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Introduction to "*The Endangered Species Act at Thirty, Volume 1*"

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I Introduction

J. Michael Scott, Dale D. Goble, and Frank W. Davis

Conserving the biological infrastructure that makes life possible is crucial to the survival of the human species. Providing the material requirements of the human population is a fundamental imperative. This is the dilemma of our time: how do we reconcile the preservation of nature with increasing human population and consumption?

This book examines one legislative effort to resolve the dilemma, the Endangered Species Act of 1973 (ESA 1973). The ESA was an idealistic and perhaps naive attempt to preserve humanity by preserving other species in the ecological support system that makes life possible. In the words of the House report accompanying the bill:

A certain humility, and a sense of urgency seem indicated. . . . One might analogize the case to one in which one copy of all the books ever printed were gathered together in one huge building. The position in which we find ourselves today is that of custodians of this building, and our choice is between exercising our responsibilities and ignoring them. If these theoretical custodians were to permit a madman to enter, build a bonfire and throw in at random any volume he selected, one might with justification suggest that others be found, or at least that they be censored and told to be more careful in the future. So it is with mankind. Like it or not, we are our brothers' keepers, and we are also keepers of the rest of the house. (U.S. Congress 1973, 4–5)

Species conservation was already a difficult challenge in 1973. The human population of the United States had increased from less than 4 million in the first census of 1790 to roughly 212 million by 1973 (Census Bureau 2000). This increase was accompanied by even more dramatic increases in per capita consumption of resources. The combination of population growth and increased consumption has driven a precipitous loss of nonhuman species that continues today: more than five hundred species formerly found in the United

States are presumed to be extinct and an additional 47 percent of the species unique to this country are at risk (Master et al. 2000).

It has been thirty years since the ESA was signed into law on December 28, 1973, and the task of conserving at-risk species is more complex than ever. Societal pressures on wildlife habitat have increased. The U.S. population has increased nearly 40 percent since 1973 to 293 million (Doremus, this volume), and our gross domestic product is nearly eight times greater (Census Bureau 2004a). These increases have resulted in additional habitat loss and increased numbers of invasive, nonnative species, the two biggest threats to endangered species (Wilcove et al. 1998; Wilcove et al. 2000; Cox 1999).

The thirty years have produced a record that allows a preliminary evaluation of the extent to which the act's goals have been achieved. This book begins with an examination of what the Endangered Species Act has protected, focusing on species listed as either threatened or endangered. The second part, "Achieving On-the-Ground Conservation," examines the act's record viewed through the lenses of different land use systems and institutional actors. The third part, "Prospects," offers several perspectives on how the ESA could be strengthened while reducing its negative social impact.

First, however, we briefly review the evolution of at-risk species conservation and the legal requirements of the ESA.

The Evolution of the Conservation of At-Risk Species

The Endangered Species Act stands at the confluence of two strands of wildlife protection law. The first is nearly a millennium of common and statutory law intended to conserve game species. This is the traditional "hook-and-bullet" wildlife management that relies on take restrictions, such as closed seasons and bag limits, to maintain huntable populations of game species (Goble and Freyfogle 2002; Bean and Rowland 1997). The second strand of law—habitat protection—is equally ancient. Both the king in Parliament and colonial American legislatures routinely restricted land uses to conserve wildlife habitat (Goble and Freyfogle 2002). Although the tools—take restrictions and habitat protection—are ancient, the act's objectives are not. Indeed, the idea that it is important to save all the pieces is, in the sweep of things, a new perspective—and one that remains intensely contested.

From Game Protection to Endangered Species Preservation

Although legal protection of wildlife in the United States dates back to the colonial period (Goble and Freyfogle 2002), the post-Civil War period—with the near-extirmination of the American buffalo (*Bison bison*) and the looming extinc-

tion of the passenger pigeon (*Ectopistes migratorius*)—produced a new urgency (Hornaday 1889). The massive, often-wasteful slaughter of wildlife that characterized the end of the nineteenth century produced a coalition of scientists, Audubon societies, and hunters that sought to conserve wildlife by closing down markets (Barrow 1998; Dorsey 1998; Doughty 1975; Dunlap 1988). Congress responded by enacting the Lacey Act, the first federal wildlife protection statute, in 1900 (Act of May 25, 1900). When that proved insufficient, the federal government negotiated a treaty with Great Britain (acting for Canada) to protect migratory birds (Dorsey 1998). Congress ratified the treaty (Convention with Great Britain for the Protection of Migratory Birds 1916) and enacted the Migratory Bird Treaty Act (Act of July 3, 1918), imposing a federal regulatory scheme for hunting migratory birds, and the Migratory Bird Conservation Act (Act of February 18, 1929), authorizing the creation of a refuge system for migratory birds. Apart from migratory birds—and a 1940 statute nominally protecting the bald eagle (*Haliaeetus leucocephalus*) (Act of June 8, 1940)—the federal government remained largely uninvolved in wildlife conservation; the wildlife management system created during the Progressive Era lasted until the 1960s.

This wildlife management system was focused primarily on game species. There was, however, some recognition that species threatened with extinction also required special management. In 1936, Aldo Leopold—as always, at least a step ahead—published a short article entitled “Threatened Species” in which he argued that preservation of species such as the grizzly bear (*Ursus arctos horribilis*) and the ivory-billed woodpecker (*Campephilus principalis*) was “a prime duty of the conservation movement” (Leopold 1936, 230). In 1937, the Bureau of Biological Survey—enjoying a brief golden age of funding under the leadership of J. N. “Ding” Darling—acquired the Aransas National Wildlife Refuge in Texas to protect the wintering grounds of the critically imperiled whooping crane (*Grus americana*) (Allen 1952; McNulty 1966). And in 1942, a committee drawn from the U.S. Fish and Wildlife Service (USFWS) and the National Park Service produced a book entitled *Fading Trails: The Story of Endangered American Wildlife*. The book was written

to show how certain forms of wildlife have approached the brink of extinction. . . . It attempts to explain the poor economy of allowing any wildlife species to pass completely from being, if it is possible for such disaster to be averted. All forms of animal life, whether they be game species, fur bearers, predators, or what, are valuable in nature’s enduring battle for perfection. Each form of life does its bit to help maintain the elusive “balance” between all living things. (Beard et al. 1942, ix)

A gangly looking but graceful bird emerged as a potent symbol of a species on the brink. The whooping crane had been in trouble since the end of the

nineteenth century as a result of agriculture, drainage, settlement, and hunting; by 1912 its population numbered fewer than ninety birds; ten years later it was less than half that number; by 1938, when the Aransas Refuge was established, there were fewer than twenty remaining (Allen 1952, 80; Lewis 1995). Only then did the whooping crane's perilous situation catch the attention of the public, symbolizing what America stood to lose by ignoring the growing numbers of endangered native species. By the middle of the 1950s, the USFWS was holding press conferences and newspapers were reporting the annual count of whooping cranes (McNulty 1966), which gradually rebounded to 325 birds in the summer of 2005 (Tom Stehn, USFWS whooping crane coordinator, pers. comm.). The cranes contributed to the broadly based environmental consciousness that was beginning to stir in the United States.

Two decades after the publication of *Fading Trails*, the Department of the Interior created the Committee on Rare and Endangered Wildlife Species (Yaffe 1982). Two years later in 1966, the committee published a preliminary list of 331 species divided into three categories of concern: 130 species considered either rare or endangered; 74 species at the edge of their range (and therefore at risk); and 127 species of "undetermined" status (Committee on Rare and Endangered Wildlife Species 1966). This list, known as the Redbook, lacked any legal force; indeed, it contained one species, the Utah prairie dog (*Cynomys parvidens*), that another federal agency was trying to eradicate. The Redbook did, however, increase awareness of the risk of extinction.

The first legislative response to increasing public concern for endangered wildlife came in 1963. Acknowledging that habitat loss was a significant cause of extinction, Congress included a provision in the Land and Water Conservation Fund Act (Act of May 28, 1963) allowing monies to be used in "the acquisition of land, waters, or interests in land or waters . . . [f]or any national area which may be authorized for the preservation of species of fish or wildlife that are threatened with extinction" (Act of May 28, 1963, sec. 460l-9(a)(1)). This language embodied two fundamental changes that reflected the increased scientific and popular awareness of ecology: first, it provided for the *preservation* of wildlife rather than the *management* of game species and, second, it specified that protection was to be accomplished through *habitat preservation* rather than *take regulation*. Zoo specimens—like the Victorian curio cabinet—were no longer sufficient: wildlife was to be preserved in the wild.

The first federal endangered species act was the Endangered Species Preservation Act of 1966 (ESPA 1966). As with the Land and Water Conservation Fund, the ESPA focused on habitat protection. This focus on habitat, however, ignored the impact of taking and commercial activities on wildlife populations. It also ignored the international aspect of extinction: the American market was often the cause of problems elsewhere in the world. The failure to

regulate these activities was partially remedied in 1969 when Congress extensively supplemented the ESPA and renamed the combined statute the Endangered Species Conservation Act (ESCA 1969). The ESCA provided a more comprehensive but still limited program that emphasized the regulation of interstate and foreign commerce in species listed by the secretary of the interior as endangered.

In the ESCA, Congress instructed the secretaries of the interior and state to call an international conference on protecting endangered species. The conference finally convened in Washington, D.C., in February 1973 and drafted the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES 1973), a multilateral treaty that was signed in March 1973. CITES established an international system of import and export permits that created a control structure to regulate international commerce in species designated for protection.

The enactment of the ESA reflected a broad consensus that existing federal law was inadequate to preserve at-risk species. In his 1972 environmental message, President Richard Nixon concluded that federal law “simply does not provide the kind of management tools needed to act early enough to save vanishing species” (Nixon 1972, 223–24); congressional leaders offered a similar analysis (Dingell 1973). The act was among the least controversial bills enacted by Congress in 1973: the bill was passed by the Senate 92–0; an even more stringent bill passed the House 390–12. Following a conference to resolve the differences, the Senate passed the bill without dissent on a voice vote and the House adopted it by an overwhelming 355–4 (Yaffee 1982).

The Endangered Species Acts

The central substantive and procedural requirements of the Endangered Species Act are set out in five sections:

- *Section 4* establishes procedures for listing species as either threatened or endangered, for designating critical habitat, and for preparing recovery plans for listed species.
- *Section 7* requires federal agencies that authorize, fund, or carry out an action—“federal action agencies”—to consult with the U.S. Fish and Wildlife Service in the Department of the Interior or with the National Marine Fisheries Service in the Department of Commerce—the “federal fish and wildlife agencies”—to “insure that actions authorized, funded or carried out by them do not jeopardize the continued existence” of listed species.
- *Section 9* prohibits any person from taking or engaging in commerce in endangered species.

- *Section 10* provides exemptions, permits, and exceptions to section 9's prohibitions.
- *Section 11* specifies the civil and criminal penalties applicable to the violations enumerated in section 9.

As this outline suggests, the ESA envisions a linear process: when a species is at risk of extinction, it is listed as either endangered or threatened and its critical habitat is designated. The USFWS prepares a recovery plan for the species that specifies how the threats to its continued existence will be removed or mitigated so that the species no longer requires protection under the act. In the interim, the species is protected under the provisions of sections 7 and 9 from all activities not exempted or permitted pursuant to sections 10 and 11.

The act also includes a “cooperative federalism” provision in section 6(c) that authorizes the secretary to enter into a cooperative agreement with any state that established “an adequate and active program for the conservation of” listed species that is “in accordance with” the act and a list of criteria (ESA sec. 6(c)). Despite the breadth of the provision, it has had little impact on the evolution of the protection at-risk species. In part, this reflects state reticence, since most species that reach the point of being listed have been subject to long periods of state management. In part, it also reflects the continuous underfunding of conservation in this country.

The ESA in its first incarnation embodied “prohibitive policy”—in Steve Yaffee’s apt phrase (Yaffee 1982). For instance, in *Tennessee Valley Authority v. Hill* (1978, 74), the Supreme Court noted that the prohibitions on jeopardizing a listed species “admit to no exception”; the Court could have written the same phrase about the prohibition against “take,” which was defined far more expansively than “kill” (ESA sec. 3(18)). While people continue to speak of the “Endangered Species Act of 1973,” the current version of the act is markedly different than the original. It is useful to think of these changes as embodying four ESAs—the original 1973 version, the ESA that emerged from the 1978 and 1979 amendments, the ESA of the 1982 amendments, and the fourth version, the product of the administrative amendments of the 1990s. This combination of legislative and administrative amendments has transformed the act from a prohibitive law into a flexible, permitting statute (Houck 1993; Fischman and Hall-Rivera 2002; Greenwald et al., this volume; Suckling and Taylor, this volume), as demonstrated by the following three examples.

In 1978, the Supreme Court’s decision *Tennessee Valley Authority v. Hill* made the snail darter (*Percina tanasi*) a national symbol that was assigned diametrically different meanings by different groups. Congress responded to the ensuing controversy by amending the ESA. While leaving the act’s substantive

standards generally intact, Congress significantly modified its procedures to increase its flexibility. “No,” in another words, became “maybe.”

The 1978 amendments to the listing process clearly show the act’s transformation from prohibitive to permissive. Congress amended—or, perhaps more accurately, burdened—the listing process by substantially expanding the procedural requirements to list a species: it imposed additional notice provisions, required local hearings, and mandated the designation of critical habitat as part of the listing determination. While increasing the complexity of the listing procedures, the amendments also placed a two-year time limit on the process: listings that had not been completed within two years were to be withdrawn. The effect of these legislative changes was dramatic: less than 5 percent of the more than two thousand species that had been formally proposed for listing in November 1978 were listed; and on December 10, 1979, the USFWS withdrew proposals to list 1,876 species (USFWS 1979).

In the 1978 amendments, Congress focused on procedure: what had been a relatively simple statute became procedurally complex. Much of an administrative lawyer’s craft is focused on procedure because an agency is far more likely to err procedurally than substantively. Procedure, in other words, empowers those opposed to an agency’s decisions. By modifying the procedures, Congress was able to restructure the act without changing its substantive standards. In the process, the statute’s original prohibitive severity was substantially softened.

The second example is drawn from the amendments of 1982. If the theme of the 1978 and 1979 amendments was “flexibility,” the dominant concern in 1982 was “discretion.” Congress again tinkered with the listing procedures. When James Watt became secretary of the interior in 1981, listing virtually ceased after the Reagan administration added a requirement that listings be economically justified (Executive Order 12291 1981; Greenwald et al., this volume). Congress responded by restricting the secretary’s discretion, specifying that the listing determination was to be made “*solely* on the basis of the best scientific and commercial data available”; economics were not to be considered in determining whether a species was threatened or endangered.

But the most significant amendments in 1982 were to section 10. Before 1982, the ESA’s take prohibition (in section 9) applied to all “persons”—a term defined broadly to include not only individuals but also all business organizations and agencies of the federal and state governments (ESA sec. 3(8)). As a result, prohibited takes could occur both within the context of an agency action subject to consultation under section 7 (which includes “private” actions that require a federal permit) and on private lands whose owner had no need of a federal permit and who thus was not required to consult. In 1982, however,

Congress amended the act to permit “incidental” takes in both situations. For actions requiring consultation under section 7—actions that have some federal involvement, such as the issuance of a permit—Congress added a provision authorizing the wildlife agency to include an “incidental take statement” permitting take as long as it would not jeopardize the continued existence of the species (ESA sec. 7(b)(4)). And, to “addres[s] the concerns of private landowners who are faced with having otherwise lawful actions not requiring Federal permits prevented by section 9 prohibitions against taking,” Congress adopted an “incidental take permit” under section 10 (U.S. Congress 1982a, 29). It authorized the issuance of the permits in conjunction with the development of a “conservation plan” prepared by the applicant (ESA sec. 10(a)(2)(A)); the secretary was required to find that the take incidental to the plan would not “appreciably reduce the likelihood of the survival and recovery of the species in the wild” (ESA sec. 10(a)(2)(B)).

The third example comes from the chaotic nineties. Much of the transformation of the ESA from prohibitive to permitting is a result of administrative rather than legislative actions. Following Republican congressional victories in 1994, ideologically divisive politics increased debate on the ESA. In response to the hostility to endangered species that was openly expressed by some members of Congress and to several bills that would have fundamentally reduced protection for at-risk species (Goble, forthcoming), Secretary of the Interior Bruce Babbitt “resolve[d] to save the Endangered Species Act by implementing a series of reforms on the implementation of the Act from top to bottom, particularly as it applied to private lands” (Barry 1998, 131). To achieve this objective, the secretary advocated “incentive-based strategies to try and reconcile endangered species conservation with economic development” (Barry 1998, 131). The centerpiece of this incentive-based initiative was a series of permits—habitat conservation plans (HCPs) (USFWS and NOAA 1996), candidate conservation agreements (CCAs) (USFWS and NOAA 1999), and safe harbor agreements (SHAs) (USFWS 1999a)—that were available to private landowners and included assurances from the USFWS and the National Marine Fisheries Service that the agencies would impose no additional restrictions on land uses—the “no surprises” policy (USFWS and NOAA 1998; *Spirit of the Sage Council v. Norton* 2003). Although details of the agreements varied, the agreements and assurances were intended to make the ESA more developer friendly by balancing two competing goals: flexibility (to adapt to changing biological circumstances and new information) and certainty (to allow the permittee to make economic decisions) (Thompson, this volume).

The combination of legislative amendments and administrative revisions has produced a dramatically different ESA than that of thirty years ago. The absolute take prohibition of the 1973 statute has been conditioned by the flex-

ible incidental take permit that—in J. B. Ruhl’s phrase—authorizes a landowner to kill endangered species, legally (Ruhl 1999).

Proponents have justified each successive revision of the act by citing its increased efficiency. The first part of this book examines the statistical record behind these claims.

What Have We Protected?

The ESA’s linear process begins with the listing of a species at risk of extinction as either endangered or threatened. Listing triggers the act’s safeguards, the taking prohibition, and the consultation requirements. What has been listed?

The original list of endangered species named only 78 species (Wilcove and McMillan, this volume), all vertebrates. Thirty years later, the list has increased more than sixteenfold to 1,260 domestic species (USFWS 2003a), including 516 animals (179 of which are invertebrates) and 744 plants (USFWS 2003a). Even so, the list is still not representative of the taxonomic diversity of the country (Kareiva et al., this volume; Scott, Goble, et al., this volume) nor of the diversity of at-risk species (Master et al. 2000). For example, as Armsworth and his colleagues (this volume) note, relatively few marine species have been listed (70 of 1,855 taxa worldwide) despite severe population reductions for many. Greenwald and his coauthors provide a detailed history of the listing program.

Listing is only the beginning of the process; recovery—“conserving” a species so that “the measures provided by this Act are no longer necessary” (ESA sec. 3(3))—is the goal. One of the recurring criticisms of the Endangered Species Act is that it has failed to adequately recover species (National Wilderness Institute 1994). To date, only thirty-six U.S. species have been delisted, and only thirteen due to recovery; the USFWS recently proposed delisting eastern populations of gray wolves (*Canis lupus*) (Scott, Goble, et al., this volume). Another twenty-one species have been reclassified from endangered to threatened (Scott, Goble, et al., this volume).

There are questions, however, of whether recovery is the proper measure of success (avoiding extinction is an apparent alternative) (Schwartz 1999), whether three decades has been sufficient time to recover species that have been declining for decades or centuries (Doremus, this volume), and whether recovery is even possible for some species (Doremus and Pagel 2001). It is also apparent that some risks (such as overharvest) are more remediable than others (such as habitat loss or invasive species) (Scott, Goble, et al., this volume). Wilcove and McMillan (this volume) put a more specific face on these questions with their examination of the fates of the members of the first endangered species list. Of the seventy-eight species in the “Class of ’67,” two have recovered, one population of a third species has been delisted, four have been reclassified from

endangered to threatened, three are extinct and were removed from the list, and, with the recent sighting of the ivory-billed woodpecker (*Campephilus principalis*) (Gallagher 2005), eight others are presumed extinct but remain on the list. These statistics do not bode well for the current list of species.

DeShazo and Freeman provide different perspective on recovery; based on their research they conclude that extinction may turn more on the preferences of members of Congress than on the statute's criteria.

On-the-Ground Conservation

A second metric for evaluating the Endangered Species Act is its on-the-ground outcomes: Does the ESA work in a variety of landscapes? How well does it bring together the various potential actors, such as states, local governments, tribes, private landowners, and nongovernmental organizations?

Again, the data are mixed. Several authors suggest that we are not taking advantage of conservation tools now available. Suckling and Taylor, for example, see a positive correlation between designating critical habitat and a species status. Davison and his colleagues argue that the national wildlife refuge system could play a larger role in the conservation of at-risk species. Thompson and Tarlock examine the use of HCPs, the former on working landscapes and the latter on urbanizing landscapes. Finally, Swain—who directs both the Archbold Biological Station and the MacArthur Agro-ecology Research Center in Florida and its associated orchards and grazing lands—provides a reality check that comes from having worked with a number of regulatory tools. Three common themes emerge from these diverse perspectives. First, we have failed to develop tools that are useful to many different types of land users; for example, while HCPs work well for land developers, they are of little use to ranchers. Second, the assumptions built into the different tools are largely untested; we simply do not know if they are really accomplishing what is intended. Finally, the tools are too complex and time consuming to implement.

On-the-ground conservation involves not only tools but also actors. The authors of these chapters are generally hopeful. Niles and Korth summarize state wildlife conservation programs; Behan reports on the Sonoran Desert Conservation Plan developed by Pima County, Arizona, to create ecologically based land use planning; Rodgers discusses three Indian tribes that have played dynamic roles in conserving at-risk species; Kareiva and his colleagues suggest that nongovernmental organizations can potentially play a significant role. These authors paint a picture of a growing constituency for at-risk species in the states and counties—where the decisions are made about land use practices.

Prospects

It is clear that the thirty years since the passage of the Endangered Species Act have changed the way we think about and manage wildlife. Where once the focus was on single species of recreational or commercial value, today management is concerned with the full range of species. States have written endangered species laws reflecting these new interests and responsibilities (Goble et al. 1999; Center for Wildlife Law and Defenders of Wildlife 1996, 1998). At the same time, however, the act continues to be a lightning rod—particularly for those opposed to restrictions on the use of land.

The authors in the final part are in broad agreement on at least two points—the act is successful in preventing extinctions, but it could be made more efficient. Doremus introduces these recurrent themes, providing a concise overview of several of the key lessons from the history of implementing the act, focusing on the interface of law and biology; her conclusions counsel against simplistic approaches, noting for example the complex relationship between flexibility and accountability. Rosenzweig also urges the reader to look beyond the current reserve-based strategies for species conservation. Noting that reserves can slow but not prevent the loss of species, he argues that we must better reconcile human activities with native species through more deliberate planning and management. This will require a change in popular beliefs and attitudes toward nature. Yaffee believes that the ESA has broadly changed natural resource decision making by creating new processes, influencing existing processes, and changing the dynamics of negotiations by empowering new participants. He concludes with an analysis of several collaborative approaches that he finds encouraging. The chapters by Clark and Wallace and by Burnham and his colleagues from the Peregrine Fund also advocate increased collaboration, although they differ on the details. Clark and Wallace draw upon several case studies to support their proposal for the use of an adaptive management approach that relies on iterative, practice-based, and structured decision making. Burnham and his colleagues also reflect a hands-on perspective to species recovery. They offer perhaps the most radical restructuring proposal, arguing that stakeholder groups should be the primary recovery managers.

One recurrent debate is over the relative merits of incentives versus command. Parkhurst and Shogren provide a catalogue of incentives and a discussion of their strengths and weaknesses. Bean, who favors an incentive-based approach, argues that we must find simpler and more expeditious agreements if “second-generation” tools such as habitat conservation plans, candidate conservation agreements, and safe harbor agreements are to fulfill their potential. Shaffer and his colleagues also focus on next-generation options beyond the current ESA. They outline the scientific, political, and economic lessons to be

learned from the ESA implementation record and conclude that the necessary degree of habitat conservation cannot be achieved through regulation alone. Instead, they propose a proactive, state-based incentive policy that could be incorporated into comprehensive state wildlife conservation plans currently being developed.

Some Preliminary Conclusions

For over three decades the Endangered Species Act has transformed the conservation of nature in America, preventing the extinction of hundreds of species and directly or indirectly protecting millions of acres of terrestrial and aquatic ecosystems. At the same time, the ESA has imposed high costs and forced marked changes in the design and practice of economic activities such as housing, transportation, farming, ranching, logging, and fishing. Not surprisingly, debate over the efficacy of the law remains polarized, with environmental groups touting its successes and industry and property rights groups emphasizing its costs. The authors in this volume provide a more measured analysis of “the Endangered Species Act at thirty.” A surprising degree of consensus emerges from their chapters, although contentious issues remain. There are three pervasive themes: the role of the federal government, the emergence of new actors and institutional relationships responding to the challenges of ESA and reshaping conservation of the American landscape, and the limits of the ESA as a biodiversity conservation policy.

Despite many conservation successes, the federal government is not meeting the intent of the ESA. To do so would take significantly increased federal funding along with some limited administrative and perhaps regulatory reforms. If increased funds are not forthcoming, the act could still be operated more effectively with expedited listing procedures, clearer guidelines and priority setting for species recovery, greater consultation and coordination with state and local agencies, and more attractive incentive programs for private landowners.

The political geography of conservation under the ESA continues to evolve. The act has exposed gaps and shortcomings in state conservation laws and practices, and in doing so it has catalyzed reforms at all levels of government. The act has also affected the daily lives and livelihoods of many private landowners; in response, property rights groups have organized effectively to limit the reach of the act. Nonetheless, new political relationships and processes have emerged in many areas of the country in response to the challenges posed by the ESA. These relationships and the new planning processes they have created are producing viable local and regional conservation solutions.

The act has done some things very well. Most notably, it has reduced extinc-

tions substantially (Scott, Goble, et al., this volume). But the ESA is an at-risk *species* act—it is not a comprehensive *biodiversity preservation* act. It is also a statute from the 1970s with that decade's emphasis on command and control. Although the act has been amended to provide limited incentives—primarily through limiting its take prohibition—it has not been brought forward into the twenty-first century. One of the surprising areas of consensus at the discussions in Santa Barbara was not only the need to do so but also the need to maintain powerful restrictions on actions that put species at risk.

Ultimately, however, the ESA is a tool of last resort that can slow but not prevent the accelerating loss of biodiversity from the American landscape. Simply put, it comes into play too late. To prevent species from becoming endangered and thereby conserve our nation's biological infrastructure, we must look beyond the ESA and craft ways to accommodate more native species in the areas where we live, work, and recreate.