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Dale Goble as a Builder of Bridges

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DALE GOBLE AS A BUILDER OF BRIDGES

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ABSTRACT

Ecological scientists and legal scholars think and talk in different ways. The "gulf of mutual incomprehension" that results can impede efforts to address shared problems. Dale Goble bridged this gulf by teaming with ecologists to interpret the Endangered Species Act and develop the concept of conservation-reliant species—species that require ongoing, long-term management to address the factors that threaten them. Most imperiled species are conservation reliant and conservation resources are limited. Meeting the long-term needs of conservation-reliant species will require the blending of ecological science, societal context, and law that Dale Goble has long promoted.

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I. INTRODUCTION

Dealing with today's environmental challenges—the loss of wildlife habitat, the growing imperilment of many species, the threats of invasive species and pollution, and the like—requires knowledge and insights from both ecological science and law. Ecologists generate knowledge about how nature works that is necessary to manage populations and species and forestall the loss of biodiversity, while legal scholars work to frame laws and generate regulations and directives that stipulate how nature should be treated and species can be managed. Yet ecology and law have distinct cultures, distinguished by the different ways ecologists and legal scholars think and talk. At the extreme, the disciplines are separated by a "gulf

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1. We have written this essay as scientists whose thinking about conservation, science, and law has been deepened over many years by our conversations with Dale Goble.

of mutual incomprehension."[2] Dale Goble has had a profound and lasting impact in bridging this gulf.

Ecologists and legal scholars look at the world in different ways. Many of today's environmental laws were crafted under the assumption that natural systems are relatively stable and predictable (the "balance of nature"), whereas ecologists now recognize that nature is dynamic and unpredictable.[3] Ecologists welcome uncertainty, as it provides opportunities for research in new areas; legal scholars strive to minimize uncertainty through laws and rules that prescribe what can or cannot be done.[4] In the legal professions, evidence is marshaled through a probing dissection of prior work and historical precedents, whereas ecologists often use experiments to test hypotheses and explore new questions. Legal scholars aim to define their terms with precision, while ecologists labor in areas with fuzzy definitions (e.g., "ecosystem," "habitat," "species").[5] Consider, for example, the word "recovery," which is central to the Endangered Species Act.[6] Dale has explored how legal minds have wrestled with the multiple meanings of this term.[7] Ecologists tend to use the word loosely but measure it with quantitative precision and statistics and model it with population viability analysis and other tools. To simplify, legal scholars deal with words; ecological scientists deal with numbers.

These differences are reinforced by centripetal forces that lead ecologists and legal scholars to cloister within their own separate worlds. Differences in how they express themselves and the jargon they use fosters communication with one another rather than with others. They publish in different journals, using different style conventions.[8] Legal scholars often write for legal journals that have fewer restrictions on length, topics covered, or requirements for peer reviews, whereas ecologists usually write within a narrow field on topics that are rapidly changing, and their papers customarily undergo multiple peer reviews. Legal scholars are often sole authors; some scientific publications have dozens. These communication patterns are established early in the academic training of legal scholars and

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2. C.P. SNOW, THE TWO CULTURES: AND A SECOND LOOK (Cambridge Univ. Press ed. 1963). The gap in understanding, communication, and respect between scientists and scholars in literature and the arts was highlighted. *Id.*

3. *See, e.g.*, Holly Doremus, *The Endangered Species Act: Static Law Meets Dynamic World*, 32 WASH. U. J.L. & POL'Y, 175 (2010); Ahjond S. Garmestani et al., *Can Law Foster Social-Ecological Resilience?*, 18 ECOLOGY & SOC'Y 37 (2013), http://dx.doi.org/10.5751/ES-05927-180237; *see also* SOCIAL-ECOLOGICAL RESILIENCE AND LAW (Ahjond S. Garmestani & Craig R. Allen eds., 2014).

4. *See generally* Olivia Odom Green et al., *Barriers and Bridges to the Integration of Social-Ecological Resilience and Law,* 13 FRONTIERS ECOLOGY & ENV'T 332 (2015).

5. Weyerhaeuser Co. v. U.S. Fish & Wildlife Serv., 139 S. Ct. 361 (2018). These terms may also confound legal arguments. In *Weyerhaeuser*, the U.S. Supreme Court ruled (unanimously) that critical habitat for an endangered species (a legal designation) must, in the words of Chief Justice Roberts, "also be habitat." *Id.* at 368. The Court then passed the question of what constitutes "habitat" back to a lower court for resolution. *Id.* at 370.

6. The Endangered Species Act of 1973, 16 U.S.C. §§ 1531–1544 (2018).

7. *See* Dale D. Goble, *The Endangered Species Act: What We Talk About When We Talk About Recovery*, 49 NAT. RESOURCES J. 1 (2009).

8. JOHN A. WIENS, ECOLOGICAL CHALLENGES AND CONSERVATION CONUNDRUMS: ESSAYS AND REFLECTIONS FOR A CHANGING WORLD 7 (2016). Ecological journals, for example, generally do not allow footnotes, whereas some of the most informative insights in legal journals are often embedded in footnotes. *Id.*

scientists and are reinforced as individuals mature professionally and are rewarded for contributions that are recognized by their peers.

Despite these differences, legal scholars and ecologists are often interested in the same problems. Here, our emphasis is on the conservation of imperiled species. While scientists generate the knowledge on such things as population vital rates, habitat requirements, distributions, and interactions needed to manage a species within its biological context, legal scholars work to frame laws and generate regulations and directives that stipulate how a species can be managed in a socioeconomic and political context. Both are essential.

II. BUILDING BRIDGES

Dale Goble has bravely reached across this science-law gap to work closely with ecologists on the analysis of conservation laws and their outcomes.[9] We say "bravely" because it takes courage to move from the legal field into the science field (and vice versa) given the differences in what drives practitioners from the two fields, the ways in which these practitioners communicate, and the forces that bind them to colleagues. Dale has sought to strengthen both fields by translating elements of the law into biologically relevant and understandable terms and by listening to and learning from ecologists.[10] He has emphasized the importance to scientists involved in conservation of understanding what law does (and does not) do.[11] Controversies and conflicts may arise when science indicates what *should* be done (e.g., to avoid extinction) and law says what *must* be done (e.g., to comply with laws and regulations), narrowing the options for managing resources. As Dale and his coauthors stated in the Preface to *Wildlife Law: Cases and Materials,* "Those who build edifices for preserving ecology or biological diversity without understanding the logic of wildlife law risk having their towers collapsed by long-standing community expectations embodied in wildlife law defended by territorial state wildlife agencies."[12] In other words, law encapsulates a reality against which scientific aspirations must be checked. But ecology defines the biological reality that determines whether law is doing what it aims to do.

So, ecologists and legal scholars must develop mutual understanding and trust. Our journey down this pathway began over 30 years ago, shortly after Mike Scott arrived on the campus of the University of Idaho. Interested in gaining a better understanding of the science-law interface, Mike strolled over from the College of Natural Resources to the College of Law to meet Professor Goble (and perhaps borrow a tie from his legendary tie collection). Mike found a kindred spirit, as interested in wildlife and conservation as Mike was in wildlife law. Mike quickly realized that in addition to holding an endowed chair in the College of Law, where

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9. J. Michael Scott et al., *Recovery of Imperiled Species Under the Endangered Species Act: The Need for a New Approach,* 3 FRONTIERS ECOLOGY & ENV'T 383 (2005); *see also* Dale D. Goble, *Evolution of at Risk Species Protection in* THE ENDANGERED SPECIES ACT AT THIRTY: VOLUME 2: CONSERVING BIODIVERSITY IN HUMAN-DOMINATED LANDSCAPES 6 (2006).

10. *See* Goble, *supra* note 7.

11. *See generally* ERIC T. FREYFOGLE & DALE D. GOBLE, WILDLIFE LAW: A PRIMER (2009).

12. DALE D. GOBLE ET AL., WILDLIFE LAW: CASES AND MATERIALS, at vi (3rd ed. 2017).

he taught courses as diverse as torts, administrative law, wildlife law, legal history, natural resource law, and public land law, Dale was also an Adjunct Professor in the Philosophy, Environmental Sciences, and Water Resources Departments. He was building bridges.

The enactment of the Endangered Species Act in 1973 provided the impetus to advance Mike and Dale's collaboration. The Endangered Species Act is the foundation for conservation law in the United States (and, arguably, much of the world). Together, Dale and Mike explored the nuances of the law and its implications for the conservation and management of imperiled species.[13] As the 30th anniversary of passage of the Endangered Species Act approached, Dale, Mike, and Frank Davis, a colleague in environmental science at the University of California Santa Barbara, assembled a diverse group of politicians, lawyers, scientists, state and federal agency personnel, conservation groups, and stakeholder organizations to assess the effectiveness of the Act in conserving endangered species. The resulting two-volume publication synthesized both scientific and legal perspectives on the Act and its implementation; it has become the foundation for subsequent discussions about the Act (and its controversies).[14]

The Endangered Species Act embodied an expectation that affording legal protection to an imperiled species (i.e., listing) would prompt management actions that would enable it to recover so that the special provisions of the Act would no longer be needed—it could be delisted.[15] Ecology suggested otherwise. Mike's experiences dealing with endangered bird species in Hawai'i and the California condor (*Gymnogyps californianus*) in California had shown that management of such species would need to be ongoing—there were no quick fixes.[16] Dale brought his knowledge of the Endangered Species Act and wildlife law to bear on this ecological reality, and the concept of *conservation reliance* emerged.[17] This is when John Wiens and, later, Beatrice Van Horne joined in.

III. WHAT IS CONSERVATION RELIANCE?

An imperiled species is conservation reliant if it is vulnerable to threats that persist and requires continued management intervention to prevent a decline toward extinction or to maintain a population.[18] The emphasis in this definition is on the biology of the species and its capacity to respond to management actions

13. *See* Dale D. Goble et al., *Local and National Protection of Endangered Species: An Assessment,* 2 ENVTL. SCI. & POL'Y 43 (1999); Maile C. Neel et al., *By the Numbers: How is Recovery Defined by the US Endangered Species Act?*, 62 BIOSCIENCE 646 (2012).

14. 1 THE ENDANGERED SPECIES ACT AT THIRTY: RENEWING THE CONSERVATION PROMISE (Dale D. Goble, J. Michael Scott & Frank W. Davis eds., 2006); 2 THE ENDANGERED SPECIES ACT AT THIRTY: CONSERVING BIODIVERSITY IN HUMAN-DOMINATED LANDSCAPES (Dale D. Goble, J. Michael Scott & Frank W. Davis eds., 2006).

15. Dale D. Goble, *A Fish Tale: A Small Fish, the ESA, and Our Shared Future*, 40 ENVTL. L. 339, 339 (2010).

16. *See* J. MICHAEL SCOTT ET AL., SHEPHERDING NATURE: THE CHALLENGE OF CONSERVATION RELIANCE 55-60 (2020).

17. *See generally* ERIC T. FREYFOGLE & DALE D. GOBLE, WILDLIFE LAW: A PRIMER (2009); *see also* GOBLE ET AL., *supra* note 12.

18. SCOTT ET AL., *supra* note 16, at 3.

when they are implemented. This is the realm of ecological science. But conservation reliance is also determined by the effectiveness of management interventions and how (or whether) they are implemented. These actions are influenced by societal forces, particularly laws and policies. The concept of conservation reliance therefore lies at the intersection where the cultures of ecological science and of law and policy merge.

The concept of conservation reliance was initially tied closely to the provisions of the Endangered Species Act.[19] For example, an analysis of Recovery Plans developed under the Act indicated that 84% of the listed species would require long-term management intervention, even if they were to meet recovery goals—they were conservation reliant.[20] As thinking about the concept evolved, however, it became apparent that the close linkage with the Act conflated the conservation status of a species, which depends on the threat factors and the species' demography, with its legal status (e.g., listed or delisted).[21] We now recognize that the conservation reliance of a species is separate from how the species is treated under the law.[22]

An example may clarify this point. The Kirtland's warbler (*Setophaga kirtlandii*) was initially listed by the U.S. Fish and Wildlife Service as Endangered in 1967 and as Threatened by IUCN in 1988.[23] In response to targeted management of the factors that threatened the species (nest parasitism by brown-headed cowbirds, *Molothrus ater*, and loss of habitat), the species began a gradual recovery.[24] In 1994, its IUCN status was changed to Vulnerable and in 2005 to Near Threatened.[25] The species was declared recovered and delisted by the U.S. Fish and Wildlife Service in 2019.[26] To maintain the population gains, however, cowbird management and habitat maintenance must continue. Regardless of its legal status, the Kirtland's warbler remains conservation reliant.[27]

Because a conservation-reliant species will require management even after the specific protections of laws are no longer available, other approaches may be needed. In some situations, private groups or individuals may be able to step in and shoulder the management responsibilities. This is what Dale, Mike, and others

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19. J. Michael Scott et al., *Recovery of Imperiled Species Under the Endangered Species Act: The Need for a New Approach,* 3 FRONTIERS ECOLOGY & ENV'T 383 (2005).

20. J. Michael Scott et al., *Conservation-Reliant Species and the Future of Conservation,* 3 CONSERVATION LETTERS 91 (2010).

21. *See* Daniel J. Rohlf et al., *Conservation-Reliant Species: Toward a Biology-Based Definition,* 64 BIOSCIENCE 601 (2014); Dale D. Goble et al., *Response to: "Conservation-Reliant Species: Toward a Biology-Based Definition,"* 64 BIOSCIENCE 857 (2014).

22. Scott, *supra* note 20, at 91.

23. IUCN, *Kirtland's Warbler*, RED LIST OF ENDANGERED SPECIES, https://www.iucnredlist.org/species/22721722/132146817 (last assessed Aug. 7, 2018).

24. SCOTT ET AL., *supra* note 16, at 286.

25. IUCN, *supra* note 23.

26. Endangered and Threatened Wildlife and Plants, 84 Fed. Reg. 54,436 (Nov. 8, 2019) (to be codified at 50 C.F.R. pt. 17).

27. *See* Carol I. Bocetti et al., *Using Conservation Management Agreements to Secure Postrecovery Perpetuation of Conservation-Reliant Species: The Kirtland's Warbler as a Case Study,* 62 BIOSCIENCE 874 (2012).

envisioned in Recovery Management Agreements or Conservation Management Agreements.[28] Such agreements are legally binding contracts that transfer management authority from the federal agency responsible for a listed species to another entity (a federal land-management agency; a state, tribal, county, or municipal government; or a non-governmental organization) that commits resources to the long-term management of the species.[29] The species can then be delisted when it has met recovery goals, allowing for a broader array of management actions to be undertaken.[30] Development of such agreements was a critical factor in the decision to delist the Kirtland's warbler.[31]

IV. THE CHALLENGE OF CONSERVATION RELIANCE

The queue of species headed toward possible extinction is long. If the proportion of species listed under the Endangered Species Act as being conservation reliant (84%) applies more broadly to at-risk species, over 23,500 of the 30,000+ species currently listed as threatened by IUCN[32] are conservation reliant. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) projects that around 1 million species may already face extinction unless rapid actions are taken.[33] Applying the same proportion to this projection indicates the potential future magnitude of conservation reliance.

Currently, management of many of the species listed under the Endangered Species Act is woefully underfunded.[34] Globally, the situation is even more dire. The long-term demands of conservation-reliant species will stretch resources ever thinner. Societal commitments to conservation will be sorely tested. Not all needs can be met. Rather than spread limited resources over a burgeoning number of conservation-reliant species, it will be necessary to prioritize conservation efforts, providing enough to some species to ensure their persistence or enable their full recovery while letting other species go without.

But how to prioritize? Ecological scientists have developed several protocols for prioritizing species for conservation attention. One of these approaches, the Project Prioritization Protocol,[35] is being used to allocate resources among at-risk

28. Scott, *supra* note 20, at 91; *see also* Dale D. Goble & J. Michael Scott, *Recovery Management Agreements Offer Alternative to Continuing ESA Listings,* 31 FISHERIES 35, 35–36 (2006).

29. Goble & Scott, *supra* note 28, at 35–36.

30. *Id.*

31. *See generally* Endangered and Threatened Wildlife and Plants; Removing the Kirtland's Warbler From the Federal List of Endangered and Threatened Wildlife, 84 Fed. Reg. 54,436 (Oct. 9, 2019).

32. *Species*, IUCN, https://www.iucn.org/theme/species (last visited Feb. 23, 2020).

33. INTERGOVERNMENTAL SCI.-POL'Y PLATFORM ON BIODIVERSITY & ECOSYSTEM SERS., SUMMARY FOR POLICYMAKERS OF THE GLOBAL ASSESSMENT REPORT ON BIODIVERSITY & ECOSYSTEM SERVS. 4 (May 29, 2019), https://ipbes.net/sites/default/files/ipbes_7_10_add.1_en_1.pdf.

34. *See* Leah R. Gerber, *Conservation Triage or Injurious Neglect in Endangered Species Recovery*, 113 PNAS 3563 (2016).

35. Liana N. Joseph et al., *Improving Methods for Allocating Resources Among Threatened Species: The Case for a New National Approach in New Zealand*, 14 PAC. CONSERVATION BIOLOGY 154 (2008).

species in New South Wales, Australia.[36] In the United States, the federal agencies responsible for species covered by the Endangered Species Act have procedures for prioritizing species for attention, although they are not followed consistently.[37] Any prioritization system is sensitive to the criteria used and how they are weighted in the calculations. Most current approaches emphasize science-based criteria, but socioeconomic factors are no less important (although they are more difficult to quantify). And prioritization inevitably involves value judgments; different people value species, and nature, in different ways. How should economic benefits, management costs, population status, genetic diversity, charisma, cultural significance, or the sanctity of life enter into prioritization rankings?

Most prioritization approaches emphasize short-term returns on investments. Conservation reliance changes the calculations. By definition, conservation-reliant species will require management interventions, and the associated costs, for a long time. Because so many imperiled species are conservation reliant, the long-term costs (together with the probability of success) should be included in calculating priorities. How to do this, however, remains a work in progress.

V. STRENGTHENING THE BRIDGE

The challenges that conservation reliance poses to the conservation and management of imperiled species are great. Just as the concept of conservation reliance emerged from the meeting of ecology (Mike Scott) with law (Dale Goble), so also might new insights and fresh approaches follow from strengthening the bridge between the cultures.

Some approaches could involve adjustments in existing laws and regulations. Currently the Departments of Interior and Commerce are responsible for implementing the Endangered Species Act through the US Fish and Wildlife Service and National Oceanic and Atmospheric Administration.[38] When their actions might affect listed species, other federal land- or water-management agencies must coordinate with the responsible agencies under the dictates of the Endangered Species Act or the National Environmental Policy Act.[39] Instruments such as Candidate Conservation Agreements, Candidate Conservation Agreements with Assurances, Safe Harbor Agreements, and Conservation Management Agreements provide incentives for non-federal entities such as state or local governments, tribes, non-governmental organizations, or private landowners to enter into voluntary partnerships with the responsible agencies to conserve endangered species (Kirtland's warbler is an example). These are important ways of engaging society in conservation efforts within a legal framework. There should be more opportunities for the private sector to assume legal responsibility for managing

36. OFFICE OF ENV'T & HERITAGE, NSW GOV'T, SAVING OUR SPECIES TECHNICAL REPORT 12 (2013), www.environment.nsw.gov.au/resources/threatenedspecies/SavingOurSpecies/130699sostech.pdf.

37. Scott, *supra* note 20, at 291-317; *see also* Gerber, *supra* note 34.

38. U.S. FISH & WILDLIFE SERVICE, ENDANGERED SPECIES, ESA IMPLEMENTATION (March 3, 2020), https://www.fws.gov/endangered/improving_esa/regulation-revisions.html.

39. 16 U.S.C. § 1536 (2018); 42 U.S.C. § 4332 (2018).

conservation-reliant species, while ensuring that their efforts and support will continue as long as needed. Incentives for sharing management responsibilities should be enhanced and expanded.

Because they need ongoing, long-term attention, conservation-reliant species may end up toward the bottom of priority rankings for conservation. The Departments and agencies responsible for allocating funding and investing resources in the protection and management of imperiled species should develop *and follow* comprehensive prioritization protocols that recognize differences in the duration of management required by different species, balanced against the likelihood of successful outcomes. Investing in the conservation of a species without understanding how long it may take to be successful is short sighted. Because conservation is carried out in a social context (and uses taxpayer dollars), prioritizations are more likely to be followed and effective if they include social and economic considerations from the outset.

The difficulty of bridging a gulf is lessened if the end points are closer together. Ecologists and legal scholars can help by broadening their understanding of each other's world. Understandably, ecologists focus on doing science and may view their role as only delivering scientific findings to policy makers and managers, often without considering the social or economic implications of conservation actions. On the other hand, legal scholars are acutely aware that laws and regulations play out in a societal context, but they may not appreciate how the complexity and dynamics of ecological systems do not fit smoothly into those directives. Neither may recognize the biological, legal, and economic ramifications suggested by the long-term needs of conservation-reliant species.

It is asking too much for ecologists to become conversant with the intricacies of law and legal thinking or for legal scholars to feel comfortable with the uncertainty of ecological systems, in which everything may seem to be contingent on everything else. Neither the three of us nor Dale meets this goal. But our interactions have made us more aware, and more respectful, of the culture at the other end of the bridge. Addressing the challenges of conservation reliance, or of a host of broader environmental problems, will require more bridge builders like Dale. We need to develop a cadre of bridge-builders, conversant in their own disciplines but willing and eager to listen to, learn from, and collaborate with others to span that "gulf of mutual incomprehension."