

PERSPECTIVES FROM THE FIELD

Three Endangered Species Acts: The Costs to Biodiversity Conservation

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Many consider the 1973 Endangered Species Act (ESA) to be the workhorse of environmental protection in the United States (US). The 1973 ESA was passed by Congress with nearly unanimous support and was part of President Richard M. Nixon's far-reaching environmental agenda. Much has changed in ESA political and public support. In 2010, the Western Governors Association referred to the "nonsensical policy" in implementing the ESA (Silva, 2010),¹ and Congress delisted a population segment—the western gray wolf (*Canis lupus*)—by amendment (US House of Representatives, 2011, p. 290).² It is nothing short of astonishing to compare how different the discussion was at the genesis of the three ESAs as compared to now (Doremus, 2010).

A growing number of legal scholars and those "on the ground" argue that political polarization and lack of leadership have left environmental protection burdened with obsolescent statutes and regulatory strategies (Wood, 2009)—a train without tracks going nowhere (Wiersema, 2008). Much of the existing literature on endangered species conservation in the US is based on a comparatively short historical perspective and pays little if any attention to two—the 1966 and 1969 acts—of the three ESAs (Rosenberg, 1980).

Strong connections or departures between different legislative or policy efforts over time can often lead to vastly different bureaucratic, legal, and environmental outcomes (Herman et al., 2008). Given the

ever-increasing rate in the loss of rare plants and animals (He and Hubbell, 2011) and the need to conserve representative samples of native ecosystems [International Union for Conservation of Nature and Natural Resources (IUCN), 2011], it is worth another look at the three ESAs and their relative costs to biodiversity conservation.

Concept Base

Endangerment is not a new concept. In 1886, the US National Museum lacked bison (*Bos bison*) in their collection. William T. Hornaday of the museum thought at least a few thousand bison still inhabited part of what once constituted the great northern bison range, whereas the actual number remaining in the US was probably less than 300 (of an original 40–60 million). Upon return from a collection trip, he wrote *The Extermination of the American Bison* (1889), providing a four-part criterion for endangerment of species: habitat loss, overharvest, lack of regulatory protection, and vulnerability. A global perspective and order of species importance in conservation were added in by Hornaday in 1913.

In 1894, Congress passed the Yellowstone National Park Protective Act "to protect the birds and animals in Yellowstone National Park, and to punish crimes in said park" (US Congress, 1895, p. 73). Although established in 1872, Yellowstone lacked the federalism to prevent the further erosion of its natural resources. The 1894 Act was important because it confirmed two federal roles: one to reserve land and then to protect its natural resources. The endangerment stage was set—a four-part ecological criteria, a global issue, and federalism were in place.

Protection of Endangered Species of Fish and Wildlife

Over a half century passed before the enactment of legislation specific to the conservation of species at risk of extinction. In 1966, Public Land Law 89-669A—Protection of Endangered Species of Fish and Wildlife—

was enacted to provide "for the conservation, protection, and propagation of native species of fish and wildlife, including migratory birds, that are threatened with extinction: to consolidate the authorities relating to the administration by the Secretary of the Interior of the National Wildlife Refuge System; and for other purposes" (US Congress 1966a, p. 926).

The Public Land Law 89-669A Act's need was clear—"to advance the objectives of the Inter-American Treaty on Nature Protection and Wildlife Preservation" and "parallel one of the recommendations on endangered wildlife of the First World Conference on National Parks" (FWCNP) (US Congress, 1966b, p. 2), held in Seattle in 1962. The FWCNP was to establish a better understanding of species extinctions and protected areas

that for every kind of animal or plant threatened with extinction an appropriate area of natural habitat be provided[,] . . . wildlife refuge, wilderness area, or equivalent reserve[,] to maintain an adequate breeding population, and [the FWCNP] takes the view that any species so threatened which is not accorded such official sanctuary proclaims the failure of the Government concerned to recognize its responsibilities to future generations of mankind.

The 1966 Act followed this *protected area* conservation model and expanded authorities and responsibilities of the National Wildlife Refuge System [sec. 4(a)], provided funding to acquire new refuge lands to protect species [sec. 2(c)], and introduced the concept of *consultation*—other federal agencies shall consult with the Secretary of Interior to encourage, *where practical*, furtherance of the Act [sec. 3(d)]. The "where practical" is the common Act criticism.

Endangered Species Conservation Act of 1969

The Ninth World Conservation Congress at Morges (IUCN, 1967) brought forth progress on the IUCN *Red Data Book on*

Animals and Plants Threatened with Extinction (known as the *Red Book*). Since 1963, the *Red Book* has been widely recognized as the most comprehensive and objective global approach for evaluating the conservation status of plant and animal species. The *Red Book* identifies at-risk species by two ecological forces—population numbers and distributions—in five categories, two at global risk to extinction (G1 and G2) and three secure (G3–G5).

The Ninth Congress continued the FWCNP emphasis on protected areas and drew up the Overall Strategic Plan for World Conservation. By then, 63 countries were represented in the IUCN. Awaiting ratification were 21 applications, including one from the US Interior Department. The conservation message of Public Land Law 91-135—the Endangered Species Conservation Act of 1969—was twofold: a global issue and global governance. The Act considered the following:

A species or subspecies of fish and wildlife shall be deemed to be threatened with worldwide extinction whenever the Secretary [of Interior] determines, based on the best scientific and commercial data available to him and after consultation, in cooperation with the Secretary of State, with the foreign country or countries in which such fish or wildlife are found and, to the extent practicable, with interested person and organizations and other interested Federal agencies, that the continued existence of such species or subspecies is, in the judgment of the Secretary, endangered. [sec. 3(a)]

and

To ensure the worldwide conservation of endangered species and to prevent competitive harm to affected United States Industries, the Secretary [of Interior], through the Secretary of State, shall seek the convening of an international ministerial meeting of fish and wildlife prior to June 30, 1971, and included in the business of that meeting shall be the signing of a binding international convention on the conservation of endangered species. [sec. 7(a)]

The “worldwide” extinction criteria was significant—it provided quantitative criteria for listing species (Robbins, 2009) under the Act. The Act expanded coverage to amphibians, reptiles, mollusks, and crustaceans [sec. 7(f)]. Nevertheless, major success in implementation came with the minis-

terial meeting and the Convention on International Trade in Endangered Wild Fauna and Flora signed in March 1973.

Endangered Species Act of 1973

The Endangered Species Conservation Act of 1969 was unpopular with environmental organizations. In fact, they considered it deplorable (US Congress, 1972):

The bills that have been introduced remedy the salient defects of the old Endangered Species Act of 1969 which did not work well, in that they do not contain the provision for protecting domestic endangered species and they eschew the egregious concept of “worldwide extinction” which crippled the 1969 Act which made it practically unworkable [p. 79]. . . . [We could] have an endangered stock of grizzly bears, for example. We could then list that stock in the areas in which it occurred in the lower 48 states. The stock in Alaska would be unaffected by the listing [p. 98].

Their view was a simple mix of political power and self-driven growth. Passage in Congress of Public Law 93-205—Endangered Species Act of 1973 [US Fish and Wildlife Service (USFWS), 2011]—was built on the “passionate images of large and breathtaking wildlife” (Petersen, 1999, p. 463). Such “charismatic megafauna” drive environmental organization membership and intervention in governmental policy (Clucas, McHugh, and Kato, 2008). In contrast, the vast majority of species at global risk to extinction (G1 and G2) are often described as small and ugly and at the bottom of conservation priorities.

To understand the 1973 Act requires the consideration of how four key requirements perform: the purpose of the Act to provide “a means whereby the ecosystems upon which endangered species and threatened species depend” [sec. 2(b)]; whether the “program for the conservation of listed species” is working [sec. 2(b)]; and whether interagency regulation is working—critical habitat [sec. 5(b)] and jeopardy [sec. 3(b)]; and consultation [sec. 7(a)].

Ecosystems

The grizzly bear (*Ursus arctos*) and gray wolf provide the sole examples, and that

de facto (Duane and DuMond, 2010) is the purpose of the 1973 Act—to provide the ecosystems upon which endangered species and threatened species depend. That is the only ecosystem application in nearly a half century.

Species

What a *species* is or is not would seem simple but not in the history of the three endangerment Acts. The 1969 Act introduced the subspecies in a legislative context—“bureaucratic mischief,” according to O’Brien and Mayr (1991), and of little value in conservation (Zink, 2004). The 1973 Act added to the “taxonomic inflation” with the distinct population segment (DPS). As requested in the testimony leading to the Act, this listing included globally secure species that may have a segment in the lower 48 states or elsewhere.

In 2007, according to the most recent USFWS report, nearly a billion dollars was spent on the recovery of ESA listed species, about 83% going to globally secure species (G3–G5), including the bald eagle (*Haliaeetus leucocephalus*) (G4), grizzly bear (G5), gray wolf (G5), spotted owl (*Strix occidentalis*) (G3), lynx (*Lynx rufus*) (G5), Chinook salmon (*Oncorhynchus tshawytscha*) (G5), sockeye salmon (*Oncorhynchus nerka*) (G5), and steelhead (*Oncorhynchus mykiss*) (G5), among others (USFWS, 2009). The essential question is not whether a DPS can receive federal funding—it does—but whether the approach is solid scientifically.

Much of the discussion around taxonomic inflation concerns the criteria to save genetic diversity. For example, in “Neotropical Mammals and the Myth of Amazonian Biodiversity,” Mares (1992, p. 977) provided an important principle: potential loss of biodiversity is *less* if one attempts to maximize “the genetic distance between species selected for preservation.” Another way to state the principle is that the “*disparity* in the assemblage of species that is conserved” is important to biodiversity conservation (Mace and Purvis, 2008, p. 14, my emphasis).

In practical terms, taxonomic inflation (subspecies and DPS) in the 1973 Act dramatically increases bureaucratic process such as

lists, rules, brochures, and maps (Garnett and Christidis, 2007). Perhaps most important is the accompanying public fatigue (Haig et al., 2011). Overall, the purpose of the 1973 Act to conserve the ecosystem is subordinated by taxonomic inflation that could nullify the Act (Schwartz, 2009).

Critical Habitat and Jeopardy

Critical habitat is “the specific areas within the geographic area occupied by the species, at the time it is listed” [sec. 5(A)(i)] and designated either by the USFWS or the National Marine Fisheries Service (NMFS) [sec. 3(B)(2)]. As with most of the 1973 Act, discretion is left to the agency to define and identify critical habitat: no consistent guidance exists other than that slowly being developed by the courts. It is no surprise that a great deal of confusion exists among the agencies, courts, environmental organizations, and developers in understanding critical habitat (Robbins, 2010). As of June 2011, of 1,372 listed species in the US, 607 (30.7%) have designated critical habitat.

Jeopardy is most often associated with critical habitat. Any federal agency—except the Department of Defense [sec. 4(3)(B)(i)]—that authorizes, funds, or performs an action must consult with the USFWS or the NMFS to “insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of its habitat” [sec. 7(2)].

Jeopardy is neither fully defined in the 1973 Act nor in the USFWS/NMFS regulations. Court cases—for example, *New Mexico Cattle Growers Association v. United States Fish and Wildlife Service*, *Sierra Club v. United States Fish and Wildlife Service*, *Gifford Pinchot Task Force v. United States Fish and Wildlife*, and *Cape Hatteras Access Preservation Alliance v. U.S. Department of Interior*—are refining the definition. Defining the jeopardy concept is handicapped by lack of research and empirical data (Fish, 2010).

Consultation

Consultation—gaining authorization for a project either from the USFWS or the

NMFS—is big business. In 2008, one agency, the US Forest Service, initiated 6,741 *biological assessments*—analyses to determine project impact on listed species—and requested 1,086 informal concurrences and 194 formal consultations.

Is interagency regulation effective? The political science literature shows it is very difficult for one government agency to consistently regulate and control another (Biber, 2009).

Is there evidence that consultation is working? According to the US Government Accountability Office (USGAO, 2009), the USFWS has no formal way to track either the success or failure of 1973 Act consultations. The USFWS relies on the area or field-office biologist to track project impacts on Act listed species—a biologist who may move, forget, retire, or die. No one knows whether the 1973 Act consultation is working.

The 1973 Act requires all federal agencies to “utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species” [sec. 7(a)]. The Act, as with listing criteria, critical habitat, jeopardy, or other requirement, provides no guidance—an open door to entrepreneurial policy.

The Forest Service and the Bureau of Land Management (BLM) “sensitive species” program is entrepreneurial policy in response to the 1973 Act “furtherance” requirement. A *sensitive species* is identified to have a viability concern within the administrative unit. An example is the white-faced glossy ibis (*Plegadis chihi*). The ibis is globally secure (G5) with a population of about 1.2 million and a breeding range of about 5.3 million km² or about equal to 60% of the US land area. In the late 1960s, it extended its growing range onto lands managed by the BLM in Idaho. The population in Idaho is small—thus, viability is an issue, and this viability concern might lead to listing under the 1973 Act.

This first issue is list inflation—about 3,240 species on Forest Service and 1,200 on BLM lands are considered sensitive (list last up-

dated in 2002) (BLM National Operations Center, personal communication, July 20, 2011; US Forest Service, 2011, n.d.).³ The second issue is process. The process has three steps: review the program or project and possible effects on sensitive species, make a viability call, and then conduct informal consultation with the USFWS or the NMFS. Is the furtherance requirement working? No case history has appeared in the *Federal Register*, where designating a species as sensitive has the regulatory protection to preclude 1973 Act listing.

What Now?

The Ninth World Conservation Congress began with an Overall Strategic Plan for World Conservation, which reached fulfillment in 1993 with the Convention on Biological Diversity (CBD). By 2010, a total of 193 countries had ratified, acceded to, accepted, or approved the CBD. Among the world’s nations, only the US, the Vatican, and North Korea have yet to ratify, accede to, accept, or approve the CBD.

The CBD has emerged as the best overarching tool to save biodiversity and its economic and cultural values (Snape, 2010). The CBD has 80% of the world’s threatened species (G1 and G2) in some form of protected area; the US under the 1973 Act has 47 of the nearly 1,400 (0.03%) listed species recovered: 18 due to data error, 10 are extinct, and 21 (0.02%) are ecologically recovered (USFWS, 2010). All but two major biomes—temperate grasslands and freshwater bodies—are represented in CBD protected areas; the US under the 1973 Act is unable to protect its rare biomes and ecosystems.

A growing number of legal and policy scholars focus on institutional and policy structure and realize the importance of bringing back a role for substantive law and policy in the practical management of endangerment (Wiersema, 2008). Although the ecological sciences still have a role to play, success at this juncture in biodiversity conservation hinges more on the mobilization of legal and policy scholars to elevate and encourage changes that have been outside the scope of recent conservation (Biber, 2009). Despite good intentions, modern “en-

vironmental law has proved a colossal failure” (Wood, 2009, p. 43).

The answers are not so complex. First, ratify the CBD. No single law, state or federal, is in the way—only leadership (Snape, 2010). CBD is performance—measurable targets and schedules of accomplishment (IUCN, 2011). CBD performance is deliberate in expanding biodiversity targets and incorporating basic issues—human well-being and economic stability—and effectively dealing with new issues—the fair and equitable sharing of genetic resources so important to areas of food supply and medicine to climate change.

Second, move quickly as to make government performance “more . . . competent and more efficient” (Obama, 2011, p. 1). Today’s institutional models evident in the 1973 Act—critical habitat, jeopardy, and consultation—are not working and cannot guarantee the achievement of any one particular goal (Biber, 2009). President Barack Obama, like numerous presidents before him, has pledged to remove the unseemly influence of interest groups on the policy-making process (Grossmann, 2009) and undertake a sweeping reorganization of the federal government. The federal government holds vital natural resources in trust, for the public—present and future generations of citizens. In theory, government is supposed to police the conservation of the public trust resources, yet the agency politics and lack of effectiveness in their management is rarely exposed (Wood, 2009).

Third, focus on global governance of endangerment—protected areas and species as in the 1966 Act and the worldwide extinction criteria in the 1969 Act. This criteria is science-based, quantitative, and simple, and easily understood by the public (Robbins, 2009). Nearly 24,480 species are at risk (G1 and G2) of extinction in the US—many small and ugly—and only an ecosystem approach will be adequate in their conservation (Wilcove and Master, 2005). Ecosystem representation would provide the protection of species for all groups of organisms as recommended in the CBD.

Without a fundamental change, the government through the 1973 Act will continue

to diminish biodiversity at the ecosystem and species levels. The 1973 Act is geared almost entirely to a process that now undermines confidence in science and that of endangerment. Challenges are too often resolved by letting loose entrepreneurial ideas—DPS or sensitive species—rather than by focusing on the critical task of saving rare ecosystems and species. Bureaucracy is not a substitute for conservation, nor is it an adequate replacement for the protected-area approach in the 1966 Act or the worldwide extinction criteria in the 1969 Act.

The task of defining endangerment should not be left to the agencies charged with enforcement. A new ESA is needed that builds on the 1966 Act, 1969 Act, and the CBD. Passage of a new Act is problematic because Congress is heavily influenced by interest-group lobbyists, as they were in replacing the 1969 Act. Nevertheless, the needed reframing of endangerment by prominent legal and policy scholars would reverse the substantial costs to biodiversity conservation now evident in the 1973 Act.

Notes

1. Comments regarding Western Governors Association Meeting, Las Vegas, Nevada, December 7–8, 2010.
2. The amendment includes the following:

SEC. 1713. Before the end of the 60-day period beginning on the date of enactment of this Act, the Secretary of the Interior shall reissue the final rule published on April 2, 2009 (74 *Fed. Reg.* 15123 et seq.) without regard to any other provision of statute or regulation that applies to issuance of such rule. Such reissuance (including this section) shall not be subject to judicial review and shall not abrogate or otherwise have any effect on the order and judgment issued by the United States District Court for the District of Wyoming in Case Numbers 09–CV–118J and 09–CV–138J on November 18, 2010.

3. The proposed rule (with many requirements) in the *Federal Register* (US Forest Service, 2011) replaces “sensitive species” with “species of special concern” for which a responsible official may determine a viability concern within the plan area.

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