehan Consulting, <https://www.linkedin.com/in/lindasheehan/>.

recognize nature's rights.¹ At the Symposium, however, topics such as the implementation of nature's rights laws and the potential impacts of a nature's rights regime—as opposed to current environmental law systems—were under-represented. Recognizing nature's inherent rights is an important first step towards establishing a mutually healthy relationship with the natural world; however, merely recognizing nature's rights is insufficient to ensuring actual change. A healthy relationship with the natural world also demands changing current laws and enforcement systems. This essay examines the limits of current environmental statutes and regulations in protecting nature's right to exist, thrive, and evolve.² This essay then offers alternative regulatory approaches towards better achieving this goal, using the Clean Water Act (CWA) as illustration.

I. STRATEGIES FOR IMPLEMENTING NATURE'S RIGHTS LAWS

Enforcing nature's rights laws through court action is one strategy to engender specific, meaningful change. Court action can help recognize nature's rights, define the parameters of a nature's rights law, and provide specific guidance to decision makers and stakeholders. Among other approaches, judicial education can advance judicial action. The International Union for Conservation of Nature's [IUCN] World Commission on Environmental Law has prioritized judicial education.³ The IUCN further has recognized nature's inherent right to exist, thrive, and evolve in its Declaration on an Environmental Rule of Law.⁴ Through education, judges worldwide are becoming more aware of rights of nature

1. See generally Oliver Houck, *Noah's Second Voyage: The Rights of Nature as Law*, 31 TULANE ENVL. L.J. 1, 15–21 (2017) (highlighting key instances of nature's rights being codified into law).

2. REPÚBLICA DEL ECUADOR CONSTITUCION DE 2008 [CONSTITUTION] Oct. 20, 2008, Off. Reg., tit. II, ch. 7, art. 71 (Ecuador), <http://pdba.georgetown.edu/Constitutions/Ecuador/ecuador08.html> (last visited Mar. 3 2020), translated in Georgetown University's Edmund A. Walsh School of Foreign Service, Center for Latin American Studies Program, <http://pdba.georgetown.edu/Constitutions/Ecuador/english08.html> (last visited Mar. 3 2020) (providing that "Nature or Pachamama, where life is reproduced and exists, has the right to exist, persist, maintain itself and regenerate its own vital cycles, structure, functions and its evolutionary processes").

3. World Comm. on Env't'l Law, *Second International Meeting of the Global Judicial Institute on Environment*, INT'L UNION FOR CONSERVATION OF NATURE (May 19–21, 2017), <https://www.iucn.org/commissions/world-commission-environmental-law/events-wcel/past-events-wcel/second-international-meeting-global-judicial-institute-environment>.

4. See Int'l Union for Conservation of Nature [IUCN], *IUCN World Declaration on the Environmental Rule of Law* (February 12, 2017), https://www.iucn.org/sites/dev/files/content/documents/english_world_declaration_on_the_environmental_rule_of_law_final.pdf ("[N]ature has the inherent right to exist, thrive, and evolve").

and broader environmental justice concepts.⁵ Academic discussions, such as the VLS Symposium and materials following, contribute to this global legal scholarship and may assume a noteworthy role in court decisions.⁶

A second strategy to impact meaningful change is to adopt follow-up laws that advance specific elements of broader, rights-based legislation. One example of this strategy recently occurred in Santa Monica, California. In 2013, the Santa Monica City Council adopted the Santa Monica Sustainability Rights Ordinance.⁷ This ordinance recognizes the “fundamental and inalienable rights” of “natural communities and ecosystems” in the City to “exist and flourish.”⁸ The Sustainability Rights Ordinance specifically defines “natural communities and ecosystems” to include “groundwater aquifers, atmospheric systems, marine waters, and native species.”⁹ As with rights of nature laws generally,¹⁰ the Sustainability Rights Ordinance’s impact is proceeding relatively slowly as local decision makers consider how to best translate the Sustainability Rights Ordinance’s language into practice.

The Santa Monica City Council had its first implementation success in August 2018, when it adopted the Santa Monica Sustainable Groundwater Management Ordinance. This Ordinance addresses the local aquifer—the source of most of the City’s water supply—and its inherent rights.¹¹ The Ordinance bans construction of new, private water wells and expansion of

5. *Judges from Around the World Debate the Challenges of Environmental Justice at the OAS*, ORG. OF AM. STATES (Aug. 28, 2018), http://www.oas.org/en/media_center/photonews.asp?sCodigo=FNE-94826.

6. *Sierra Club v. Morton*, 405 U.S. 727, 743 (1972) (discussing Justice William O. Douglas’ dissent, which referenced Christopher Stone’s essay “Should Trees Have Standing” and questioned the reasons for limiting standing to humans when the ecosystem itself was the injured party. Justice Douglas suggested that the “river as plaintiff speaks for the ecological unit of life that is part of it,” and offered that those closest to the rivers and forests could speak on their behalf) [hereinafter *Morton*]; *See generally* Christopher Stone, *Should Trees Have Standing – Toward Legal Rights for Natural Objects*, 45 SOUTHERN CAL. L. REV. 450, 450–458 (1972) (explaining the legal evolution from rights of man to rights of nature).

7. SANTA MONICA, CAL., MUN. CODE art. 12, ch. 12.02 ((added by Ord. No. 2421 CCS § 1, adopted 4/9/13; amended by Ord. No. 2611CCS § 10, adopted 6/25/19).

8. SANTA MONICA, CAL. MUNICIPAL CODE, art. 12, ch. 12.03, § 12.02.030(b) (adopted 2013, amended 2019).

9. *Id.*

10. *See, e.g.,* Craig M. Kauffman and Pamela L. Martin, *Can Rights of Nature Make Development More Sustainable? Why Some Ecuadorian Lawsuits Succeed and Others Fail*, 92 WORLD DEVELOPMENT 130, 131-32 (2017).

11. SANTA MONICA, CAL. MUN. CODE ch. 7.18.040 (2018); *see also* CITY OF SANTA MONICA OFFICE OF SUSTAINABILITY & THE ENV’T, INTRODUCTION AND FIRST READING OF AN ORDINANCE ADDING CHAPTER 7.18 TO THE SANTA MONICA MUNICIPAL CODE RELATING TO SUSTAINABLE GROUNDWATER MANAGEMENT AND PROHIBITING NEW PRIVATE WELLS AND EXPANSION OF PRIVATE WELLS UNLESS AND UNTIL PERMITTED BY A GROUNDWATER SUSTAINABILITY PLAN 656–666 (2018), <http://santamonicacityca.iqm2.com/Citizens/FileOpen.aspx?Type=1&ID=1156&Inline=True>.

existing wells, citing the city aquifer's inherent right to flourish.¹² This Ordinance is significantly more protective than existing California groundwater management law.¹³ Santa Monica is currently developing a Groundwater Sustainability Plan that may allow private wells in the future, but only if the private wells do not disturb the aquifer's right to flourish.¹⁴ A variety of factors will help shape the Groundwater Sustainability Plan and will include, among other things: studies assessing different models of projected aquifer use; scientific and rights-grounded policies supportive of a "flourishing" system over a degraded one; and subsequent controls regulating aquifer usage.¹⁵

A third strategy to implement rights of nature law is through administrative law. This strategy involves developing and adopting regulations that recognize nature's rights. Regulations help resolve legal gaps, imprecision, and inconsistencies.¹⁶ By developing rights-based regulations, society further defines nature's rights.

12. *Id.*

13. CAL. WATER CODE §§ 10720 et seq. (2014), the "Sustainable Groundwater Management Act" (SGMA) (codifying, in § 10723, guidelines to establish local groundwater sustainability agencies to manage each water basin). *But see* CAL. WATER CODE § 10721(v)-(x) (2019) (supporting the argument that the guidelines fall short of efficacy because the SGMA sets a low threshold requirement for basin protection). The SGMA defines "sustainable groundwater management" as "management and use of groundwater in a manner that can be maintained ... without causing undesirable results." CAL. WATER CODE § 10721(v). It then defines such "undesirable results" as including "one or more of the following...:

- (1) Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued...
- (2) Significant and unreasonable reduction of groundwater storage.
- (3) Significant and unreasonable seawater intrusion.
- (4) Significant and unreasonable degraded water quality...
- (5) Significant and unreasonable land subsidence that substantially interferes with surface land uses.
- (6) Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.", which generally means that rather than ensuring healthy basins, SGMA plans only require that California's aquifers are not significantly and unreasonably drawn down or polluted."

CAL. WATER CODE § 10721(x).

14. CITY OF SANTA MONICA, Department of Public Works, SUSTAINABLE GROUNDWATER MANAGEMENT ACT SUMMARY 6 (Feb. 22, 2017).

15. CITY OF SANTA MONICA, SANTA MONICA BASIN GROUNDWATER SUSTAINABILITY AGENCY MEMORANDUM OF UNDERSTANDING 2 (2017).

16. Matthew C. Stephenson, *Statutory Interpretation by Agencies*, RESEARCH HANDBOOK ON PUBLIC CHOICE AND PUBLIC LAW 285 (Daniel A. Farber & Anne Joseph O'Connell eds., Edward Elgar Pub. 2010).

II. LIMITS OF CURRENT ENVIRONMENTAL STATUTES AND IMPLEMENTING REGULATIONS

The stated purpose of many current environmental laws and their implementing regulations is to achieve “healthy” systems.¹⁷ For example, the Marine Mammal Protection Act (MMPA) states that the primary objective of marine mammal management “should be to maintain the health and stability of the marine ecosystem.”¹⁸ Similarly, the National Environmental Policy Act (NEPA) “recognizes that each person should enjoy a healthful environment”¹⁹ and “encourage[s] productive and enjoyable harmony” with the environment.²⁰ It further encourages each person to exercise their “responsibility to contribute to the preservation and enhancement of the environment.”²¹ Similar language is found at the state level.²² For example, the California Coastal Act states that “[u]ses of the marine environment shall...maintain healthy populations of all species of marine organisms.”²³

The desired “healthy” environment, however, has failed to materialize because, as written, the laws cannot structurally achieve these goals.²⁴ Environmental laws have addressed some acute issues, such as large sewage and industrial pollution releases, but have failed to prevent long-term, devastating harm, such as climate change and species extinctions.²⁵ Lack of funding, political backtracking, understaffing, weak enforcement, and other challenges certainly have created obstacles for success.²⁶ A lack of understanding of systems science when the laws were adopted exacerbates such struggles.²⁷ Our single-stressor laws simply did not envision systemic shifts such as pollution-caused, runaway climate change.

17. See e.g. 33 U.S.C. § 3601 (2012) (identifying purpose of “conserv[ing] healthy . . . ecosystems”).

18. 16 U.S.C. § 1361(6) (1994).

19. 42 U.S.C. § 4331(c) (1970).

20. 42 U.S.C. § 4321 (1970).

21. *Id.* § 4331(c).

22. See generally Cal. Pub. Res. Code § 30230 (2000) (demonstrating similar language between the National Environmental Policy Act and the California Coastal Act).

23. *Id.*

24. THOMAS BERRY, *THE GREAT WORK: OUR WAY INTO THE FUTURE* 107-116 (Bell Tower 1999) [hereinafter *THE GREAT WORK: OUR WAY INTO THE FUTURE*].

25. *Id.*; see also CORMAC CULLINAN, *WILD LAW: A MANIFESTO FOR EARTH JUSTICE* 36-44 (Chelsea Green Publishing 2d ed. 2011).

26. See generally Brandy Dennis & Juliet Eilperin, *EPA Remains Top Target with Trump Administration Proposing 31 Percent Budget Cut*, WASH. POST, (May 23, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/05/22/epa-remains-top-target-with-trump-administration-proposing-31-percent-budget-cut/?noredirect=on&utm_term=.a442a3f4fe8c (explaining the implications of cutting federal government funding to environmental protection).

27. Cullinan, *supra* note 26, 47-48.

However, fully implementing existing environmental laws and associated regulations would still fail to ensure a thriving planet because the laws themselves are fundamentally flawed.²⁸ Rather than recognize that nature and humans are interconnected, these laws assume that we can isolate and control elements of the natural world as we choose. Most federal U.S. environmental laws were developed over 45 years ago as reactions to human-caused tragedies such as long-term DDT contamination, dead Great Lakes, and regular river fires.²⁹ The shared intent of these laws was to set goals that would sustainably protect ecosystems and species and hold users of the environment to those goals.³⁰ Despite this benevolent intent, however, the structure of these laws reflects a societal perspective that the natural world is in essence a resource to be manipulated for profit and other human desires. The ideology behind these laws, in other words, is not far detached from the ideology that generated the environmental harm the laws were designed to prevent.

Consistent with a frame of nature as economic resource, our environmental laws legalize and externalize the impacts of pollution, rather than more generally apply bans.³¹ The laws further place the burden of proof on those impacted to show pollution is harmful, rather than on pollution dischargers to show it is not.³² They fail to include provisions to pay back our collective debt to nature through affirmative, sweeping restoration activities or broad establishment of habitat reserves.³³ An economic system that treats nature as capital pushes back on such approaches, which are inconsistent with natural systems' perceived role as primarily an economic good.

The U.S. Endangered Species Act (ESA) is a prime example. Often viewed as the closest approximation to a rights of nature statute, the ESA operates from a basic premise that species as a whole have some right to exist, independent of their direct benefit to people.³⁴ However, the “God

28. *Id.*; see also Berry, *supra* note 25.

29. See generally Keith Schneider, *New View Calls Environmental Policy Misguided*, Mar. 21, 1993, <https://www.nytimes.com/1993/03/21/us/new-view-calls-environmental-policy-misguided.html> (discussing scientist's dissatisfaction with U.S. environmental policy).

30. See Richard J. Lazarus, *The Greening of America and the Graying of United States Environmental Law: Reflections on Environmental Law's First Three Decades in the United States*, 20 Va. Env'tl. L. J. 75, 76–77 (2001).

31. Jan G. Laitos, Lauren Joseph Wolongevicz, *Why Environmental Laws Fail*, 39 WM. & MARY ENVTL. L. & POL'Y REV. no. 1 at 36 (2014).

32. Katie Steele, *The Precautionary Principle: A New Approach to Public Decision Making*, 5 LAW, PROBABILITY AND RISK 19, 26 (Aug. 8, 2006).

33. See, e.g., George Monbiot, *FERAL: REWILDING THE LAND, THE SEA, AND HUMAN LIFE* (Univ. of Chicago Press 2017).

34. 16 U.S.C. § 1531 (1988).

Squad” loophole³⁵ and species-targeted attacks on the Act³⁶ demonstrate the law’s limits in protecting the most fundamental of nature’s rights when faced with conflicting human economic desires.³⁷ Indeed, even the basic premise of the Act—to intervene only when species are poised to vanish—demonstrates the law’s adherence to the current, primarily economic understanding of nature.³⁸ A law that recognized species’ own, inherent rights to exist, thrive, and evolve might be called the “Healthy Species Act,” rather than the “Endangered Species Act.”³⁹

Other examples include:

The U.S. National Environmental Policy Act (NEPA), which allows public environmental review of projects subject to government approval, but fails to require that negative environmental impacts be avoided or mitigated to insignificance.⁴⁰ It further fails to effectively consider cumulative impacts, opening the door to environmental “death by a thousand cuts.”⁴¹

The U.S. Marine Mammal Protection Act (MMPA), which places a “[m]oratorium on the taking and importation of marine mammals and marine mammal products,” but fails to maintain the Act’s intent by issuing permits when economic interests arise.⁴² For example, marine mammal “take” permits were issued to aging California coastal power plants, which kill and injure marine mammals on seawater intake pipes.⁴³ Unpermitted

35. Endangered Species Act, 16 U.S.C. §§ 1536(a)(2), (c), (h) (1988) (detailing conditions in which the Endangered Species Committee may grant an exemption from federal action that would otherwise trigger species protection requirements under the Act).

36. *See generally* Tennessee Valley Authority v. Hill, 437 U.S. 153, 195 (1978) (indicating Congress created a “God Squad” that decides whether to grant exemptions for federal agency actions, which would otherwise trigger species protection requirements under the ESA); Western Water and American Food Security Act of 2015, H.R. 2898, 114th Cong. (1st Sess. 2015); Doug LaMalfa, *Rep. LaMalfa, California Republicans Introduce Legislation to Improve Western Water Reliability* (June 25, 2015), <https://lamalfa.house.gov/media-center/press-releases/rep-lamalfa-california-republicans-introduce-legislation-to-improve>.

37. ELLEN HANAK ET AL., *MANAGING CALIFORNIA’S WATER: FROM CONFLICT TO RECONCILIATION* 241 (Pub. Policy Inst. of Cal. Ed., 2011) (arguing the Endangered Species Act is structurally limited in that it fails to allow for “endangered species triage” when competing economic uses – here, involving water – push multiple species towards extinction).

38. *See generally* Christian Langpap et al. *The Economics of the U.S. Endangered Species Act: A Review of Recent Developments*, 12 REV. ENVTL. ECON. & POL’Y 69, 70 (2018).

39. David U. Hooper et al., *A Global Synthesis Reveals Biodiversity Loss as a Major Driver of Ecosystem Change*, 486 NATURE 105 (June 7, 2012) (noting that species diversity is critical to the overall well-being of ecosystems).

40. *See* 42 U.S.C. § 4331(b) (encouraging environmental consideration, but only to a practical point; the law does not require mitigation).

41. U.S. E.P.A., EPA 315-R-99-002, *CONSIDERATION OF CUMULATIVE IMPACTS IN EPA REVIEW OF NEPA DOCUMENTS I* (1999).

42. 16 U.S.C. § 1371 (2018).

43. 16 U.S.C. § 1374 (2003); Calif. State Water Resources Control Board, “Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling: Final Substitute

takings further occur regularly through destruction of habitats critical to threatened and endangered marine mammals; for example, in California, the disappearance of once-abundant Chinook salmon and steelhead resulting from drained rivers endangers the existence of their marine predators, including the mighty Southern Resident killer whale.⁴⁴

The U.S. Clean Water Act (CWA) calls in Section 101 for the “elimination by 1985” of the “discharge of pollutants,” but has clearly not achieved that objective well over two decades later.⁴⁵ The Act’s regulations in fact allow continued pollutant discharges through permits, notably limiting the discharges only if they have a “reasonable potential” to violate individual standards.⁴⁶ In other words, the “no pollution” in effect has been interpreted as “no pollution that violates negotiated water quality standards” – a far weaker mandate that often not met.⁴⁷

Our system of law is nested within a larger context of societal attitudes and assumptions that impact both the law’s development and implementation.⁴⁸ There is a critical ideological bias with regard to natural systems, which “treat[s] the human will and its wants as the center around which” implementation of environmental laws must revolve.⁴⁹ Faced with this bias, the environment will lose—and, since we are connected, so will we.

Because our societal and economic framework treats the natural world as a resource for humans first and foremost, our environmental laws and the regulations implementing them fall short of achieving the “healthy” result they state they seek.⁵⁰ In practice, they pursue at best an environmental status of “not too degraded,” and at worst, not irreversibly so.⁵¹

What, then, would science-based environmental laws and regulations that implement the inherent rights of nature look like? How would we

Environmental Document,” p. 36 (May 4, 2010), https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/final_sed_otc.pdf.

44. NAT’L MARINE FISHERIES SERV., SW. REGION, BIOLOGICAL OPINION AND CONFERENCE OPINION ON THE LONG-TERM OPERATIONS OF THE CENTRAL VALLEY PROJECT AND STATE WATER PROJECT 51, 54 (2009).

45. Federal Water Pollution Control Act, 33 U.S.C. § 1251 (1972).

46. 40 C.F.R. § 122.44(d)(1)(i) (2000).

47. See, e.g., U.S. EPA, NATIONAL WATER QUALITY INVENTORY REPORT TO CONGRESS (2017), <https://www.epa.gov/waterdata/2017-national-water-quality-inventory-report-congress> (finding that 46% of U.S. river and stream miles and 32% of wetland areas “are in poor biological condition”) [hereinafter NATIONAL WATER QUALITY INVENTORY REPORT TO CONGRESS (2017)].

48. Laurence H. Tribe, *Ways Not to Think about Plastic Trees: New Foundations for Environmental Law*, 83 YALE L. J. 1315, 1317-1319 (1974) (describing societal considerations that affect law development); 40 C.F.R. § 122.44.

49. Tribe, *supra* note 55, at 1315, 1332.

50. *Id.* at 1317.

51. See U.S. EPA, *supra* note 49.

define an end result that respects nature's rights? And how do we engage scientists in defining "healthy ecosystems and species," towards protecting nature's own right to flourish?

Science has already guided the development of regulatory standards under current environmental laws.⁵² These standards helped clean up serious pollution and rescue near-extinct species.⁵³ Lessons learned from the development of these standards can guide the development of a new system of regulatory standards that recognizes nature's inherent rights to exist, thrive, and evolve.

III. CLEAN WATER ACT REGULATIONS VS. REGULATIONS THAT PROTECT WATERWAYS' INHERENT RIGHTS

To understand more deeply the concept of nature's rights-based regulations, we will deconstruct key assumptions in CWA regulatory standards and illustrate how those assumptions perpetuate harm. We will then demonstrate how to build standards that advance nature's inherent rights.

The CWA establishes a national objective to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters."⁵⁴ Regulations, including water quality standards, set goals for our relationship with a water body consistent with the overarching statutory framework.⁵⁵ They further drive management action, including setting boundaries for enforcement.⁵⁶

The CWA's water quality standards contain three basic elements: the designated uses of each water body or its portion, water quality criteria to protect designated uses, and anti-degradation policies and implementation procedures, which maintain and protect existing uses and higher quality waters.⁵⁷ Examining the assumptions behind each of these elements, and

52. See Alan D. Hecht & Joseph Fiskel, *Solving the Problems We Face: The United States Environmental Protection Agency, Sustainability, and the Challenges of the Twenty-First Century*, 11 SUSTAINABILITY: SCI., PRACTICE AND POL'Y 75, 79 (Oct. 5, 2017) (describing the influence of science on environmental laws and regulations over time).

53. See Brian Clark Howard, *48 Environmental Victories Since the First Earth Day*, Nat. Geographic (Apr. 18, 2018), <https://news.Nationalgeographic.com/2016/04/160422-earth-day-46-facts-environment/> (describing several of the EPA's most notable accomplishments, including significant strides in the areas of pollution control and endangered species protection).

54. 33 U.S.C. § 1251(a).

55. See U.S. E.P.A., *What are Water Quality Standards?*, EPA (last visited Mar. 3 2020), <https://www.epa.gov/standards-water-body-health/what-are-water-quality-standards> (demonstrating how EPA regulations set goals for our relationship with a waterbody by describing the role of "designated uses" in the Clean Water Act's regulatory scheme).

56. 33 U.S.C. § 1319 (1990).

57. 40 CFR § 131.3(i) (2000).

their integration into overall water quality standards, uncovers opportunities to better protect waterways through a rights-based approach.

A. Laundry List of “Designated Uses” vs. Prioritization of Water System Integrity

The first element of CWA water quality standards is the “designated uses” of the protected waterways.⁵⁸ A waterbody’s “designated uses” include a laundry list of extractive and discharge activities, including industrial, municipal, and agricultural uses.⁵⁹ The list also includes protection of the waterway for fish and other species.⁶⁰ The list itself generally fails to prioritize certain uses over others, though some states do prioritize designated uses by statute.⁶¹ Importantly, these lists legalize continued contamination and extraction of the waters of the United States and exempt key sources of pollution,⁶² despite mounting harm from exempt sources⁶³ and the CWA’s lofty goals.⁶⁴ By failing to eliminate the discharge of pollutants 25 years past the original deadline, the CWA prioritizes existing human waterway uses over the well-being of waterways and nature’s needs.⁶⁵ Human pressure will increasingly marginalize waterways’ needs.

By contrast, a nature’s rights-based approach to regulation would recognize that we must protect the well-being of waterways, both from a moral and a utilitarian perspective. The “moral test of government, and the measure of its strength, is how it treats its most vulnerable members—

58. 40 C.F.R. § 131.10; *see also* U.S. EPA, Key Concepts Module 2: Use, EPA (2018), <https://www.epa.gov/wqs-tech/key-concepts-module-2-use>. *See generally* U.S. EPA, EPA-832-B-12-002, WATER QUALITY HANDBOOK, DESIGNATION OF USES 2.1 (2012) (describing the structure of “use classification systems”).

59. *Id.*

60. 40 C.F.R. § 131.2.

61. *See, e.g.*, CAL. WATER CODE § 106.3(a) (2013) (“It is hereby declared to be the established policy of this State that the use of water for domestic purposes is the highest use of water and that the next highest use is for irrigation.”)

62. *See, e.g.*, 33 U.S.C. § 1342(l)(1), 1362(12), 1362(14) (exempting most agricultural operations from the federal permitting program and defining “discharge” and “point source.”); N.O.A.A., *Gulf of Mexico ‘dead zone’ is the largest ever measured* (Aug. 2, 2017), <https://www.noaa.gov/media-release/gulf-of-mexico-dead-zone-is-largest-ever-measured>.

63. *See, e.g.*, USGS, AGRICULTURE—A RIVER RUNS THROUGH IT—THE CONNECTIONS BETWEEN AGRICULTURE AND WATER QUALITY, Circular 1433, <https://pubs.usgs.gov/circ/1433/cir1433.pdf>.

64. *See generally* 33 U.S.C. § 1251(a) (listing the goals of the Clean Water Act).

65. *See* NATIONAL WATER QUALITY INVENTORY REPORT TO CONGRESS (2017), *supra* note 49.

particularly with respect to meeting their most basic needs.”⁶⁶ From a utilitarian perspective as well, sound waterways are critical not only to human health, but to life itself.⁶⁷

Rather than formulating a laundry list of individual designated uses that focus on human extraction, a rights-based regulatory approach would prioritize protection of natural water systems systemically and for basic needs first, through strategies such as significantly enhanced pollution controls, mandatory groundwater use regulations, flow assurances, and restoration projects. Prioritization of a rights-based approach for waterways’ basic needs extends as well to protection of the human right to water for basic needs, such as drinking, personal sanitation, and cooking – again, above the use of water simply for profit.⁶⁸ Only by ensuring the integrity of water systems for fundamental environmental and human needs can we ensure that human use beyond such needs is healthy.

B. Criteria to Support “Designated Uses” vs. Criteria to Protect Rights

The second element the CWA water quality standards is science-based water quality criteria to support the specific designated uses of each water body.⁶⁹ Criteria can be defined as either numeric limits or narrative statements.⁷⁰ The U.S. EPA publishes recommended science-based criteria for particular uses, but states and tribes can adopt more stringent criteria.⁷¹ These criteria are intended to regulate waterway uses, such as the amount and type of contamination that can be released, thereby ostensibly

66. DEBORAH A. SIVAS ET AL., CALIFORNIA WATER GOVERNANCE FOR THE 21ST CENTURY 4 (Stanford Law Sch. Envtl & Nat. Res. Law and Policy Program, 2017), <https://law.stanford.edu/publications/california-water-governance-for-the-21st-century/>.

67. *Id.*

68. United Nations General Assembly, Resolution A/RES/64/292, “The Human Right to Water and Sanitation” (July 28, 2010), http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/64/292; U.N., Comm. On Econ., Cultural and Soc. Rights, *Substantive Issues Arising in the Implementation of the International Covenant on Economic, Social and Cultural Rights*, ¶ 1 (Jan. 20, 2003), https://www2.ohchr.org/english/issues/water/docs/CESCR_GC_15.pdf (stating that the “[t]he human right to water... is a prerequisite for the realization of other human rights”). *But see* SIVAS ET AL., *supra* note 72 at 4 (stating that California’s “human right to water” law remains voluntary. As such, there has been a growing call for stronger mandates around the right to water for fundamental needs. “Water is a public and environmental good, of a critical, life-sustaining nature. As such, the basic water needs of both humans and natural systems must be prioritized over other water uses”).

69. 40 C.F.R. § 131.11.

70. 40 C.F.R. § 131.11(b); 40 C.F.R. § 131.3(b), (i).

71. 40 CFR § 131.4(a); U.S. E.P.A., Key Concepts Module 3: Criteria, EPA (2018), <https://www.epa.gov/wqs-tech/key-concepts-module-3-criteria>.

protecting the “chemical, physical, and biological integrity” of the water body.⁷²

The CWA’s outdated, reductionist system of isolating scientific analysis by species and media, rather than engaging in modern, systems-based science, inhibits the effectiveness of its standards.⁷³ More broadly, water law and science should consider all sources of pollution in all bodies of water, including groundwater, as well as other elements of waterway integrity, such as flow and native species and habitats. As applied today, CWA science assesses natural systems as an aggregation of elements, rather than a system of inter-relationships.⁷⁴ Modern science articulates these interconnected systems, and the regulatory standards must change to reflect this in order to advance the rights of natural systems to well-being.⁷⁵

C. “Antidegradation” v. Restoration

The third leg of the CWA standards stool, the “antidegradation policy,” protects existing uses of waterways and exceptionally healthy waterways.⁷⁶ In practice, however, the policy is implemented sporadically and inadequately.⁷⁷ This practice reinforces the concept that prioritizes human economic use over waterway integrity.⁷⁸

A rights-based approach would set a higher bar not only for minimally protecting, but also for continuously improving, waterway health and well-being. Existing environmental laws, including the CWA, generally ignore a broad duty to continually improve existing waterway health.⁷⁹ Future, rights-based environmental laws and regulations, however, could

72. See generally 33 U.S.C. § 1251(a).

73. Aron J., et. al., *Using Ecosystem Function in the Clean Water Act*, EPA/600/R-17/138 (2017) (describing how new ecosystem science could help reform the CWA).

74. For example, the California State Water Resources Control Board recently fought a lawsuit to compel it to regulate waterway flow under the Clean Water Act as needed to ensure waterway health. Env’l Law Network, “Environmental Groups Sue State Water Resources Control Board Over Listing Impaired Water Bodies Under the Clean Water Act” (November 8, 2017).

75. See generally Carol M. Rose, *Environmental Law Grows Up (More or Less), and What Science Can Do to Help*, 9 LEWIS & CLARK L. REV. 273, 288 (2005).

76. 40 C.F.R. § 131.12; see also U.S. EPA, Water Quality Standards Academy, “Key Concepts Module 4: Antidegradation”; at: <https://www.epa.gov/wqs-tech/key-concepts-module-4-antidegradation>.

77. Sandra B. Zellmer & Robert L. Glicksman, *Improving Water Quality Antidegradation Policies*, 4 GEO. WASH. J. ENERGY & ENVTL. L. 1, 7, 9 (2013) (noting the “empty shell” of state antidegradation programs, lacking in substance, “at best, obscure,” and vulnerable to judicial challenges).

78. *Id.* at 13.

79. See Laitos, *supra* note 32 (describing the lack of affirmative action required by environmental laws).

effectively recognize this duty. For example, new laws and regulations could require restoration of natural systems that go beyond making the ecosystem whole, remediating increasingly more of the long-term, anthropogenic damage done. Standards assessing and measuring ecosystem health would increase accountability in such efforts to repair anthropogenic damage to the natural world.⁸⁰

IV. DEVELOPING REGULATORY STANDARDS CONSISTENT WITH THE RIGHTS OF NATURE

As various Symposium speakers emphasized, individuals cannot assert fundamental human rights in isolation.⁸¹ “The natural world on the planet Earth gets its rights from the same source that humans get their rights, from the universe that brought them into being.”⁸² The rights of nature framework is essential to understanding and implementing individuals’ fundamental duties to one another and the natural environment. Similarly, elements of the natural world can exercise their rights only if they are healthy.

A growing number of statutes, constitutional provisions, and court decisions worldwide recognize the inherent rights of ecosystems and species to exist, thrive, and evolve.⁸³ Within this expanding rights of nature framework, how could U.S. laws and regulations accurately capture standards of “healthy” ecosystems and species populations?⁸⁴

One approach is to describe “healthy” systems as essentially pristine, or unaffected by humans. This approach could be useful for comparison purposes and arguably could act as a policy goal. However, this approach is not broadly applicable as a management tool. Moreover, the definition of the term “pristine” today is elusive⁸⁵ and prevents options for respectful human-nature interactions.

80. John Cairns, Jr., GOALS AND CONDITIONS FOR A SUSTAINABLE WORLD 27 (2002).

81. *Vermont Journal of Environmental Law 2019 Symposium*, VIMEO, <https://livestream.com/vermontlawschool/VJEL2018> (last visited Mar. 3 2020).

82. THOMAS BERRY, EVENING THOUGHTS: REFLECTING ON EARTH AS A SACRED COMMUNITY 149 (Mary Evelyn Tucker ed. 2006) [hereinafter EVENING THOUGHTS: REFLECTING ON EARTH AS A SACRED COMMUNITY].

83. Houck, *supra* note 2 at 3–6.

84. See generally Craig M. Kauffman and Linda Sheehan, “The Rights of Nature: Guiding Our Responsibilities through Standards,” in ENVIRONMENTAL RIGHTS – THE DEVELOPMENT OF STANDARDS (Cambridge Univ. Press 2019).

85. See Rachel Nuwer, *There's No Such Thing as Truly 'Pristine' Nature Anymore*, BRIT. BROADCASTING CORP. FUTURE (Feb. 8, 2016), <http://www.bbc.com/future/story/20160208-theres-no-such-thing-as-truly-pristine-nature-anymore>.

Examining the human right to health is another approach for defining “healthy” ecosystems. The World Health Organization emphasizes that “health” is not simply the “absence of disease or infirmity.”⁸⁶ Unfortunately, “absence of disease or infirmity” is how “healthy” ecosystems are often defined.⁸⁷ For example, the CWA’s backstop provision to protect waterways triggers when waterway pollution violates standards or is just about to violate standards.⁸⁸ Waterways above the threshold standards are deemed “clean.”⁸⁹ Most U.S. environmental laws and regulations, such as the Wild and Scenic Rivers Act⁹⁰ and the Outstanding National Resource Waters protections⁹¹ presume that flourishing ecosystems occur only in special circumstances. The overwhelming default in U.S. environmental laws allows for degradation up to a certain point. This approach injures both environmental and human health.⁹²

Since the enactment of U.S. environmental laws in the early 1970s, major advances in disciplines, such as systems science, modeling, and machine learning, have allowed scientists to approach definitions of natural system health,⁹³ beyond the mere “absence of disease or infirmity.”⁹⁴ For example, some marine scientists have proposed that a “healthy ecosystem” is one that evolves and perpetuates itself within the context of its expected natural lifespan in the face of external stress.⁹⁵ Scientists thus can look for variations in the expected natural rate of change, such as acceleration or deceleration of extinction rates, as indicators of health.⁹⁶ This “healthy

86. Constitution of the WORLD HEALTH ORGANIZATION [WHO], <https://www.who.int/about/mission/en/> (last visited Mar. 3 2020).

87. Robert Costanza & Michael Mageau, *What is a healthy ecosystem?* 33 *AQUATIC ECOLOGY* 105, 106 (1999).

88. *See generally* 33 U.S.C. § 1313(d), 40 CFR § 122.44.

89. 40 C.F.R. § 122.44(d).

90. Wild and Scenic Rivers Act, 16 U.S.C. §§ 1271-1287 (1968).

91. 40 CFR § 131.12(a)(3).

92. *Id.*

93. *See, e.g.*, Peter H. Verburg et al., *Land System Science: Between Global Challenges and Local Realities*, 5 *CURRENT OPINION IN ENV'T'L SUSTAINABILITY*, 433, 433-34 (2015) (describing the evolution of Land System Science) and Camille v. Otero-Phillips, Comment, *What's in the Forecast? A Look at the EPA's Use of Computer Models in Emissions Trading*, 24 *RUTGERS COMPUTER & TECH L.J.* 187, 204-12 (1998) (detailing the EPA's computerized air pollution models and their uses).

94. Costanza & Mageau, *supra* note 100, at 106.

95. DAVID RAPPORT ET AL., *ECOSYSTEM HEALTH* 232 (Blackwell Sci., Inc. eds. 1998) [*LINDA TO FIND ALTERNATIVE*]

96. *See, e.g.*, Gerardo Ceballos et al., *Accelerated Modern Human-Induced Species Losses: Entering the Sixth Mass Extinction*, *SCIENCE ADVANCES* (June 2015), <https://www.ncbi.nlm.nih.gov/books/NBK219273>.

ecosystem” definition recognizes not only that every natural system will continually flourish, but that healthy natural systems will change.⁹⁷

New research has deconstructed “natural systems” into measurable elements.⁹⁸ Each of these elements, both individually and combined, are important indicators of ecosystem health.⁹⁹ For example, new studies propose that a healthy ecosystem is one that maintains its structure (organization)¹⁰⁰ and function (vigor)¹⁰¹ over time, in the face of external stress (resilience).¹⁰² Such scientific advancements are critical for U.S. environmental regulatory standards to transition and reflect nature’s right to health.

Finally, a successful regulatory system includes not only substance but also procedure. That is, waterways themselves should have a voice in policy deliberations. For example, a nation or state could appoint independent expert “guardians” to speak for the natural systems and represent their interests during the regulatory process and public comment.¹⁰³ This would improve regulations to meet natural systems’ needs, despite prevailing economic biases and forces.¹⁰⁴

CONCLUSION

Ethical considerations always underlie law and policy decisions.¹⁰⁵ Ignoring the role of ethics and values does not necessarily make policymaking objective, scientifically or otherwise.¹⁰⁶ On the contrary, decision-making which ignores ethical considerations simply reflects dominant ethics and values, whether held consciously or unconsciously.¹⁰⁷

97. Costanza & Mageau, *supra* note 100, at 112.

98. See, e.g., D.J. Rapport et al., *Assessing Ecosystem Health*, 13 TREE 397, 397, 399 (Oct. 1998), <https://www.pdx.edu/sites/www.pdx.edu.sustainability/files/Rapport%20et%20al.%201998.pdf> (explaining different approaches to assess ecosystem health).

99. *Id.* at 397.

100. RAPPORT ET AL., *supra* note 110 at 26, 29 (noting the increasingly prevalent use of “organization” as a measure of ecosystem complexity and interdependence, and one criterion for ecosystem health).

101. *Id.* at 28 (defining “vigor” as a measure of nutrient cycling and productivity, and another criterion for ecosystem health).

102. *Id.*

103. CHRISTOPHER D. STONE, *SHOULD TREES HAVE STANDING? LAW, MORALITY, AND THE ENVIRONMENT* 165–66 (3rd ed. 2010).

104. Morton, 405 U.S. at 743–45 (Douglas, J., dissenting) (arguing that, under certain circumstances, the natural environment should have judicial standing via “spokesmen” or guardians).

105. RAPPORT ET AL., *supra* note 110, at 93.

106. Detlof von Winterfeldt, *Bridging the Gap Between Science and Decision Making*, 110 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 14055, 14055 (Aug. 20, 2013), https://www.pnas.org/content/110/Supplement_3/14055.

107. *Id.* at 14056.

Careful examination of values and goals creates clear policy messages that foster the science needed to achieve desired results, such as healthy ecosystems and species populations. Today, the dominant—often unexamined—societal goal is infinite economic growth, fueled in large part by consuming nature as an economic “resource.”¹⁰⁸ Given that the earth is finite, this economic goal will continue to degrade natural systems, which is simply “not sustainable.”¹⁰⁹ However, current environmental laws implicitly accept this goal,¹¹⁰ and so at best can only slow degradation, rather than achieve healthy ecosystems.¹¹¹

Implementing the ethics and values of “nature as a rights-holder,” rather than “nature as property,” will yield new results. For example, a water allocation system that recognizes both inherent human and nature rights will first allocate water to sustain the fundamental needs of ecological and human populations, and only then serve privatization and profit with the remainder.

Realizing “nature as a rights-holder” in law and policy requires a new narrative, one that seeks for us a goal of becoming a “mutually-enhancing human presence” that gives back more than we take.¹¹² Faced with decisions, we can ask whether an “action enhances the integrity, health, and functioning of the whole Earth Community.”¹¹³ When we critically examine our choices in this way and continually act to improve, we and the earth benefit.

108. See, e.g., Peter Brown and Geoffrey Garver, *RIGHT RELATIONSHIP: BUILDING A WHOLE EARTH ECONOMY* (Berrett-Koehler Publishers 2009).

109. United Nations, “UN Report: Nature’s Dangerous Decline ‘Unprecedented’; Species Extinction Rates ‘Accelerating’,” (May 6, 2019), <https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/>.

110. See *THE GREAT WORK: OUR WAY INTO THE FUTURE*, *supra* note 25.

111. *Id.*

112. *EVENING THOUGHTS: REFLECTING ON EARTH AS A SACRED COMMUNITY*, *supra* note 84, at 150.

113. GLOBAL ALLIANCE FOR THE RIGHTS OF NATURE, *People’s Convention for the Establishment of the International Rights of Nature Tribunal*, <http://therightsofnature.org/convention-rights-of-nature-tribunal/> (last visited Mar. 3, 2020).