

Protecting Ecosystems Under The Endangered Species Act: The Sonoran Desert Example

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I. INTRODUCTION: CAN THE TORTOISE STILL BEAT THE HARE?

Can the tortoise even enter the race with its fabled competitor? Unfortunately, the desert tortoise is threatened with extinction and, consequently, most United States populations of this biological wonder are listed under the federal Endangered Species Act (ESA or Act) as a result of rampant habitat loss and other human causes. As desert tortoise numbers have declined, the species has also suffered from disease and predation.¹

Although perhaps not as charismatic as the wolf or grizzly bear, the desert tortoise is an elegant symbol on behalf of endangered species protection overall. It is a wildlife species that has been around for millions of years, with direct evolutionary links to the dinosaurs. But:

A tortoise must survive some twelve to twenty years before it is old enough to attempt to reproduce. Females lay small clutches of three to seven eggs, one clutch per year. Those few eggs not discovered by Gila monsters and coyotes hatch into minute animals that are vulnerable to predators for several years. These problems have always been with the tortoise, but in the past an animal that reached adulthood could expect to live thirty to seventy years more. But now, the fragmentation of their habitat, the complete loss of much lowland desert, the pressures of competition from domestic livestock, and the removal of countless numbers of full-grown animals by human collectors all conspire to reduce the effective life expectancy of adults in the wild. This may make it impossible for the reptiles to replace themselves in most areas, for an animal may not have thirty, forty, or fifty years in which to produce a replacement or two. The prognosis is not good for the desert tortoise.²

The desert tortoise, however, is not listed throughout all of its range. In the Sonoran Desert of southern Arizona, southeastern California and northern Mexico, the desert tortoise is granted virtually no

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1. *See, e.g.*, Listing as Threatened with Critical Habitat for the Beaver Dam Slope Population of the Desert Tortoise in Utah, 45 Fed. Reg. 55654, 55654-65 (Aug. 20, 1980); Emergency Determination of Endangered Status for the Mojave Population of the Desert Tortoise, 54 Fed. Reg. 32326, 32326-31 (Aug. 4, 1989).

2. JOHN ALCOCK, SONORAN DESERT SPRING 54 (1994).

protection under the ESA,³ despite ecological problems in the desert and the existence of other federally listed Sonoran wildlife species such as the Sonoran pronghorn, cactus ferruginous pygmy owl, and lesser long-nosed bat.⁴

The effort to protect the Sonoran Desert tortoise is, in some ways, an “experiment” to see whether the ESA must be directly triggered for the species, or whether the ESA and other complementary law can provide the broader means to protect the Sonoran Desert tortoise through existing standards and programs for other imperilled species. It is frequently forgotten that the ESA’s first purpose is “to provide a means whereby the *ecosystems* upon which endangered species and threatened species depend may be conserved.”⁵ This article examines efforts to conserve the Sonoran Desert ecosystem under the ESA and related law.⁶ While protecting threatened and endangered wildlife species is very important, and sometimes the only tangible way to gain concomitant protections for the habitat of such species, individual species such as the desert tortoise – whether they are federally listed or not – cannot survive or recover without the conservation of entire ecosystems.⁷ Using the Sonoran Desert ecosystem as a case study, we conclude that a foresighted and synergistic application of the ESA, where applicable, can protect imperilled ecosystems far more effectively than is commonly thought.⁸

In order to understand the ESA’s ecosystem potential, we must first examine the mechanisms that protect individual species under the Act.⁹ We will focus on Sonoran Desert species, and walk through the

3. Technically, the Sonoran Desert tortoise is listed pursuant to the similarity of appearance provision of the ESA “for purposes of regulating commerce and taking.” Determination of Threatened Status for the Mojave Population of the Desert Tortoise, 55 Fed. Reg. 12178 (Apr. 2, 1990); 16 U.S.C. § 1533(e) (1999).

4. See generally THE NATURE CONSERVANCY ET AL., AN ECOLOGICAL ANALYSIS OF CONSERVATION PRIORITIES IN THE SONORAN DESERT ECOREGION (Apr. 2000) (on file with authors).

5. 16 U.S.C. § 1531(b) (emphasis added); see also *id.* § 1534(a) (directing the Secretaries of Interior and Commerce, as well as the Secretary of Agriculture on behalf of the Forest Service, to “establish and implement a program to conserve fish, wildlife, and plants, including those which are listed as endangered species or threatened species,” but not limited to such listed species).

6. From the outset, we note that laws such as the National Environmental Policy Act, 42 U.S.C. §§ 4321-4345 (1989), various federal public lands statutes, state and local law, and international law all contribute to the overall health and welfare of the Sonoran Desert.

7. The ESA does not define “ecosystem.” We will use the definition provided by Reed F. Noss and Allen Y. Cooperrider, “a dynamic complex of plant, animal, fungal, and microorganism communities and their associated nonliving environment interacting as an ecological unit.” REED F. NOSS & ALLEN Y. COOPERRIDER, SAVING NATURE’S LEGACY: PROTECTING AND RESTORING BIODIVERSITY 391 (1994).

8. See, e.g., REED F. NOSS & ROBERT L. PETERS, DEFENDERS OF WILDLIFE, ENDANGERED ECOSYSTEMS: A STATUS REPORT ON AMERICA’S VANISHING HABITAT AND WILDLIFE (Dec. 1995) (on file with authors).

9. For a good discussion of why the legal “handles” afforded by the ESA to individual species is so important, see Oliver Houck, *On the Law of Biodiversity and Ecosystem Management*, 81 MINN. L. REV. 869 (1997).

Act's listing and critical habitat requirements, recovery planning process, consultation mandate, taking prohibition, and conservation planning provisions. We conclude that the ESA's mix of cooperation and constructive conflict is probably the Sonoran Desert's best hope for long-term protection.

II. ESA LISTING AND CRITICAL HABITAT REQUIREMENTS

In order to trigger the ESA's protections, the Fish and Wildlife Service must first list species as threatened or endangered and then designate the critical habitat of that species.¹⁰ Because only the best available science, and no socio-economic data, is supposed to guide listing decisions,¹¹ one could (incorrectly) assume that this early ESA process would be relatively uncontroversial. The main source of tension is the fact that listing a species triggers most of the Act's substantive protections. In one example, until environmentalists sued the U.S. Fish and Wildlife Service (FWS), the agency refused to list the Sonoran's flat-tailed horned lizard under the Act.¹² The lizard is a "small cryptically colored iguanid" that has adapted to the harsh conditions of the western Sonoran Desert but now, as a result of various "human activity," no longer inhabits at least "34% of its historic range."¹³ Although the FWS identified the species as a candidate for listing in 1982, and elevated its status in 1989, it was not until late 1993 that the lizard was proposed for listing under the ESA.¹⁴ The FWS subsequently missed the one-year deadline for finalizing the proposed rule,¹⁵ and an anti-environmental rider attached to a military spending bill precluded any federal listing action until April 1996.¹⁶

Despite the lifting of the ESA listing moratorium, the FWS was not quick to act upon the lizard (or other species). This is because several federal agencies and local political interests did not want the listing of this species to interfere with their present plans. The U.S. Marine Corps wants to expand its military training operations near Yuma, Arizona in lizard habitat. The U.S. Bureau of Reclamation seeks to divert water and build new canals in lizard habitat. The U.S. Bureau of Land Management does not relish conflict with off-road

10. See 16 U.S.C. § 1533(a)(2)(3). For certain marine species, the National Marine Fisheries Services is responsible for listing species under the ESA.

11. See *id.* § 1533(a)(1), (b)(1).

12. See generally *Defenders of Wildlife v. Norton*, 258 F.3d 1136, 1146-47 (9th Cir. 2001) (ordering the issue remanded back to the FWS to re-consider listing the flat-tailed horned lizard based upon the court's decision).

13. Proposed Rule to List the Flat-tailed Horned Lizard as Threatened, 58 Fed. Reg. 62624, 62626 (Nov. 29, 1993).

14. *Id.*

15. 16 U.S.C. § 1533(b)(6)(A)(i) (imposing a one year deadline).

16. See *Norton*, 258 F.3d at 1139-40 (discussing Pub. L. No. 104-6, 109 Stat. 73 (1995), which imposed the ESA listing moratorium that President Clinton lifted pursuant to a Congressional resolution, H.R. 3019 (104th Cong.)).

motorized vehicle users. Local politicians wish to continue development in southern Arizona and southern California, two of the most rapidly urbanizing areas in the world but smack in the middle of the lizard's range. So instead of listing the species, the FWS and its federal partners patched together a "conservation agreement" (CA) just weeks before a final listing decision was due.¹⁷ "Critical to the implementation of the CA was the designation of five 'management areas' subject to protective measures, including the monitoring of lizard populations, limitation of habitat disturbance including off-highway vehicle use, and the acquisition of private inholdings."¹⁸ Thus, the FWS declined to list the lizard, giving three reasons for its reversal of the proposed rule: 1) that population trend data did not conclusively demonstrate significant population declines; 2) that some of the threats to the lizard's habitat had grown less serious since the proposed rule was issued; and 3) that the conservation agreement would "ensure future reductions in threats."¹⁹

Despite a district court judge who bought these arguments, the Court of Appeals fortunately saw through the political game flattening the flat-tailed horned lizard, and reversed. Not only did the court reject the idea that threats had grown less severe and that population trends had stabilized, but it also stated that "it is unclear how the CA would have mitigated threats to a *significant portion of its range*" given that so many of the CA's provisions were tentative or clearly not yet implemented.²⁰ For now at least, the specter of voluntary "conservation agreements" has not prevented courts from ordering the listing of species in proven biological need of protection.²¹

Similar controversy has plagued the listing and critical habitat decisions for the cactus ferruginous pygmy owl, another Sonoran Desert species. The pygmy owl is on the brink of extinction in the United States. At the time the species was listed under the ESA, it was estimated that fewer than twenty-two individuals existed in Arizona.²² Threats to the pygmy owl's existence include the historic and ongoing loss of its habitat resulting from a variety of development activities including industrial and residential development or sprawl, grazing,

17. *Id.*

18. *Id.* at 1140.

19. Withdrawal of the Proposed Rule to List the Flat-Tailed Horned Lizard as Threatened, 62 Fed. Reg. 37852 (July 15, 1997).

20. *Norton*, 258 F.3d at 1146. This court held that the FWS had unlawfully failed to analyze whether the lizard was threatened or endangered in a "significant portion of its range." 16 U.S.C. § 1532(6), (19).

21. *See, e.g.*, *Friends of the Wild Swan v. Fish & Wildlife Serv.*, 945 F. Supp. 1388 (D.Or. 1996) (discussing the bull trout); *Southwest Ctr. for Biological Diversity v. Babbitt*, 939 F. Supp. 49 (D.D.C. 1996) (discussing the Queen Charlotte goshawk); *Biodiversity Legal Found. v. Babbitt*, 943 F. Supp. 23 (D.D.C. 1996) (discussing the Alexander Archipelago wolf).

22. Determination of Endangered Status for the Cactus Ferruginous Pygmy-Owl in Arizona, 62 Fed. Reg. 10730 (Mar. 10, 1997) (pygmy owl listing rule).

agriculture, water management and woodcutting.²³ The ESA is the only regulatory law in place that specifically protects pygmy owl habitat.

For precisely this reason, the National Association of Home Builders sued the FWS to overturn both the pygmy owl listing and critical habitat decisions.²⁴ In September 2001, the court upheld the listing of the pygmy owl, but vacated the critical habitat rule after the FWS conceded that it had failed to properly analyze the economic impacts of that rule.²⁵ Under the ESA, the FWS is to make a listing determination and critical habitat designation “concurrently,” though in practice critical habitat often slips.²⁶ Regarding listing, the Home Builders’ main charge was that because the Mexican population of pygmy owls is purportedly healthy, there is no need to list the species in the United States. Even assuming this optimistic characterization is correct, the argument simply misunderstands present law. In the first place, the term “species” under the ESA “includes any subspecies of fish or wildlife or plants, and any distinct population segment of any species, or vertebrate fish or wildlife which interbreeds when mature.”²⁷ The FWS determined that the pygmy owl in Arizona qualified for listing as a distinct population segment based primarily on the international border between the United States and Mexico.²⁸

But the more fundamental reason that the pygmy owl receives protection in the United States is the legislative history of section 4 of the ESA:

The term “Endangered Species” means any species of fish or wildlife which is in danger of extinction throughout its entire range, or *any portion* of its range. This definition is a significant shift in the definition of existing law, which considers a species to be endangered only when it is threatened with worldwide extinction. *It includes the possibility of declaring a species endangered within the United States where its principal range is in another country, such as Canada or Mexico, and members of that species are only found in this country insofar as they exist on the periphery of their range.*²⁹

23. *Id.*

24. Nat’l Ass’n of Home Builders v. Norton v. Defenders of Wildlife, No. CV00-0903-PHXSRB (Sept. 21, 2001) (on file with authors).

25. *Id.*

26. 16 U.S.C. § 1533(a)(3)(A) (1999).

27. *Id.* at § 1532(15).

28. Determination of Endangered Status for the Cactus Ferruginous Pygmy-Owl in Arizona, 62 Fed. Reg. 10730 (Mar. 10, 1997). The term “distinct population segment” (“DPS”) is not defined by the ESA; however, the FWS has issued guidance on the term’s meaning. *See* Policy Regarding the Recognition of Distinct Vertebrate Population Segments under the Endangered Species Act, 61 Fed. Reg. 4722 (Feb. 7, 1996). FWS’s DPS policy expressly authorizes the use of international boundaries to designate distinct population segments.

29. H.R. REP. NO. 93-412 (1973), *reprinted in* COMM. ON ENVIRONMENT AND PUBLIC WORKS, 97TH CONG., A LEGISLATIVE HISTORY OF THE ENDANGERED SPECIES ACT OF 1973, AS AMENDED IN 1976, 1977, 1978, 1979, AND 1980 149 (Comm. Print 1982) (emphasis added) [hereafter LEGISLATIVE HISTORY].

The court upheld the listing of the pygmy owl after ruling that “[t]he ESA allows the FWS to list an animal as endangered throughout a *portion* of its range” and that “[s]uch areas can coincide with national or state political boundaries.”³⁰ Indeed, without this authority, species such as the wolf and grizzly bear would receive no protection in the lower forty-eight United States because they are abundant in Canada or Alaska. To many Sonoran Desert species, which span two nations, the distinction is critical.

The ruling in *National Association of Home Builders* is consistent with that of other courts that have ruled that the status of a species in another country is irrelevant to the determination of whether it meets the definition of an endangered or threatened species *in the United States*.³¹ In a relevant case, the plaintiffs submitted a petition under the ESA to have the Canada lynx listed as a threatened or endangered species throughout its range in the lower coterminous United States.³² In response to the petition, FWS determined that listing the species was not warranted based in part on the fact that the species “remains ‘plentiful in Canada and Alaska and it is not threatened with the possibility of extinction’ in those areas.”³³ The plaintiffs subsequently challenged the FWS’s “not warranted” finding. After an extensive review of the legislative history, the court ruled in favor of the plaintiffs:

Plaintiffs are correct that the FWS cannot be allowed to dismiss the contiguous United States population of a species merely because it is more plentiful elsewhere. The agency must consider the scientific evidence relevant to the threat of extinction, or lack thereof, for that portion of the Lynx’s range *within the contiguous United States*.³⁴

Substitute flat-tailed horned lizard or pygmy owl or Sonoran pronghorn, each with significant Mexican ranges, with the lynx, and the same principle applies.

In a decision that could have a significant impact on the effort to conserve the pygmy owl and its habitat, the court in *National Association of Home Builders* also struck down the FWS’s designation of pygmy owl critical habitat.³⁵ The critical habitat rule that was overturned was the result of a lawsuit brought by environmentalists after the FWS failed to designate critical habitat concurrently with the list-

30. Nat’l Ass’n of Home Builders, No. CV00-0903-PHXSRB, at 9.

31. See, e.g., *Southwest Ctr. for Biological Diversity v. Babbitt*, 926 F. Supp. 920, 924 (D. Ariz. 1996) (“Legislative history establishes that the ESA’s broader definition is based on a consistent policy decision by Congress that the United States should not wait until an entire species faces global extinction before affording a domestic population segment of a species protected status.”).

32. *Defenders of Wildlife v. Babbitt*, 958 F. Supp. 670, 673 (D.D.C. 1997).

33. *Id.* at 684.

34. *Id.* at 685 (emphasis added).

35. *Nat’l Ass’n of Home Builders v. Norton v. Defenders of Wildlife*, No. CV00-0903-PHXSRB, at 6 (Sept. 21, 2001) (on file with authors).

ing of the pygmy owl as required under the ESA.³⁶ That litigation resulted in a court-ordered time line for critical habitat designation, a common occurrence given the FWS's reluctance to designate critical habitat.³⁷

Critical habitat is defined as those areas occupied by the species at the time it is listed "on which are found those physical or biological features (I) *essential to the conservation of the species* and (II) which may require special management considerations or protections;" and those areas not occupied by the species at the time it is listed that "are *essential for the conservation of the species*."³⁸ The terms "conserve," "conserving," and "conservation" mean to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary.³⁹

Interpreting critical habitat as that habitat needed for a species' recovery is consistent with the overriding goal of the ESA. The ESA was enacted "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be *conserved*," and "to provide a program for the *conservation* of such endangered species and threatened species." "The basic goal of the Act is to recover listed species through conservation measures. Bringing a species (and its ecosystem) to the point at which the Act's protective measures are no longer necessary is the same as bringing the species to the point at which delisting is appropriate."⁴⁰

In designating critical habitat for the pygmy owl, FWS relied upon available and largely uncontroverted scientific evidence dating back to the late 1800s pertaining to the ecology of the species and its habitat. Around present-day Tucson, Arizona, FWS relied upon "[r]ecords indicat[ing] that pygmy owls were initially more common in xeroriparian habitats (very dense thickets bordering dry desert

36. Southwest Ctr. for Biological Diversity v. Babbitt, CIV 97-704 TUC ACM (D. Ariz. Dec. 30, 1998).

37. Heather Weiner, *Going Through the Motions: Fish and Wildlife Service's Critical Habitat Moratorium*, 15 ENDANGERED SPECIES UPDATE 4046 (May/June 1998). One historic problem has been that the federal ESA listing and critical habitat budgets were, for many years, a part of the same line item in Congressionally-approved appropriations bills; this practice has now been altered in an attempt to fix the ESA's inherent funding challenges.

38. 16 U.S.C. § 1532(5)(A)(i), (ii) (1999) (emphasis added).

39. *Id.* at § 1532(3). "The purpose of critical habitat is to contribute to a species' conservation, which by definition equates to recovery." Memorandum from Director, U.S. Fish & Wildlife Serv., to Regional Directors, U.S. Fish & Wildlife Serv., Draft Guidance on Designating Critical Habitat for Endangered and Threatened Species 21 (June 26, 1992) (on file with authors) [hereinafter Critical Habitat Guidance]; see also Determination of Critical Habitat for the Northern Spotted Owl, 57 Fed. Reg. 1796 (Jan. 15, 1992) ("The use of the term 'conservation' in the definition of critical habitat indicates that its designation should identify *lands that may be needed for a species' eventual recovery and delisting*.") (emphasis added).

40. Interagency Cooperation - - Endangered Species Act of 1973, as Amended; Final Rule, 51 Fed. Reg. 19926, 19931 (June 3, 1986).

washes) than in more open desert uplands.”⁴¹ More recently, “pygmy-owls have been primarily found in Sonoran desertscrub communities in southern and southwestern Arizona consisting of palo verde, ironwood, mesquite, acacia, bursage, and columnar cacti.”⁴² Based on this and other available scientific information and pursuant to 50 C.F.R. § 424.12(b), FWS provided a description of the primary constituent elements that it used to identify critical habitat for the pygmy owl:

The primary constituent elements are found in areas that support or have the potential to support Sonoran riparian deciduous woodlands, Sonoran riparian scrubland, xeroriparian forests, treelined drainages in semidesert and Sonoran savanna grasslands, and the Arizona upland subdivision of Sonoran desertscrub []. Within these biotic communities, specific plant associations that are essential to the primary biological needs of the pygmy-owl include, but are not limited to, the following – cottonwood, willow, ash, mesquite, palo verde, ironwood, hackberry, saquaro cactus, and/or organ pipe cactus. Specifically, larger diameter trees and cacti provide not only nesting substrate, but also roosting, perching, foraging, and dispersal habitat, while smaller trees and shrubs provide for the same functions except nesting.⁴³

The Service also identified the presence of surface or subsurface water as an important characteristic in maintaining pygmy owl habitat.⁴⁴ Finally, FWS concluded that the designation of critical habitat would not provide any additional conservation benefit for the pygmy owl and as a result, there would also be no economic impact.⁴⁵ It is because of this last finding that the court vacated the designation.

The Home Builders had challenged the FWS’s finding that designating critical habitat for the pygmy owl would result in no economic impact. The FWS’s finding was based on its determination that designating critical habitat would not increase the number of section 7 consultations already occurring as a result of the species’ listing because the “jeopardy” standard – which applies when a species is listed – and “adverse modification” standard – which only applies to listed species with critical habitat – provide identical protection for the pygmy owl under section 7(a)(2).⁴⁶ Indeed, the FWS’s regulations de-

41. Designation of Critical Habitat for the Cactus Ferruginous Pygmy-Owl (*Glaucidium brasilianum cactorum*), 64 Fed. Reg. 37419, 37421 (July 12, 1999) (original pygmy owl critical habitat rule).

42. *Id.*

43. *Id.*

44. *Id.*; see also Determination of Threatened Status for the Mojave Population of the Desert Tortoise, 55 Fed. Reg. 12178, 12179 (Apr. 2, 1990). “[Desert] tortoise populations are probably dependant on relatively rare years of sufficient and timely precipitation to produce sufficient forage for reproduction and survival.” *Id.*

45. Designation of Critical Habitat for the Cactus Ferruginous Pygmy-Owl (*Glaucidium brasilianum cactorum*), 64 Fed. Reg. at 37432.

46. *Id.* at 37429-30 (“It is our view that actions affecting suitable pygmy-owl habitat within the known range of the pygmy-owl, whether or not that area has been designated as critical

fining these two terms are essentially identical.⁴⁷ Without deciding whether FWS's interpretation of "adverse modification" is consistent with the ESA, the court vacated the designation after the agency moved to voluntarily remand the rule to reconsider its economic analysis.⁴⁸

While it is still unclear what impact the loss of critical habitat will have on the pygmy owl, it appears that on the ground, the designation of critical habitat had been quite positive for the pygmy owl despite immense pressure to develop all remaining land in southern Arizona. In a recent decision under the ESA, National Environmental Policy Act (NEPA), and the Clean Water Act (CWA),⁴⁹ a federal judge enjoined reliance on and use of vague nationwide permits under section 404 of the CWA until the U.S. Army Corps of Engineers completed cumulative and direct/indirect impacts analyses for each wetland filling request in pygmy owl range, including critical habitat, and completed an adequate ESA section 7 consultation with the FWS regarding the impacts analysis.⁵⁰ This decision is in accord with others that specifically address the meaning of critical habitat under the ESA.⁵¹

III. ESA RECOVERY PLANNING PROCESS

As the preceding discussion established, there is disagreement in ESA circles about what "recovery" – arguably the most important concept in the Act – means in real life. Section 4(f) of the ESA requires the Secretaries of Interior and Commerce to "develop and implement plans . . . for the conservation and survival of endangered species and threatened species."⁵² "The terms 'conserve,' 'conserving,' and 'conservation' mean to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary."⁵³ Thus, theoretically, ESA

habitat and whether or not it is known to currently support an individual, should undergo review under section 7.")

47. See 50 C.F.R. § 402.02 (2000).

48. Nat'l Ass'n of Home Builders v. Norton v. Defenders of Wildlife, CV-00-0903-PHX SRB, at 6 (Sept. 21, 2001) (on file with authors).

49. 33 U.S.C. §§ 1251-1377 (1987).

50. Defenders of Wildlife v. Ballard, 73 F. Supp. 2d 1094, 1115-17 (D. Ariz. 1999).

51. See, e.g., Sierra Club v. Fish & Wildlife Serv., 245 F.3d 434, 442-43 (5th Cir. 2001). The statutory definition of critical habitat "is grounded in the concept of 'conservation.'" *Id.* at 442. "'Conservation' is a much broader concept than mere survival. The ESA's definition of 'conservation' speaks to the recovery of a threatened or endangered species. Indeed, in a different section of the ESA, the statute distinguishes between 'conservation' and 'survival.'" *Id.* at 441-42. This distinction between survival and recovery is also reflected in the different ESA section 7 standards for species with designated critical habitat, and those without it. See 16 U.S.C. § 1536(a)(2) (1999).

52. 16 U.S.C. § 1533(f).

53. *Id.* at § 1532(3).

recovery plans are designed “to be a basic road map to recovery, i.e., the process that stops or reverses the decline of a species and neutralizes threats to its existence.”⁵⁴ Several Sonoran Desert case studies, however, reveal that actual recovery of listed species is usually more difficult in practice.

The Sonoran pronghorn, among the fastest land mammals in the Americas, is a poster child for the challenge of species recovery. Listed as endangered since the very first U.S. endangered species legislation in 1967,⁵⁵ this tan colored antelope has adapted to its unique desert environment and is taxonomically distinguishable from other pronghorn subspecies. At present, the number of these slender animals could be as low as 100 on the United States side of the border; a similarly low, but still unquantified, number of Sonoran pronghorn reside in Mexico.⁵⁶ But the latest Sonoran pronghorn recovery plan⁵⁷ “fail[s] to incorporate into the plan objective measurable criteria for delisting the pronghorn, and estimates of the time required to carry out those measures needed to achieve the plan’s goal and intermediate steps toward that goal.”⁵⁸ One particularly egregious revelation is contained in an earlier recovery plan for the species, which stated in 1982, “The probable reason for the decline is loss of habitat . . . this habitat has yet to recover.” “Range extension” was, thus, identified as one of the “only known ways” to recover the species.⁵⁹ Twenty years later, however, the FWS still has not made progress toward tangible actions that will ensure this species’ existence into the twenty-second century.

Similarly depressing is the fate of the big native fish of the lower Colorado River, which cuts through the Sonoran Desert between Arizona and California, before dumping (at least historically) large amounts of freshwater and sediment into the Mexican delta and eventually the Gulf of California. The Colorado pikeminnow, humpback chub, bonytail chub, and razorback sucker are listed as endangered under the ESA, with only the razorback sucker retaining any real via-

54. *Fund for Animals v. Babbitt*, 903 F. Supp. 96, 103 (D.D.C. 1995) (holding that the grizzly bear recovery plan was legally inadequate).

55. *Endangered Species*, 32 Fed. Reg. 4001 (Mar. 11, 1967).

56. *See generally* DEFENDERS OF WILDLIFE, POPULATION VIABILITY ANALYSIS WORKSHOP FOR THE ENDANGERED SONORAN PRONGHORN (*ANTILOCAPRA AMERICANA SONORIENSIS*) IN THE UNITED STATES: PROCEEDINGS FROM A POPULATION VIABILITY ANALYSIS WORKSHOP HELD AT PHOENIX ZOO, 4-6 SEPTEMBER, 1996 (1998) (on file with authors).

57. LAURA A. THOMPSON-OLAIS, U.S. FISH & WILDLIFE SERV., FINAL REVISED SONORAN PRONGHORN RECOVERY PLAN (*ANTILOCAPRA AMERICANA SONORIENSIS*) (1998) (original approved 1982) (on file with authors).

58. *Defenders of Wildlife v. Norton*, 130 F. Supp. 2d 121, 135 (D.D.C. 2001) (holding the Sonoran pronghorn recovery plan was unlawful under the ESA and was remanded back to FWS).

59. U.S. FISH & WILDLIFE SERV., SONORAN PRONGHORN RECOVERY PLAN 6-7 (1982) (on file with authors).

bility in the lower basin of the Colorado.⁶⁰ “The listing of these four fishes, and the potential endangerment of others suggest that this large river *ecosystem* is at risk. When such major environmental problems exist, present policy and philosophies have resulted in the decision to consider the recovery of more than one species, and thus to prepare multispecies or *ecosystem* recovery plans.”⁶¹

Despite this pleasing rhetoric, the reality is that little real *ecosystem* improvements are now taking place. The razorback sucker, for instance, was once the most abundant of the big fish in the Colorado River, and occupied most of the river’s path, including in Mexico.⁶² Adult fish, which live up to forty years, can reach lengths of over two feet and weigh about ten pounds.⁶³ “It now occurs only in remnant populations in a few lakes and river reaches. The largest extant population occurs in Lake Mohave, Arizona, and the largest riverine population . . .” is in the upper Colorado River basin.⁶⁴ Worse yet, the recovery plan for the razorback sucker—while it justifiably attempts to maintain adequate refugia, collect genetically diverse razorbacks for refugia, and control non-native predating fish—does not tangibly identify any meaningful ecological projects that would entail restoration of natural river flows.⁶⁵ If the Colorado River is a ribbon of life through the arid Sonoran Desert, then the FWS is allowing this ribbon to tear and fray, with potentially catastrophic impacts to the rest of the ecosystem.⁶⁶

60. See COLORADO RIVER FISHES RECOVERY TEAM, U.S. FISH & WILDLIFE SERV., BONYTAIL CHUB REVISED RECOVERY PLAN (1990) (original approved May 16, 1984) (on file with authors); COLORADO RIVER FISHES RECOVERY TEAM, U.S. FISH & WILDLIFE SERV., HUMPBAC CHUB 2D REVISED RECOVERY PLAN (1990) (original approved Aug. 22, 1979) (on file with authors); COLORADO RIVER FISHES RECOVERY TEAM, U.S. FISH & WILDLIFE SERV., COLORADO SQUAWFISH REVISED RECOVERY PLAN (1991) (original approved Mar. 16, 1978) (now Pikeminnow) (on file with authors).

61. HAROLD M. TYUS, U.S. FISH & WILDLIFE SERV., RAZORBACK SUCKER (XYRAUCHEN TEXANUS) RECOVERY PLAN iv (1998) (emphasis added) (on file with authors) [hereinafter RAZORBACK SUCKER RECOVERY PLAN].

62. U.S. BUREAU OF RECLAMATION, DESCRIPTION AND ASSESSMENT OF OPERATIONS, MAINTENANCE, AND SENSITIVE SPECIES OF THE LOWER COLORADO RIVER 175 (Aug. 1996) (on file with authors) [hereinafter BIOLOGICAL ASSESSMENT].

63. See RAZORBACK SUCKER RECOVERY PLAN, *supra* note 61, at 3.

64. *Id.* at vi.

65. *Id.* at 59-63.

66. At present, in addition to the four endangered big river fish, other riparian species such as the southwestern willow flycatcher, Final Rule Determining Endangered Species Status for the Southwestern Willow Flycatcher, 60 Fed. Reg. 10694 (Feb. 27, 1995), desert pupfish, Determination of Endangered Status and Critical Habitat for the Desert Pupfish, 51 Fed. Reg. 10842 (Mar. 31, 1986), yuma clapper rail, Endangered Species, 32 Fed. Reg. 4001 (Mar. 11, 1967), and yellow-billed cuckoo, 12-Month Finding for a Petition to List the Yellow-billed Cuckoo in the Western Continental United States, 66 Fed. Reg. 38611 (July 25, 2001), are either listed or candidates for listing.

IV. ESA TAKING PROHIBITION

Arguably at the other end of the spectrum from the facially appealing yet disturbingly vague ESA recovery planning process is the ESA's clear prohibition against "taking" a listed species.⁶⁷ "The term 'take' means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct."⁶⁸ Put most boldly, if any person "takes" a listed species without a lawful permit,⁶⁹ that person is subject to both civil and criminal penalties.⁷⁰ While the taking prohibition certainly plays a significant and potentially high-profile role in protecting listed species,⁷¹ it suffers from two problems. First, by definition, it is not a pro-active program to save threatened and endangered species. Second, for a variety of reasons, the prohibition is not easy to enforce.

The most contentious component of take is the prohibition against "harm" to a species. Harm "means an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering."⁷² Because this prohibition rubs up against private property rights under Amendment V of the U.S. Constitution,⁷³ conflict and litigation relating to private lands under section 9 of the ESA usually receive significant political attention.⁷⁴

In the Sonoran Desert, public scrutiny of this ESA provision reached new heights when local conservationists sued a school district that planned to build a new high school complex on sixty acres of prime desert scrub habitat.⁷⁵ Not only did the school district flout local rules in locating the high school, but the chosen area was also adjacent to a recent pygmy owl siting. The Ninth Circuit, however, affirmed the district court's decision that held plaintiffs had failed to

67. 16 U.S.C. § 1538(a) (1999).

68. *Id.* at § 1532(19).

69. Both sections 7 and 10 of the ESA authorize the incidental taking of listed species under certain enunciated conditions. *Id.* at §§ 1536, 1539.

70. *Id.* at § 1540.

71. One commentator calls the taking prohibition in the ESA "perhaps the most powerful regulatory provision in all of environmental law." J.B. Ruhl, *Section 7(a)(1) of the "New" Endangered Species Act: Rediscovering and Redefining the Untapped Power of Federal Agencies' Duty to Conserve Species*, 25 ENVTL L. 1107, 1115 (1995).

72. 50 C.F.R. § 17.3 (2000).

73. U.S. CONST. amend. V ("nor shall private property be taken for public use without just compensation").

74. *See, e.g., Palila v. Hawaii Dep't of Land & Natural Res.*, 639 F.2d 495 (9th Cir. 1981) (holding that state maintenance of feral sheep and goats was harming, i.e., taking, the endangered palila bird). "After the *Palila* decision, the Fish and Wildlife Service sought to narrow its definition of harm Ultimately, the Service backed off its proposal" MICHAEL J. BEAN & MELANIE J. ROWLAND, *THE EVOLUTION OF NATIONAL WILDLIFE LAW* 214 (3d ed. 1997). *See also Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687 (1995) (holding the FWS harm definition was lawful after facial challenge to the regulation).

75. *Defenders of Wildlife v. Bernal*, 204 F.3d 920, 922-23 (9th Cir. 2000).

carry “the burden of proving by a preponderance of the evidence that the proposed construction would harm a pygmy owl by killing or injuring it.”⁷⁶ The Court of Appeals did not reverse the district court judge’s decision to exclude important plaintiff testimony pursuant to *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,⁷⁷ and allowed the FWS to present its own pygmy owl expert through a motion to quash plaintiffs’ subpoena.⁷⁸ This legal battle to protect the pygmy owl has proven how hard it can be to operationalize basic scientific concepts of conservation biology into on-the-ground implementation of the ESA. Despite the fact that an owl was found to be on the property in question, despite the fact that every scientific expert at trial testified that the owl would likely be significantly harmed by the development, and despite the fact that the action proposal was covered by the FWS’ guidance on take, the district court judge simply could not bring himself to find a take under ESA section 9.⁷⁹ This leads to the question of whether environmentalists must now present dead or bloody carcasses to courts to prove harm. Debate over appropriate levels of scientific proof to demonstrate species take will continue to rage.⁸⁰ Even when scientific proof is adequate, federal officials and public citizens cannot be in all places at all times to ensure that listed species are not being taken.

V. ESA CONSULTATION MANDATE

For actions that “may affect” listed species and possess a federal nexus, the action agency must consult with the FWS to “insure” that its activities are “not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat of such species”⁸¹ The federal nexus is satisfied if the federal agency is conducting the action, funding the action, or permitting the action.⁸² The consultation mandate in the ESA ensures not only that federal agencies are not contributing to species endangerment, and in fact are actively

76. *Id.* at 926.

77. 509 U.S. 579 (1993) (establishing the test for reliability of expert evidence under Federal Rule of Evidence 702).

78. *Bernal*, 204 F.3d at 928.

79. *Id.* at 927.

80. *See, e.g.*, *Forest Conservation Council v. Rosboro Lumber Co.*, 50 F.3d 781 (9th Cir. 1995); *Marbled Murrelet v. Babbitt*, 83 F.3d 1060 (9th Cir. 1996). Both of these cases held that habitat modification that is reasonably certain to injure an endangered species by impairing their essential behavioral patterns satisfied the actual injury requirement of ESA section 9 and its implementing regulations.

81. 50 C.F.R. § 402.14 (2000); 16 U.S.C. § 1536(a)(2) (1999); *see also* *Tennessee Valley Auth. v. Hill*, 437 U.S. 153 (1978) (holding that the plain language of section 7 was determinative, even in the face of economic disruption).

82. 50 C.F.R. § 402.02 (defining “action”).

working to promote species conservation,⁸³ but also that scarce federal dollars are not poorly spent. In addition, ESA section 7 consultations authorize the FWS to permit the incidental taking of listed species if the substantive requirements of section 7 are met.⁸⁴

These standards were clearly applied in a recent decision to protect the Sonoran pronghorn that impacts multiple federal agencies.⁸⁵ Here, the court found that FWS's different biological opinions for multiple action agencies such as the Department of Defense, Bureau of Land Management, Border Patrol,⁸⁶ National Park Service, and others failed to comply with the ESA's consultation mandate because they did not fully analyze the effects upon the pronghorn of each agency action *in conjunction with the effects of other actions*, including other federal actions.⁸⁷ The court specifically found that, for each biological opinion, the FWS must complete an analysis of the environmental baseline, and then analyze the effects of the relevant action when *added* to that baseline. In other words, the agency must conduct "an analysis of the *total* impact on the species," stemming from all impacts in the action area.⁸⁸ The FWS's analysis in this case was flawed because "[n]owhere is there a comprehensive discussion, as opposed to a listing, of the impacts that the various federal activities have in the aggregate on the pronghorn."⁸⁹

Likewise, the Sonoran pronghorn multi-agency decision determined that the FWS cannot authorize incidental take in a vacuum, but must analyze the impact of such incidental take "in the context of other incidental take authorized" by the agency.⁹⁰ The court found, in this case, that the Service had "authorized a total level of take greater than the incidental take provided for in any individual [biological opinion] without analyzing whether that total level jeopardizes the survival of the pronghorn species."⁹¹ The court explained: "While the

83. *See, e.g.*, 16 U.S.C. § 1536(a)(1); *Sierra Club v. Glickman*, 156 F.3d 606, 612 (5th Cir. 1998) (holding that pursuant to section 7(a)(1) the Secretary of Agriculture did not review a particular irrigation program in furtherance of the ESA's purposes).

84. 16 U.S.C. § 1536(b)(4); *see also id.* at § 1536(d) (limiting commitment of resources during consultation).

85. *See generally* *Defenders of Wildlife v. Norton*, 130 F. Supp. 2d 121 (D.D.C. 2001).

86. As a result of its mission to "protect" the border from illegal immigrants and drug trafficking from Mexico, the Border Patrol will play an increasingly tangible role in binational wildlife protection, either positive or negative. *See, e.g.*, Notice of Intent to Prepare a Supplemental Draft Environmental Impact Statement for the Immigration and Naturalization Service and Joint Task Force Six Activities Along the United States/Mexico Border, 63 Fed. Reg. 46070 (Aug. 28, 1998).

87. Because so much of the Sonoran pronghorn's range is on federal land such as Cabeza National Wildlife Refuge, Organ Pipe Cactus National Monument, Goldwater Air Force Base, BLM land, and others, the importance of section 7 is magnified here. *See, e.g.*, Notice of Intent to Prepare a Comprehensive Conservation and Wilderness Management Plan and Associated Environmental Impact Statement, 65 Fed. Reg. 20186 (Apr. 14, 2000).

88. *Norton*, 130 F. Supp. 2d at 128 (emphasis in original).

89. *Id.* at 130.

90. *Id.* at 127.

91. *Id.* at 130.

take of one or two pronghorn as a result of a particular activity may not jeopardize the species as a whole, the aggregate take of pronghorn resulting from each federal activity affecting pronghorn may pose such a risk. As incremental takes are authorized, the impact of those takes on the species must be viewed in the context of previously authorized takes and other impacts that are part of the environmental baseline.”⁹²

The court also deemed several of the biological opinions “deficient because of their overly narrow definition of action area, which results in the exclusion of certain relevant impacts from the environmental baseline.”⁹³ Thus, the court rejected outright the argument that the action area is limited to the lands under the control of a given agency or in the immediate area of that agency’s action – for instance, that the Bureau of Land Management need not consider impacts beyond the boundaries of the five grazing allotments at issue, or that the National Park Service need not consider impacts beyond the boundaries of Organ Pipe Cactus National Monument. Rather, given that pronghorn move and can be subject to impacts “without regard to which federal agency is responsible for administering a particular area,” and in light of the “expansive regulatory definition of action area,” the appropriate scope of analysis encompasses all areas where pronghorn may be directly or indirectly affected by agency action.⁹⁴ In sum, “applicable regulations require an agency to analyze the effects of its activities when added to the past and present impacts of all federal activities in the action area on an endangered species, as well as certain anticipated actions that have already undergone formal or early consultation. An agency cannot fulfill this duty by simply listing the relevant activities or by narrowly defining the action area to exclude federal activities that are impacting the pronghorn.”⁹⁵ This is particularly true for species, such as the pronghorn, that serve important roles within their larger ecosystem.⁹⁶

Similarly, just as federal agencies sought to limit the application of the ESA to the pronghorn, numerous governmental and private entities have also attempted to avoid ESA consultation requirements with respect to the impacts of U.S. Colorado River operations (e.g., dams and diversions) upon myriad listed and imperilled wildlife spe-

92. *Id.*

93. *Id.* at 128.

94. *Id.* at 129-30.

95. *Id.* at 126.

96. See generally NOSS & COOPERRIDER, *supra* note 7, at 389-99. The use of “indicator”, “keystone”, and “umbrella” species to protect ecosystems is a crucial part of any large-scale conservation effort. The Sonoran pronghorn is at least an umbrella species for the Sonoran Desert ecosystem, is probably an indicator of the ecosystem, and might be a keystone of the ecosystem.

cies in the Lower Colorado River Basin Ecosystem (LCRBE or lower Colorado River). The lower Colorado River flows from Lake Powell in Utah and Arizona south to the Gulf of California (Sea of Cortez) in Mexico. It includes not only the river's mainstem but also many of the surrounding wetlands and tributary areas, and is among the most biologically diverse systems in the world.⁹⁷ Today, the river's delta is approximately 150,000 acres, just five percent of its historic size. Still, "[t]he Colorado River Delta . . . is still the largest desert estuary in North America, which provides a critical interface with the marine ecosystem of the Upper Gulf of California . . ." ⁹⁸ and is a valuable oasis in the surrounding Sonoran Desert ecosystem.⁹⁹

The degradation of the LCRBE, however, continues to contribute to the endangerment of numerous native species, and local peoples dependant upon these species. Natural populations of species like the Colorado pikeminnow or squawfish have already been extirpated from the lower basin and several other native fish species are on the brink of extinction.¹⁰⁰ Other wildlife species that are at risk in the LCRBE include the vaquita, totoaba, Yuma clapper rail, southwestern willow flycatcher, yellow-billed cuckoo, brown pelican, and a number of clams, snails and shrimp.¹⁰¹

In early 1995, at the beginning of the Republican take-over of Congress, the Bureau of Reclamation and the lower Colorado River Basin states of California, Arizona, and Nevada began negotiations over the development of a conservation plan and incidental take permit application to obtain regulatory certainty for continuing dam operations and water diversions. These ongoing agency activities take and jeopardize listed species and adversely modify critical habitat.¹⁰² The Department of Interior and lower basin states formalized their partnership with a Memorandum of Agreement (MOA)¹⁰³ in the summer of 1995. The intent of the MOA was to provide interim regulatory assurance during a three-year program development period and

97. See generally, Peter Friederici, *Stolen River: The Colorado and its Delta Are Losing Out*, DEFENDERS, Spring 1998, at 11.

98. CARLOS VALDES-CASILLAS ET AL., NORTH AM. WETLANDS CONSERVATION COUNCIL, WETLAND MANAGEMENT AND RESTORATION IN THE COLORADO RIVER DELTA: THE FIRST STEPS 4 (1998).

99. See, e.g., Edward P. Glenn et al., *Effects of Water Management on the Wetlands of the Colorado River Delta, Mexico*, 1996 Conservation Biology 1175, 1175-86.

100. See BIOLOGICAL ASSESSMENT, *supra* note 62, at 171.

101. See *id.* at 10, tbl.2; JASON I. MORRISON ET AL., PACIFIC INSTITUTE & GLOBAL WATER POL'Y PROJECT, THE SUSTAINABLE USE OF WATER IN THE LOWER COLORADO RIVER BASIN App. A (1996); BUREAU OF RECLAMATION, BIOLOGICAL ASSESSMENT FOR PROPOSED INTERIM SURPLUS CRITERIA, SECRETARIAL IMPLEMENTATION AGREEMENTS FOR CALIFORNIA WATER PLAN COMPONENTS AND CONSERVATION MEASURES 58-59 (Aug. 2000) (on file with authors).

102. See generally BIOLOGICAL ASSESSMENT, *supra* note 62.

103. Memorandum of Agreement for Development of a Lower Colorado River Species Conservation Program (Aug. 2, 1995) (copy on file with authors). The United States, Arizona, California, and Nevada were signatories to the MOA.

long-term assurance with the end conservation program, the Lower Colorado River Multi-Species Conservation Plan (MSCP).¹⁰⁴ Instead of consulting with FWS, which would develop a “reasonable and prudent alternative” (RPA) to the agency’s actions, ensuring that Reclamation activities did not jeopardize listed species, the signatories designed the MOA to serve as the RPA, thereby postponing ESA section consultation.¹⁰⁵ In response to a loud outcry from conservationists, the federal and state agencies issued a Memorandum of Clarification (MOC) that ostensibly recognized that the agencies participating in the MSCP could not avoid the legal requirements of the ESA.¹⁰⁶

Reclamation then entered into consultation with FWS and submitted its Biological Assessment (BA).¹⁰⁷ It concluded that its operations and maintenance activities may affect the southwestern willow flycatcher, razorback sucker, bonytail chub and totoaba.¹⁰⁸ At the same time, Reclamation was setting the stage for an inadequate BA as it dismissed the impacts its actions had and continue to have on species and their habitats in Mexico.¹⁰⁹ Unfortunately, due to the lack of information on the status of and threats to the vaquita, Reclamation assumed that its operations and maintenance activities would not affect the vaquita.¹¹⁰ Moreover, Reclamation would not request formal consultation for the totoaba (a species included at the request of FWS) despite its “may affect” determination because it occurs in Mexico and Reclamation has no authority over Mexico’s use of its apportionment of water. In April 1997, FWS completed its Biological and Conference Opinion¹¹¹ on Lower Colorado River Operations and Maintenance and issued a finding of jeopardy for the bonytail chub,

104. *Id.*

105. *Id.*

106. Memorandum of Clarification (July 17, 1996) (copy on file with authors).

107. Under joint FWS and National Marine Fisheries Service (NMFS) regulations on the consultation process, each federal agency is required to prepare a biological assessment to determine whether its activities “may affect” a listed species. 16 U.S.C. § 1536(c) (1999). An agency whose action “may affect” listed species must enter into “formal consultations” with FWS or NMFS unless the “[f]ederal agency determines, with the written concurrence of the Director, that the proposed action is not likely to adversely affect any listed species. *Id.*

108. BIOLOGICAL ASSESSMENT, *supra* note 62, at 199-201. Reclamation also found that its operations and maintenance activities may affect, but would not adversely affect, the Yuma clapper rail and flat-tailed horned lizard. *Id.*

109. For example, due to the lack of information on the status of and threats to the vaquita, Reclamation assumed that its operation and maintenance activities would not affect the vaquita. *Id.* at 195. Moreover, Reclamation would not request formal consultation for the totoaba (a species included at the request of FWS) despite its “may affect” determination because it occurs in Mexico and Reclamation has no authority over the delivery of water to Mexico for use in that country. *Id.* at 201, n.4.

110. *Id.*

111. An agency enters into “formal consultation” with FWS by requesting that FWS issue a “biological opinion” detailing how the agency action affects the species, 16 U.S.C. § 1536(b)(3)(A), and determining whether the action, taken together with cumulative effects, is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. 50 C.F.R. § 402.14(g)(4) (2000).

razorback sucker and southwestern willow flycatcher and adverse modification of critical habitat of the razorback sucker and bonytail chub.¹¹² Because FWS determined that the action is likely to jeopardize endangered species, FWS included an RPA¹¹³ to the proposed action and an incidental take statement in the Biological Opinion.¹¹⁴ The Biological Opinion for Reclamation's activities contains a lengthy RPA as well as mandatory terms and conditions. Failure to follow these measures requires reinitiation of consultation and is a violation of the ESA.¹¹⁵

Meanwhile, because the U.S. Government refuses to consult on the impacts that its Colorado River operations are having upon U.S.-listed species that occur in Mexico such as the vaquita, totoaba, southwestern willow flycatcher, desert pupfish, and Yuma clapper rail, additional litigation has commenced in federal district court on the geographic scope of section 7.¹¹⁶ Reclamation has limited the geographic scope of its consultation by narrowly defining both the action and the action area. By claiming that many of its actions are non-discretionary, including the management of water levels in Colorado River reservoirs and the deliveries of water to various entities, Reclamation has sought to avoid ESA consultation on these actions and their impacts on the quantity, quality and timing of freshwater flow to Mexico.¹¹⁷ The ESA's implementing regulations require that the request to initiate consultation contain a "description of the action to be considered"¹¹⁸ and "appl[ies] to all actions in which there is discretionary Federal involvement or control."¹¹⁹ The range of activities set out by Reclamation in the BA and adopted in the BO are restricted to "Reclamation's *discretionary* program of continuing operations of [LCR] dam facilities, maintenance of river control features, and other activities such as endangered species conservation for the next five

112. Biological and Conference Opinion on Lower Colorado River Operations and Maintenance, U.S. Fish & Wildlife Serv. Biological Op., at 152-55 (1997) (on file with authors) [hereinafter FWS Biological Opinion].

113. 16 U.S.C. § 1536(b)(3)(A). RPAs are alternative actions, consistent with the intended purpose of the action, that will avoid the likelihood of jeopardy to the species. 50 C.F.R. § 402.02.

114. If the FWS determines that the take will not violate the ESA, it will provide the agency with an incidental take statement that specifies the impact of such incidental taking on the species, specifies the reasonable and prudent measures (RPMs) necessary to minimize such impact, and sets the terms and conditions with which Reclamation must comply. 16 U.S.C. § 1536(b)(4).

115. 50 C.F.R. § 402.16.

116. *Defenders of Wildlife v. Norton*, CV 00-1544 (D.D.C. filed June 28, 2000) (on file with authors). At press this important case has been fully briefed on the merits.

117. BIOLOGICAL ASSESSMENT, *supra* note 62, at 20, 198.

118. 50 C.F.R. § 402.14(c)(1).

119. *Id.* at § 402.03; see also Derek Weller, *Limiting the Scope of the Endangered Species Act: Discretionary Federal Involvement or Control Under Section 402.03*, 5 HASTINGS W.-NW. J. ENVTL. L. & POL'Y 309 (1999) (discussing the application and legality of 50 C.F.R. § 402.03).

years.”¹²⁰ Reclamation has asserted that the Secretary’s management of the River is limited through provisions contained in compacts, Supreme Court decrees, international treaties, statutes, and water supply contracts.¹²¹ Despite Reclamation’s narrow interpretation to purposely circumscribe its discretion and limit its conservation duties, it is well-established that the lower Colorado River is federalized and ultimately under the control of the Secretary of Interior.¹²²

Nondiscretionary activities are those where the “agency simply does not possess the ability to implement measures that inure to the benefit of the protected species.”¹²³ Examples of nondiscretionary acts include issuance of Coast Guard certification when certain criteria are met,¹²⁴ a right of way agreement where there is no action the agency can take for the benefit of the species,¹²⁵ and advice from the FWS on ESA obligations where FWS had no power to enforce the ESA.¹²⁶ By contrast, when the agency has the discretion to carry out the purposes of the Act or other mandates it enforces, FWS regulations do not exempt an action from the ESA.¹²⁷ For example, when the agency has discretion to issue regulations to carry out an Act’s mandates, it is not exempted from consultation.¹²⁸ Likewise, Recla-

120. FWS Biological Opinion, *supra* note 112, at 4 (emphasis added); *id.* at 35-37, tbl.1 (Summary of Reclamation’s discretion over Lower Colorado River operations and maintenance).

121. BIOLOGICAL ASSESSMENT, *supra* note 62, at 26, 72.

122. Reclamation acknowledges that in seven instances it has limited discretion over certain activities, yet, “what the precise limitations are, what agencies or groups have the remaining discretion, and how that discretion is exercised, remains unclear.” FWS Biological Opinion, *supra* note 112, at 8. This is the first instance of a recurring theme in the biological assessment and biological opinion – lack of necessary information to be provided by Reclamation. It is this absence of information that is fundamentally wrong. By requiring further information from Reclamation in its reasonable and prudent alternative, FWS highlighted its need and importance in defining the agency action and formulating a comprehensive BO. *Id.* at 163-64. No subsequent document delivered to FWS elaborates upon or fleshes out the boundaries of Reclamation’s discretion over its River operations. See 1998 Annual Report, Implementation of Reasonable and Prudent Alternative and Measure: Biological and Conference Opinion on Lower Colorado River Operations and Maintenance (May 1998), <http://www.lc.usbr.gov/~g2000/98ap.html>; Reasonable and Prudent Alternative: Provision 13b, <http://www.lc.usbr.gov/~g2000/rpa13b.html>; see also *Arizona v. California*, 373 U.S. 546, 589-90 (1963) (holding Congress put the Secretary of the Interior in charge of these works (LCR dams and reservoirs) and entrusted him with sufficient power, principally the section 5 contract power, to direct, manage, and coordinate their operation).

123. *Sierra Club v. Babbitt*, 65 F.3d 1502, 1509 (9th Cir. 1995) (holding that section 7 does not apply to an agency action that occurred before passage of the ESA and where the agency’s continuing ability to influence the activity is limited to factors unrelated to conservation of threatened and endangered species).

124. *Strahan v. Linnon*, 967 F. Supp. 581, 621 (D. Mass. 1997) (concluding that the Coast Guard’s documentation and inspection of vessels is nondiscretionary because the Coast Guard is required to issue Certificates of Documentation and Inspection if specific statutory and regulatory criteria, which make no reference to environmental concerns, are not met).

125. *Sierra Club v. Babbitt*, 65 F.3d at 1509.

126. *Marbled Murrelet v. Babbitt*, 83 F.3d 1068, 1074 (9th Cir. 1996) (clarifying that advisory activity, such as FWS providing advice under its power to enforce section 9 of the ESA, does not constitute federal involvement or control over a private party’s activities).

127. 50 C.F.R. § 402.03 (2000).

128. *Florida Key Deer v. Stickney*, 864 F. Supp. 1222, 1240 (S.D. Fla. 1994) (finding that because Federal Emergency Management Agency had broad discretion to implement the National Flood Insurance Program (NFIP) and issue those regulations necessary for implementa-

mation has more than limited discretion regarding operations along the LCR. Congress and the U.S. Supreme Court have made it clear that river regulation and navigation are top priorities on par with flood control.¹²⁹ The only other federal court to interpret these priorities has stated that the Secretary has “broad discretion” in meeting the needs of consumptive and power uses as long as he both meets the needs of navigation (and thus the other top priorities) and does not burden them.¹³⁰

In addition to circumscribing the action, Reclamation has also tried to limit the action area in its consultation over management of the Colorado River. ESA regulations define “action area” as “all areas to be affected directly or indirectly by the Federal action and not merely in the immediate area involved in the action.”¹³¹ However, Reclamation’s biological assessment refers to “[t]he geographical area of the discretionary *actions* under this section 7 consultation” instead of the geographical area of the *impacts*.¹³² The impacts of Reclamation’s operations along the River reduce the quality and quantity of water reaching the delta and Gulf of California, and must be considered in the biological assessment’s impacts analysis.

The origin of this tension between “actions” and “impacts” is a 1986 rulemaking by the Reagan Administration, where the Secretary of the Interior published the current definition of “action” – “all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies *in the United States or upon the high seas*.”¹³³ Defenders of Wildlife and others challenged this regulation as invalid because it contradicted the plain language of section 7 of the ESA. The federal district court and Eighth Circuit appellate court held that federal agencies are required to consult on federal

tion and was thus not exempt from the requirements of the ESA); *Natural Res. Defense Council v. Houston*, 146 F.3d 1118, 1126 (9th Cir. 1998) (holding that when the Bureau of Reclamation has the discretion to alter key terms of a water delivery contract and can reduce the quantity of water for sale, then the ESA applies to contract renewals).

129. *See, e.g., Arizona v. California*, 373 U.S. 546, 588-90 (1963). The Court held that the Boulder Canyon Project Act’s provisions “are persuasive that Congress intended the Secretary . . . both to carry out the allocation of the waters of the main Colorado River among the Lower Basin States and to decide which users within each State would get water . . . had Congress intended so to fetter the Secretary’s discretion, it would have done so in clear and unequivocal terms . . .” *Id.* at 580-81. Congress granted the Secretary “broad power . . . make contracts for the distribution of the water” and nothing in the BCPA changes their decision that the Secretary’s contracts “control the apportionment of water among the States” and that he “is not bound by these sections to follow state law.” *Id.* at 585-86.

130. *See Laughlin River Tours, Inc. v. Bureau of Reclamation*, 730 F. Supp. 1522, 1524 (D. Nev. 1990).

131. 50 C.F.R. § 402.02.

132. *See, e.g., BIOLOGICAL ASSESSMENT, supra* note 62, at 191.

133. 50 C.F.R. § 402.02 (emphasis added). Initially, the prohibition against ‘jeopardy’ applied extraterritorially. *Endangered Species Cooperation*, 43 Fed. Reg. 870, 874 (Jan. 4, 1978). “Section 7 . . . requires every Federal agency to insure that its activities and programs in the United States, upon the high seas, and in foreign countries will not jeopardize the existence of a listed species.” 50 C.F.R. § 402.02 (1978).

projects in foreign countries.¹³⁴ “Endangered species exist outside the boundaries of the United States and high seas, therefore, consultation must occur if an action in a foreign land affects an endangered or threatened species there.”¹³⁵ Both courts decided that congressional intent clearly required federal agencies to consult with the Secretary regarding projects in foreign countries, and, as a result, the regulation was contrary to the ESA.

By examining the statutory language, the district court found congressional intent of extraterritorial application throughout the ESA.¹³⁶ First, section 7 itself employs broad, all-inclusive language – “any endangered species.” Section 4, determination of threatened and endangered species, contains further international concerns for preservation of wildlife.¹³⁷ It requires the Secretary to list *all* species that are endangered or threatened, and in particular, states that the actions of foreign nations are to be considered during the listing process and, thus, species not native to or present in the United States appear on the list. Lastly, the court found intent in the interplay between the regulations and the 1978 amendments to section 7. The Conference Committee’s adoption of the current language and existing law governing section 7 was deemed a “stamp of approval” of the 1978 regulations by both courts.¹³⁸ Likewise, the appellate court found the clear language of the ESA demonstrated that Congress wanted consultation to apply to federal actions and impacts abroad. In reversing these two decisions, the U.S. Supreme Court dismissed the case on standing grounds, thus issuing no substantive opinion on the merits and leaving the Eighth Circuit decision in limbo.¹³⁹

Ironically, there is a very strong argument, even with the potentially illegal FWS/NMFS regulation, that consultation for actions occurring within the United States must take into account effects outside the United States. Unlike the definition of agency action, the definitions of “action area,” “effects of the action” and “cumulative effects” do not contain any geographic limitation.¹⁴⁰ Several commentators have acknowledged that most federal agency decision-making processes are necessarily actions occurring within the United States.¹⁴¹

134. *Defenders of Wildlife v. Lujan*, 707 F. Supp. 1082 (8th Cir. 1990).

135. *Lujan*, 707 F. Supp. at 1084-85.

136. *See, e.g.*, S. REP. NO. 93-307, at 2 (1973), reprinted in U.S.C.A.A.N. 2989, 2990 (Senate Commerce Committee stating that the ESA was passed in part “to help insure that the United States does not contribute to the expiration of other nations’ wildlife . . .”).

137. 16 U.S.C. § 1533 (1999).

138. *Lujan*, 707 F. Supp. at 1086.

139. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 582 (1992).

140. 50 C.F.R. § 402.02 (2000).

141. Mary A. McDougall, *Extraterritoriality and the Endangered Species Act of 1973*, 60 GEO. L.J. 435, 437 (1991); George C. Coggins & John W. Head, *Beyond Defenders: Future Problems of Extraterritoriality and Superterritoriality for the Endangered Species Act*, 43 WASH. U.J. URB. & CONTEMP. L. 59, 73 (1993).

Applied to the lower Colorado River and the Mexican Delta, actions taken by U.S. federal agencies such as Reclamation unquestionably occur in the United States, at various points in the Colorado's watershed, yet these actions have obvious impacts south of the border and into the Sea of Cortez. Action agencies must consult with FWS regarding these impacts.¹⁴²

Furthermore, it is a well-accepted tenet of international law that a sovereign country possesses the right to utilize its natural resources to its own benefit, except when such utilization harms the environment of another sovereign country.¹⁴³ This common-sense, tort-based principle is directly in play with the operation and maintenance of the lower Colorado hydrologic system, where United States diversion and pollution of the Colorado River leaves the area destitute. Both countries have directly supported this principle: "Each Government declares its intention to operate its storage dams in such manner, consistent with the normal operations of its hydraulic systems as to avoid, as far as feasible, material damage in the territory of the other."¹⁴⁴

To date, the Colorado River has been managed as two systems. This disconnect is having a tremendous effect on wildlife species, such as the desert pupfish and the southwestern willow flycatcher, whose habitat lies on both sides of the border and whose future existence relies on the health of the entire binational ecosystem. It is having an undeniably negative impact on United States-listed species, such as the vaquita and totoaba, that occur only in the Mexican portion of the LCRBE. Currently accepted principles of conservation biology and watershed management require that an ecosystem such as the Colorado River be managed as a whole, rather than as fragmented, artifi-

142. Indeed, in response to Defenders' challenge to FWS's section 7 regulations, the federal government explained to both the Eighth Circuit Court of Appeals and the Supreme Court of the United States its position that, under the plain language of the statute, while these requirements do not apply to actions taken in other countries, they certainly *do* apply where the agency action occurs in *this* country, but the effects are to a foreign species. See Brief of Petitioner at 13, n.6, *Defenders of Wildlife v. Lujan*, 911 F.2d 117 (8th Cir. 1990) (No. 89-5192, 89-5386) ("[b]ecause Section 4 specifically requires listing of foreign species, Section 7 will apply when an agency's funding or support of an action in the United States . . . may affect a foreign species") (emphasis added); accord, Brief of Petitioner at 35, n.23, *Lujan v. Defenders of Wildlife*, 504 U.S. 555 (1991) (No. 90-1424) (explaining that "Section 7(a)(2) might well apply if an action in the United States or on the high seas would be likely to jeopardize the continued existence of an endangered or threatened species in a foreign country.") (emphasis added).

143. *United States v. Canada* 3 R.I.A.A. 1905 (1941) (Trail Smelter arbitration) (on file with authors); see also *Gasser v. United States*, 14 Cl.Ct. 476 (Cl.Ct. 1988), *withdrawn by Gasser v. United States*, 22 Cl.Ct. 165 (Cl.Ct. 1990) (judgment and settlement of claims by Mexican nationals against U.S. government, for latter's operation of the Colorado River and damage to landowners south of the border).

144. Treaty Respecting the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, Feb. 3, 1944, U.S.-Mex., art.17, 59 Stat. 1219 [hereinafter *Water Treaty of 1944*], available at http://www.ibwc.state.gov/FORAFFAI/body_1944_treaty.HTM.

cial units.¹⁴⁵ To date, however, the U.S. federal and state government agencies have resisted active cooperation with Mexico for the benefit of the river ecosystem and people in both countries.

VI. ESA CONSERVATION PLANNING PROVISIONS

United States reluctance to consult on endangered species in Mexico extends to the Lower Colorado River Multi-Species Conservation Plan (MSCP) initiated in 1995. The overarching goal of the LCR MSCP is to provide long-term compliance with the ESA for federal and non-federal entities for the next fifty years.¹⁴⁶ Just as the Secretary may permit incidental takings by federal entities after section 7 consultation, the Secretary may issue incidental take permits to private parties under section 10.¹⁴⁷ Non-federal parties desiring a section 10 permit must submit a habitat conservation plan (HCP) that specifies impacts, steps to minimize and mitigate impacts, available funding, and other necessary measures.¹⁴⁸ Thus, in addition to the section 7 consultation on federal activities and their impacts, there will also be an HCP component of the LCR MSCP for non-federal and tribal interests, making the entire process a somewhat unique hybrid. The thirty-five-member steering committee includes wildlife and resource management agencies from the Department of Interior, wildlife and water resources management agencies from the lower basin states, lower basin Indian tribes, providers of Colorado River water and hydroelectric power resources, local governmental agencies, recreational interests, and until recently several environmental and conservation organizations.¹⁴⁹ It does not include any representatives from Mexico.

Reclamation, through late 1998, had supported a proposal to fund a study of conservation needs and opportunities south of the Southern International Boundary (SIB) with Mexico.¹⁵⁰ Although widely

145. See, e.g., N. LeRoy Poff et al., *The Natural Flow Regime*, 47 *BIOSCIENCE* 769 (Dec. 1997).

146. LOWER COLORADO MULTI-SPECIES CONSERVATION PROGRAM, REVIEW DRAFT: INTRODUCTION, PURPOSE AND NEED, DESCRIPTION OF COVERED ACTIONS, EFFECT OF COVERED ACTIONS, AND NO ACTION ALTERNATIVE 3-5 (Aug. 23, 1999) (on file with authors) [hereinafter DRAFT DESCRIPTION OF COVERED ACTIONS].

147. Compare 16 U.S.C. § 1536(b)(4) (1999), with 16 U.S.C. § 1539(a)(2).

148. 16 U.S.C. § 1539(a)(2)(A)-(B).

149. Late in 1998, the last conservationists on the MSCP steering committee, the Center for Biological Diversity and Defenders, withdrew because of the committee's continued refusal to adopt a biologically sound planning area and to reform the decision making procedures of the committee. See Comment, *Myopia on the Colorado*, ARIZONA DAILY STAR, Nov. 12, 1998, at 14A; see also John Kostyack, *Habitat Conservation Planning: Time to Give Conservationists and Other Concerned Citizens a Seat at the Table*, 14 *ENDANGERED SPECIES UPDATE* 51 (July/Aug. 1997).

150. See, e.g., U.S. Bureau of Reclamation, Facilitation Team Issue Paper Recommendation (Sept. 1998) (on file with authors).

touted as an ecosystem approach to conservation planning,¹⁵¹ the Steering Committee refused to support this proposal, abandoning a biologically sound planning area and leaving the status of Mexico and the Delta in limbo.¹⁵² The Steering Committee also limited the geographic scope of the program planning area as the river corridor below Glen Canyon Dam to the Southerly International Boundary, including the 100 year floodplain and the reservoirs at full elevations.¹⁵³ In May 1999, Reclamation, FWS, and the Metropolitan Water District of Southern California published a notice of their intent to prepare an environmental impact statement (EIS) to evaluate the impacts of implementing the LCR MSCP.¹⁵⁴ The EIS will serve many purposes: Reclamation's NEPA compliance and Record of Decision (ROD) for implementing its portion of the MSCP; FWS's ROD for issuing the HCP permit; and Reclamation's Biological Assessment of ongoing and future actions for FWS's Biological Opinion required under section 7 of the ESA.¹⁵⁵ It will contain a description of federal and state projects to be covered and their alternatives, as well as potential conservation measures and their alternatives.¹⁵⁶

Although the LCR MSCP Steering Committee may have intended to limit the scope of its enterprise in order to concentrate its efforts and funds on a manageable project, the effect may be to compromise the underpinnings of a successful HCP – i.e., sound science, meaningful public participation, adequate funding, and clear legal standards.¹⁵⁷ According to numerous reviews of the entire HCP program, conservation plans should be based on adequate biological information, contain measurable goals consistent with species recovery,

151. *See, e.g.*, Multi-Species Conservation program (MSCP) for the Lower Colorado River, Arizona, Nevada, and California, 64 Fed. Reg. 27000, 27001 (May 18, 1999).

152. *See* Lower Colorado River Multi-Species Conservation Program, Steering Committee Meeting Notes (Nov. 5, 1998) (on file with authors).

153. Multi-Species Conservation program (MSCP) for the Lower Colorado River, Arizona, Nevada, and California, 64 Fed. Reg. at 27001. The boundary between the United States and Mexico is delineated by the Northern International Boundary (NIB) between California and Baja California until it meets the Colorado River, where for twenty-two miles the River forms the boundary (known as the limitrophe), and meets the SIB, the boundary between Arizona and Sonora.

154. *Id.* at 27000. The EIS is required as a significant federal action under the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321-4370 (1989). The EIR, with MWD of California as the lead, is similarly required under CEQA, the California Environmental Quality Act. *See also* Multi-Species Conservation program (MSCP) for the Lower Colorado River, Arizona, California, and Nevada, 65 Fed. Reg. 43031 (July 12, 2000).

155. Multi-Species Conservation program (MSCP) for the Lower Colorado River, Arizona, Nevada, and California, 64 Fed. Reg. at 27001.

156. *Id.*

157. *See* DEFENDERS OF WILDLIFE, FRAYED SAFETY NETS: CONSERVATION PLANNING UNDER THE ENDANGERED SPECIES ACT (1998). This report's findings and conclusions have been echoed by all other independent reviews of the HCP program. *See, e.g.*, PETER KAREIVA ET AL., NAT'L CTR. FOR ECOLOGICAL ANALYSIS & SYNTHESIS & AM. INST. OF BIOLOGICAL SCIENCES, USING SCIENCE IN HABITAT CONSERVATION PLANS (1999); Elaine Harding et al., *The Scientific Foundations of Habitat Conservation Plans: a Quantitative Assessment*, 15 CONSERVATION BIOLOGY, 488, 488-500 (Apr. 2001).

provide long-term monitoring, and, most relevant here, call for independent scientific review for large-scale, multiple species plans.¹⁵⁸ The LCR MSCP has been cited as a “prime example of [the] failure to adhere to sound biological principles” because the plan severs the river from its delta.¹⁵⁹ This same review also recommended balanced representation on steering committees and fuller use of public scoping and comment periods under NEPA.¹⁶⁰ Withdrawal of all four environmental groups from the committee has raised questions about the adequacy of representation and decisionmaking procedures in the MSCP. Lastly, when the program plan is final, approval must be based on long-term recovery of the species, and the level of protection granted to private parties must be on a par with the quality of the plan and the level of certainty that it will produce the promised conservation benefits.¹⁶¹ So far, the LCR MSCP has flunked all of these tests.

Similar challenges face the residents of greater Tucson, many of whom now view the plight of the pygmy owl as related to their own effort to reign in uncontrolled human sprawl development in this fast-growing area. According to the FWS itself, “the urbanization of the Phoenix and Tucson metropolitan areas have resulted in a decline of riparian areas where the pygmy owl was historically found”¹⁶² Today, the largest remaining population of pygmy owls in Arizona is located in an area northwest of Tucson.¹⁶³ For this reason, the species’ original critical habitat designation included the northwest region of the Greater Tucson urban area.¹⁶⁴ This area, coincidentally, is also experiencing rapid change due to its highly desirable characteristics for residential and commercial development.¹⁶⁵

After the listing of the pygmy owl in 1997, over forty conservation and neighborhood groups formed the Coalition for Sonoran Desert Protection in order to support the creation of a science-based regional plan to conserve the pygmy owl and the Sonoran Desert. For decades, Pima County, which includes Tucson, had not done comprehensive planning for its rapid population growth.¹⁶⁶ With the listing of the owl, and ironically the failed attempt to prevent the construction

158. FRAYED SAFETY NETS *supra* note 157, at 80.

159. *Id.* at 102.

160. *Id.* at 81.

161. *Id.* at 83.

162. Determination of Endangered Status for the Cactus Ferruginous Pygmy-Owl in Arizona, 62 Fed. Reg. 10730, 10739 (Mar. 10, 1997).

163. *Id.*

164. Designation of Critical Habitat for the Cactus Ferruginous Pygmy-owl (*Sceloporus* *brasilianum* *cactorum*), 64 Fed. Reg. 37419 (July 12, 1999).

165. Rhonda Bodfield Sander, *Growth Is No. 1 Issue In Northwest*, ARIZONA DAILY STAR, Aug. 24, 2000, at B1.

166. “If we had known 20 years ago what we know now about natural resources, the northwest side [of Tucson] would look a lot different than it does today,” said Chuck Huckleberry, Pima County Administrator, in HIGH COUNTRY NEWS, Aug. 30, 1999, at 7.

of the disputed high school,¹⁶⁷ conservationists in Arizona could utilize federal law to require the County to improve its overall planning methods. In 1998, the Coalition for Sonoran Desert Protection submitted a proposed plan for the protection of the desert to Pima County's Board of Supervisors.¹⁶⁸ Later that year, the Board transformed the plan's ideas and submitted a request to the U.S. Fish and Wildlife Service for a section 10 permit under the ESA. This move would allow the County to gain relief from liability under the Act, in exchange for creating a plan whereby endangered species in the region would be protected.¹⁶⁹ The draft Sonoran Desert Conservation Plan (SDCP) was born.¹⁷⁰ Conservationists and many scientists have questioned the ability of HCPs to adequately protect species, but the Pima County Board of Supervisors has committed to use scientifically-based planning in the SDCP process, and thus far has been loyal to that commitment. Therefore, conservationists have supported the County's creation of a multi-species conservation plan, and have been closely involved with the process from the beginning.

The SDCP is an ambitious multi-species conservation plan which seeks to protect the cactus ferruginous pygmy owl and fifty-five other species and their habitat in the region, while still allowing some urban and suburban growth. The County faces many roadblocks in its creation of a viable plan. Among these is opposition from the development community especially from the vociferous Southern Arizona Homebuilders Association. In state court, the Homebuilders challenged the authority of the County Administrator to require developers to prove they had contacted the FWS first before receiving building and grading permits.¹⁷¹ Although the Homebuilders prevailed before the Superior Court in Tucson, the Board of Supervisors later adopted the overturned policies of the Administrator as interim conservation measures to protect the pygmy owl and other species until the Sonoran Desert Conservation Plan is finalized.¹⁷²

Another roadblock to a successful conservation plan is the plan's dependence on state trust land for its biological reserve. Much of the County's proposed reserve falls on as yet undeveloped trust land in

167. See *supra* notes 75, 76 and accompanying text.

168. Tony Davis, *Supervisors Ready To Act Against Sprawl*, ARIZONA DAILY STAR, Feb. 25, 1998, at 1A.

169. Federal judges are increasingly rejecting section 10 HCPs that do not conform with statutory requirements. See, e.g., Nat'l Wildlife Fed'n v. Babbitt, 128 F. Supp. 2d 1274 (E.D. Cal. 2000).

170. SONORAN DESERT CONSERVATION PLAN, <http://www.co.pima.az.us/cmo/sdcp/index.html>.

171. Southern Arizona Homebuilders Ass'n v. Pima County, No. C 2001 0661 (Pima Cty Super. Ct. May 10, 2001) (on file with authors).

172. Tony Davis, *Development Guidelines Approved*, ARIZONA DAILY STAR, June 6, 2001, at B1.

Pima County. However, as noted *infra*, state trust land in Arizona is not protected, and in fact currently must be sold or leased for highest and best use.¹⁷³ And, recently, the Town of Marana, whose town motto is "Come Grow With Us," proposed to annex forty-two square miles of state trust and private land in the northwest suburban fringe of Tucson.¹⁷⁴ The trust land in this region is prime pygmy owl critical habitat and, if annexation is approved, it could compromise the viability of the SDCP and perhaps the pygmy owl itself.

The importance of the Sonoran Desert Conservation Plan for survival of a semi-natural Sonoran Desert cannot be overstated. If Pima County continues to rely on strong science to guide all planning efforts, and is able to thwart attempts by the development community and others to derail the current plan, this plan will not only be a huge success regionally, but will also have national significance for future habitat and multi-species conservation planning efforts.¹⁷⁵

VII. STATE ENDANGERED SPECIES LAW

An increasingly important, albeit complementary, role is being played by U.S. state endangered species, wildlife and public trust laws. This is true in both Arizona and California (the only two U.S. states that contain the Sonoran Desert ecosystem), though for different reasons.¹⁷⁶

California has, arguably, the most comprehensive of the state endangered species acts.¹⁷⁷ Modeled after the federal act, it provides a mechanism for listing and prohibits taking of or trafficking in listed species. In addition, it covers both plants and animals and requires recovery plans and agency consultation on the impact of proposed state agency projects on endangered species. The state amended its act in 1997 to specifically add a procedure for incidental take permits, retroactively validating take permits previously authorized by the state without statutory authority.¹⁷⁸ Although the permits are only

173. ARIZ. REV. STAT. § 37-313(A) (1993). State Land Department and Arizona's conservative Republican Governor Jane Hull have on several occasions made moves to derail the County's conservation plan, first by proposing a bill, H.B. 2524, before the Arizona legislature that would have allowed the veto of any conservation plan by the State Land Department, other state agencies or the Governor. Conservation groups questioned the constitutionality of this legislation, but in the end it was defeated.

174. Tony Davis, *Marana Proposes Big Land Addition*, ARIZONA DAILY STAR, Aug. 3, 2001, at A1.

175. See, e.g., *Who's Stopping Sprawl?: The Endangered Species Act Goes to Town*, HIGH COUNTRY NEWS (Special Issue), Aug. 30, 1999, at 1; Tony Davis, *A Pocket-Sized Bird Takes on Sunbelt Subdivisions*, HIGH COUNTRY NEWS, Aug. 30, 1999, at 6-7.

176. See generally CTR. FOR WILDLIFE LAW & DEFENDERS OF WILDLIFE, STATE ENDANGERED SPECIES ACTS: PAST, PRESENT AND FUTURE (Feb. 1998) (on file with authors). See also 16 U.S.C. § 1535 (1999) (cooperation with the States).

177. CAL. FISH & GAME CODE §§ 2050-2089 (West 1998).

178. *Id.* at § 2081.

authorized if a HCP is in place, these plans have been highly controversial and the subject of litigation.¹⁷⁹

Arizona, on the other hand, where most of the U.S. Sonoran Desert is located, is one of only a handful of states without an endangered species act for animals.¹⁸⁰ Instead, the state relies on procedures developed by the Game and Fish Department for the re-establishment of “threatened native wildlife.”¹⁸¹ The procedures, which were the result of an Arizona Game and Fish Commission policy approved in 1987, do not include recovery plans or critical habitat designations, but instead identify a twelve-step process for the reintroduction of species, such as consideration of the social and economic impacts of a species’ return to its native state habitat. Arizona does possess a law for endangered plant species, but it similarly fails to designate critical habitat or require preparation of recovery plans.¹⁸²

The lack of a state endangered species act for animals, and a weak law for plants, leaves a gap in the legal system for the protection of Arizona’s wildlife, including those species in the Sonoran Desert. A state endangered species act with citizen enforcement¹⁸³ could not only give Arizona the ability to recover currently imperilled species,¹⁸⁴ but also play a vital role in preventing ecosystem fragmentation. With the SDCP, for instance, Arizona will have an important role in providing key cooperation for eventual implementation. A more fully developed state system to develop and enforce regional ecosystem plans would allow Arizona to identify important Sonoran habitats, protect those most at need, and allow human development on the least sensitive areas. At the federal level, the existence of such a state plan could catalyze increased authorities and funding from the FWS and other sources.¹⁸⁵

Along with limited protection of endangered species, Arizona and California have additional legal responsibilities for wildlife and habitat. The public trust doctrine is a significant source of this responsibility. The public trust doctrine provides that a state holds certain resources, primarily navigable waters, in trust for public use and that the government owes a fiduciary duty to manage such resources for

179. Another law on the books in California is the Fully Protected Species law, which prohibits listed species from take of any kind.

180. *CTR. FOR WILDLIFE LAW & DEFENDERS OF WILDLIFE*, *supra* note 176, at 28. The other states are Alabama, Arkansas, West Virginia, Wyoming, and Utah.

181. The Arizona Game and Fish Department now designates these species as “species of special concern,” though the list has been in draft form since 1996. *Id.*

182. *Id.*

183. *See, e.g.*, Susan George, William J. Snape, III & Rina Rodriguez, *The Public in Action: Using State Citizen Suit Statutes to Protect Biodiversity*, 6 *U. BALT. J. ENVTL L.* 1 (1997).

184. For certain federally listed species, such as the endangered Sonoran pronghorn, state biologists already play a leading role in devising conservation measures. Conversation with John Herbert, Noah Matson, and Rennie Anderson (July 10, 2001).

185. *See, e.g.*, 16 U.S.C. § 1535 (1999) (cooperation with the States).

the common good of the public as beneficiary. This doctrine traces its roots to Roman law, which provided that the air, running water, the sea, and consequently the shores of the sea, were things common to all humankind.¹⁸⁶ The Roman law public trust concept was adopted in England and later in the United States when the new government took control of the navigable waters of the land. Along with sovereign ownership of these waterways came a duty not to alienate the property of the trust to private interests that are contrary to the public good.¹⁸⁷

As trustee, a state such as California is under a duty to “protect the people’s common heritage of streams, lakes, marshlands and tidelands, surrendering that right of protection only in rare cases when the abandonment of that right is consistent with the purposes of the trust.”¹⁸⁸ If the public is deprived of public trust uses, the doctrine can be invoked by the public to reinstate the right to a specific use or to enjoin an individual from continuing to violate the trust.¹⁸⁹

Although traditionally the public trust was applied only to navigable waters or other waterbodies, the concept has been in a process of expansion over the last several decades so that one could argue that a wildlife trust exists in many states such as Arizona and California. For example, courts have held that the public trust applies to the following: historic and archaeological objects, scenery, wildlife, non-navigable streams, upland areas of a redwood forest, and parkland.¹⁹⁰ The expansion of the public trust has in a few instances included wildlife. One scholar believes that the public trust always included wildlife, and that it until recently has been artificially constrained to exclude wildlife as a public trust resource.¹⁹¹

The public trust doctrine has been used in Arizona with regard to water resources only. In *Arizona Center for Law in the Public Interest v. Hassell*, the Arizona Court of Appeals stated that public trust jurisprudence is nascent in Arizona, although its existence was acknowl-

186. Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 475-78 (1970).

187. *Illinois Cent. R.R. v. Illinois*, 146 U.S. 387, 441-44 (1892).

188. *Nat’l Audubon Soc’y v. Superior Court*, 658 P.2d 709, 722 (Cal. 1983).

189. *Id.* at 712 (describing a plaintiff’s petition to enjoin the Department of Water and Power from diverting water from Mono Lake’s tributaries on the theory that the shores, bed, and waters of the lake are protected by the public trust).

190. *Id.* at 721 (non-navigable waters that are tributaries to navigable waters); *Wade v. Kramer*, 459 N.E.2d 1025, 1028 (Ill. App. Ct. 1984) (dealing with archaeological objects, wildlife); *In re Steuart Transp. Co.*, 495 F. Supp. 38, 39 (E.D. Va. 1980) (dealing with wildlife); *Sierra Club v. Dept. of Interior*, 398 F. Supp. 284, 287 (N.D. Cal. 1975) (dealing with scenery, wildlife, redwood forest upland areas); *Paepcke v. Public Bldg Comm’n of Chicago*, 263 N.E.2d 11,15-16 (Ill. 1970) (dealing with parkland).

191. Gary D. Meyers, *Variation on a Theme: Expanding the Public Trust Doctrine to Include Protection of Wildlife*, 19 ENVTL. L. 723, n.4 (1989). The article quotes from *Arnold v. Mundy*, “[c]ommon property includes ‘the air, the running water, the sea, the fish, and the wild beasts’” 6 N.J.L. 1, 71 (1821)).

edged long ago.¹⁹² The court in this case invalidated a state law relinquishing title to lands in Arizona's watercourses that were navigable when Arizona was admitted to the Union.¹⁹³ In doing so, the court clearly recognized a public trust in Arizona. The court said:

[T]he legislative and executive branches are judicially accountable for their dispositions of the public trust. The beneficiaries of the public trust are not just present generations but those to come. The check and balance of judicial review provides a level of protection against improvident dissipation of an irreplaceable res.¹⁹⁴

Further, the Wildlife Violator Compact, A.R.S. § 17-501 *et seq.* (WVC), which Arizona accepted in 1990, is evidence of the wildlife trust responsibility.¹⁹⁵ The WVC states, "The participating states find that . . . [w]ildlife resources are managed in trust by the respective states for the benefit of all residents and visitors . . ."¹⁹⁶ The Department's Wildlife 2006 Strategic Plan also states that its goal is to "conserve Arizona's wildlife as a public trust."¹⁹⁷ A cogent argument can thus be made that Arizona has a public trust responsibility to protect wildlife. The Game and Fish Department, the body that has the responsibility to administer the laws of the state pertaining to wildlife,¹⁹⁸ must carry out this trust. If it does not, the trust doctrine will likely be tested in the courts of Arizona.

The Arizona State Land Department (SLD) also has the ability, if not the responsibility, to protect wildlife and habitat. The SLD is authorized by law to manage all lands owned or controlled by the State of Arizona, including the state trust lands.¹⁹⁹ The SLD is also responsible for classifying the lands' uses.²⁰⁰ The Arizona Supreme Court has recognized that as a result of the explicit trust created by the Enabling Act, "the duties imposed upon the State [are] the duties of a trustee and not [merely those] of a good business manager."²⁰¹ The leases of state land must serve the "best interest of the trust,"²⁰² however, the "best interest standard" does not require blind adher-

192. 837 P.2d 158, 168 (Ariz. Ct. App. 1991). "Navigable waters were, under the common law, considered as under the exclusive control of the government, in trust for the general public" *Id.* (quoting Maricopa County Mun. Water Conservation Dist. No. 1 v. Southwest Cotton Co., 4 P.2d 369, 372 (Ariz. 1931)).

193. *Id.* at 174.

194. *Id.* at 169.

195. The Wildlife Violator Compact is a compact between states regarding treatment of violators of wildlife laws. Ruth S. Musgrave, Sara Parker & Miriam Wolok, *The Status of Poaching in the United States - Are We Protecting Our Wildlife?*, 33 NAT. RES. J. 977, 999 (1993).

196. ARIZ. REV. STAT. § 17-502(a)(1) (1996).

197. ARIZONA GAME & FISH DEP'T, WILDLIFE 2006: A STRATEGIC PLAN FOR THE STATE'S WILDLIFE MANAGEMENT PROGRAM, www.gf.state.az.us/frames/dir_off/strat.htm.

198. ARIZ. REV. STAT. §§ 17-201 to 17-298 (1996).

199. *Id.* at § 37-102.

200. *Id.* at § 37-212.

201. *Kadish v. Arizona State Land Dep't*, 747 P.2d 1183, 1186 (Ariz. 1987).

202. ARIZ. REV. STAT. § 37-313(A).

ence to the goal of maximizing revenue at the cost of contracting with an irresponsible lessee or hindering important alternative uses.”²⁰³

Increasingly, the SLD’s management of state trust lands has come into question. Recently the SLD was challenged by the Arizona Center for Law in the Public Interest on the Department’s grazing lease system. The SLD has for years utilized preferences when renewing grazing leases and has been leasing the state trust lands for rates below fair market value. Environmentalists challenged this practice in an attempt to open up the grazing lease process to competition.²⁰⁴ The lower court granted summary judgment in favor of the Center, ruling that the Department had breached its fiduciary duty to the trust by failing to generate maximum return for the statutory beneficiaries, the public schools. However, the Arizona Court of Appeals recently ruled that due to the existence of issues of material fact, the challengers were not entitled to judgment as a matter of law and a remand to the trial court was necessary to review factual disputes.²⁰⁵

Despite its mandate to generate revenue, the Arizona SLD has a large amount of discretion in its responsibilities over state lands. Under Arizona law and the “Riparian Trust Fund,” the State Land Commissioner may acquire “land or interests in land located in riparian areas for public purposes consistent with conservation of wildlife and recreation.”²⁰⁶ This statute also states that the commissioner has authority to make “other expenditures as promote the purposes of the *public trust*.”²⁰⁷ Under the Arizona Preserve Initiative (API), the State Land Commissioner has some discretion to reclassify state lands as suitable for conservation purposes.²⁰⁸ The Commissioner can take a number of different factors into consideration in deciding whether to reclassify the lands: wildlife and wildlife habitat, open space, unique scenic beauty, costs of mitigation for endangered wildlife, and whether reclassification is in the best interests of the trust.²⁰⁹ Whether

203. *Havasu Heights Ranch & Dev. Corp. v. Desert Valley Wood Prod., Inc.*, 807 P.2d 1119, 1128 (Ariz. Ct. App. 1990).

204. *Jeffries v. Hassell*, 3 P.3d 1071 (Ariz. Ct. App. 1999).

205. *Id.* at 1072-73 (*review denied*, Apr. 18, 2000). The ultimate result in this case is still pending.

206. ARIZ. REV. STAT. § 37-1156(1) (2000).

207. *Id.* at § 37-1156(B)(2) (emphasis added).

208. ARIZ. ADMIN. CODE § R12-5-2502 (1999). In November 2000, the voters turned down Proposition 100, which would have allowed up to three percent of the SLD’s holdings to be set aside for conservation. Setting these lands aside permanently for conservation requires a change to the Arizona Constitution, and it was therefore necessary to send this portion of the Growing Smarter legislation to the voters. A coalition of conservation groups organized to defeat this referendum, in order to secure the placement of a much larger amount of state trust lands in a conservation trust in the future. *See* DEFENDERS OF WILDLIFE, BIODIVERSITY, CITIZENS AND THE STATES: 2000 BALLOT MEASURE, NOVEMBER 2000, <http://www.defenders.org/states/factsheets/00ballots.html>.

209. Unfortunately, despite the auspicious language of the API, there exist serious geographic limitations to it. Also note that set aside of lands under API is not free. Those who petition for lands to be preserved have to come up with the funding to pay for the lands within a

the Arizona SLD will balance its mandate to generate revenue with protection of Sonoran Desert wildlife and habitat remains to be seen.

VIII. PROTECTION OF ENDANGERED SPECIES AND HABITAT UNDER MEXICAN LAW

Like the desert itself, the threats facing Sonoran wildlife span both sides of the border. Not surprisingly, then, many species are protected under Mexican, as well as U.S. Law.²¹⁰ As a general rule, Mexican law has historically afforded less protection than species enjoy on the U.S. side of the border. Ironically, Mexico extends that protection to a substantially broader range of species. More importantly, Mexico's federal wildlife laws are experiencing a rapid period of development that is narrowing the legal divide between the two countries.

Prior to March 2000, the Norma Oficial Mexicana (NOM)-059-1994 defined the standards for listing and protecting species at risk in Mexico.²¹¹ NOM-059, adopted as a counterpart to the U.S. ESA,²¹² establishes four categories of protected species: endangered ("en peligro de extinción"); threatened ("amenazada"); rare ("rara"); and specially protected ("sujeta a protección especial"). Within each of these categories, NOM-059 draws a further distinction between those species that are endemic to Mexico, and those with a range outside the country.²¹³ Sonoran species listed under NOM-059 include the Sonoran pronghorn (E), jaguar (E), vaquita (E), yuma clapper rail (E), razorback sucker (E), Colorado squawfish (E), desert pupfish (E), totoaba (E), peregrine falcon (T), cactus ferruginous pygmy owl (T), desert tortoise (T), and flat-tailed horned lizard (T).²¹⁴ The Mexican list also includes a variety of Sonoran species not protected under U.S. federal law, such as the Madrean Alligator Lizard (R), Mexican blacktail rattlesnake (SP), bighorn sheep (SP), tiger rattlesnake (SP) and western box turtle (SP).

certain amount of time. The set aside only guarantees that the land will not be developed in the meantime. See ARIZ. ADMIN. CODE § R12-5-2502.

210. See generally 16 U.S.C. § 1537 (1999) (International Cooperation).

211. "Normas Oficiales Mexicanas, NOM-ECOL-059-1994, Que determina las Especies y Subespecies de Flora y Fauna Silvestres Terrestres y Acuáticas en Peligro de Extinción, Amenazadas, Raras y las Sujetas a Protección Especial y que Establece Especificaciones para su Protección," D.O., 16 de mayo de 1994, available at http://www.ine.gob.mx/dgra/normas/rec_nat/no_059.htm (including a list of protected species).

212. Violations of NOM-059 are sanctionable under Mexico's General Law of Ecological Equilibrium and Environmental Protection, as well as other natural resource laws. "Ley General del Equilibrio Ecológico y la Protección al Ambiente," D.O. 28 de enero de 1988 (as amended) (on file with authors). See also "Ley de Pesca," D.O. 25 de junio de 1992 (as amended) (on file with authors); "Ley Forestal," D.O. 9 de diciembre 1992 (as amended) (on file with authors); "Ley Federal de Caza," D.O. 5 enero 1952 (as amended) (on file with authors); "Código Penal para el Distrito Federal en materia del Fuero Común y para toda la Republica en materia del Fuero Federal," D.O. 14 de agosto de 1931 (as amended) (on file with authors).

213. NOM-059 § 5.2.

214. *Id.* at § 5.2 Listados de Fauna.

The level of protection accorded a species under NOM-059 varies with its classification. Endangered and threatened species may be removed from their natural habitats for purposes of scientific research or captive breeding aimed at eventual reintroduction, but commercial exploitation or possession of endangered and threatened species is generally prohibited.²¹⁵ Rare and specially protected species may be commercially exploited, provided prior approval is secured from competent authorities.²¹⁶ Listed species that are endemic to Mexico are afforded a modest degree of habitat protection. Any person intending to develop or use land on which a listed endemic species occurs must “ensure the conservation of the species according to the requirements of applicable law.”²¹⁷

In March 2000, Mexico adopted a comprehensive new federal wildlife law, the *Ley General de Vida Silvestre* (“LGVS”).²¹⁸ The LGVS establishes new national policies for the protection and sustainable development of Mexico’s tremendous biodiversity.²¹⁹ It also makes significant changes to NOM-059 and to the system for protecting wildlife at risk.

Title VI of the LGVS directs the Secretary of Environment and Natural Resources to develop and review the list of species and populations at risk in consultation with a National Technical Consultative Council established elsewhere in the law, and authorizes any person to propose additions, removals or changes to that list.²²⁰ This provision for public participation, treated more expansively elsewhere in the law, is a substantial and positive development in the conservation of Mexico’s wildlife. LGVS also collapses the four categories of NOM-059 into three categories of “species and populations at risk”: endangered, threatened, specially protected.²²¹ The special treatment for endemic species is eliminated, with endemism treated instead as a relevant factor in identifying species with high conservation priority.²²²

In a troubling development, article 60 of the LGVS not only directs the Secretary to promote and impel the conservation and protection of species at risk, it also authorizes the Secretary to certify “sustainable development” projects for species and populations in any

215. *Id.* at §§ 6.1-6.2.

216. *Id.* at §§ 6.3-6.4.

217. *Id.* at § 6.5 (translation by authors from the original Spanish: “deberá asegurarse su conservación atendiendo a las disposiciones jurídicas vigentes”).

218. “Ley General de Vida Silvestre,” D.O. 7 de marzo de 2000, available at http://www.ine.gob.mx/dgvs/ley_vs.html.

219. *Id.* at § 5.

220. *Id.* §§ 56-57.

221. *Id.* at § 58.

222. *Id.* at § 61.

risk category, including endangered species.²²³ Considered in conjunction with the system for Management Units for the Conservation of Wildlife (UMAS) codified by the LGVS,²²⁴ and the extractive use standards established in Title VII, this provision could facilitate a dramatic, poorly regulated and unsustainable expansion in the commercial exploitation of threatened and endangered wildlife in Mexico. The LGVS authorizes the Secretary to establish limitations on the use of particular wildlife populations, including prohibitions in appropriate circumstances, when other methods are insufficient to ensure the conservation or recovery of the population.²²⁵ It remains to be seen whether the standards adopted under this provision will be sufficiently rigorous to constrain potential abuses.

On a slightly more positive note, the LGVS declares that conserving the natural habitat of wildlife is in the public interest, and permits (but does not require) the Secretary, in consultation with the Council, to identify and declare habitats critical for wildlife conservation.²²⁶ These habitats may include: areas occupied by a species at risk at the time it is listed if those areas are necessary for the species to carry out an essential biological function, such as reproduction; areas that are being rapidly degraded or reduced, but which contain a significant concentration of biodiversity; and areas containing an ecosystem at risk of disappearing, when designating the area would help reduce the risk of disappearance.²²⁷ The Secretary will enter into agreements with owners or legitimate possessors of property in areas designated as critical habitat defining the special management and conservation standards for the habitat. No public or private action may be undertaken in a designated critical habitat, or in a manner which may affect the protection, recovery or reestablishment of natural components of that habitat, unless the action conforms to the applicable management and conservation standards.²²⁸

The full implementation of the LGVS will require wholesale revisions to Mexico's wildlife laws and standards, including NOM-059. Thus, the state of the wildlife regime in Mexico remains in flux. The election of Vicente Fox to the Presidency in December 2000, and Fox's appointment of respected conservationist Victor Lichtinger as Secretary of Environment and Natural Resources, has made many observers cautiously optimistic that the new Administration will move Mexico toward a more responsible and precautionary regime for wild-

223. *Id.* at § 60.

224. *Id.* at tit. V, Cap. VIII.

225. *Id.* at § 71.

226. *Id.* at § 63.

227. *Id.*

228. *Id.* at § 64.

life management. Whether this optimism is warranted remains to be seen.

IX. CONCLUSION: GO WITH THE FLOW?

*On the map the Delta was bisected by the river, but in fact the river was nowhere and everywhere, for he could not decide which of a hundred green lagoons offered the most pleasant and least speedy path to the Gulf. So he traveled them all . . . He divided and rejoined, he twisted and turned, he meandered in awesome jungles*²²⁹

This description of the Colorado River Delta in the Sonoran Desert early last century bears no resemblance to the Delta today. The massive control and complete manipulation of water for human consumption in Mexico, but mostly the United States, has dried the Delta out to a fraction of its millennial past. And, unless an incredible infusion of binational good will and diplomatic genius hits the Colorado River, only the ESA may be capable of saving this river ecosystem.²³⁰ So it might be for the entire Sonoran Desert.²³¹

Yet, metaphorically, Leopold's description is an even more powerful tool to spark our imaginations. We all need our personal "jungles" to explore in the natural world. As human development and consumption increase along with the human population, it is crucial to hold onto the natural and wild places that are important to us. The

229. ALDO LEOPOLD, *A SAND COUNTY ALMANAC* 150 (1948).

230. Pursuant to the 1944 water treaty between the two countries, *supra* note 144, Mexico could press the United States to negotiate clearer terms for determining "surplus of waters" pursuant to Article X. *But see* U.S. DEPARTMENT OF THE INTERIOR, FINAL ENVIRONMENTAL IMPACT STATEMENT AND RECORD OF DECISION ON COLORADO RIVER INTERIM SURPLUS CRITERIA (Dec. 2000 – Jan. 2001) (in order to assist the state of California to live within its legal allotment of water, Lake Mead and other reservoirs will be lowered over the next fifteen years to accommodate United States consumptive use despite the fact that such an action will, by all accounts, harm the Delta and upper Gulf).

231. Yet perhaps not. Partially as a result of ESA pressure, but also as a result of widespread public support for special place protection, President Clinton used his authority under the Antiquities Act of 1906, 16 U.S.C. § 431 (1991), to designate two national monuments in the Sonoran Desert. As one of the last remaining examples of untrammeled Sonoran Desert, the pristine ecosystem encompassed within the *Sonoran Desert National Monument* in south-central Arizona boasts a spectacular diversity of biological resources. The landscape, ranging from high desert peaks to wide lowland valleys, harbors unique assemblages of desert vegetation and numerous wildlife species, including several that are endangered or vulnerable, such as the desert tortoise and lesser long-nosed bat. The area is also rich in historical resources, including ancient villages, campsites, rock art, artifacts, and travel routes of the prehistoric Hohokam and other native cultures, as well as evidence of the region's more recent history, such as segments of the Juan Bautista de Anza National Historic Trail and the "Gila Trail" used by '49ers during the Gold Rush. *The Ironwood Forest National Monument* in southern Arizona provides a unique snapshot of Sonoran Desert life and history. The monument's geologic and topographic variability - including desert mountain ranges and desert valleys - contributes to the area's complex ecosystem and extraordinary biological diversity. The mountains support the Sonoran Desert's highest density of ironwoods, a tree that has been known to live in excess of 800 years. Ironwoods and their associated understory growth provide ideal habitat for desert bighorn sheep, cactus ferruginous pygmy owl, and an array of other bird and animal life. The monument also contains evidence of 5,000 years of human inhabitants, including abundant rock art and other archaeological sites, several of which have been listed on the National Register of Historic Places.

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Sonoran Desert is obviously one of those places.²³² By establishing a line in the sand, the ESA sparks conflict but also cooperation and innovation.²³³ The Act is a priceless mechanism by which wildlife, biodiversity and landscape values can survive and hopefully prosper. Its reach is both greater and more flexible than most realize. Such are the ironies of a law that seeks to increase the quality of human life by ensuring the conservation of all life.

232. See, e.g., 39 J. SOUTHWEST 303-860 (Autumn-Winter 1997) ("Dry Border" double issue with various articles on binational Sonoran Desert Reserves). As Bill Broyles and Richard Felger state in the introduction, "We can have our desert and live here too - but only if we inventory what we have now and work to save it from needless fragmentation, alteration and degradation The theme of this volume is the magnificence and richness of our desert homeland - our inheritance and our legacy. With challenge comes opportunity; with understanding comes passion." *Id.* at 304. See also Gary Paul Nabhan, *THE DESERT SMELLS LIKE RAIN: A NATURALIST IN PAPAGO INDIAN COUNTRY* (1982).

233. See generally *BIODIVERSITY AND THE LAW* 1-79 (William J. Snape III, ed. 1996).