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THE NEED FOR AN ECOSYSTEM APPROACH FOR ENDANGERED SPECIES PROTECTION

Mike Bader*

I. INTRODUCTION

The Endangered Species Act¹ (ESA) is perhaps the most controversial of the environmental protection laws enacted by Congress during the 1970's. It endures despite ferocious attempts to de-claw the Act. Despite restrictions the ESA imposes on federal agencies, broad judicial interpretations of ESA requirements, and a fearsome reputation among industry executives, the ESA has failed to stem the tide of species extinctions and the collapse of native ecosystems in the United States. Even popular species have failed to prosper under the Act's protections. Certain species are arguably in worse shape now than when listed more than fifteen years ago.

This Article examines the ESA's shortcomings. It concludes that a substantive ecosystem management approach is needed for successful multiple species protection and suggests possible amendments to the ESA embracing ecosystem protection.

II. ESA IMPLEMENTATION LACKING

The ESA remains an enduring giant among U.S. environmental laws. It has been described as "far-reaching and comprehensive,"² as well as "an inhumane form of governmental regulation."³ Not only does the ESA provide severe penalties against the killing or "taking" of individual members of a listed species,⁴ but it also prohibits injury to entire populations caused by habitat modification and destruction⁵ or inappropriate management.⁶ The Act arguably protects large ecosystems of wildland habitat.⁷

Moreover, a series of judicial opinions have found the Act's require-

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1. 16 U.S.C. §§ 1531-1443 (1988).

2. J. Kilbourne, *The Endangered Species Act Under the Microscope: A Closeup Look From A Litigator's Perspective*, 21 ENVTL. L. 3 (1991).

3. Senator Slade Gorton (R-WA), address at the 82nd Pacific Logging Congress, reported in *LOGGER'S WORLD*, 81 (Dec. 1991).

4. 16 U.S.C. § 1540(a)(1) (1991). The fine for killing an endangered species can range up to \$50,000 or one year in jail or both.

5. *Palila v. Hawaii Dep't of Land & Nat. Resources*, 471 F. Supp. 985, 988 (D. Haw. 1979), *aff'd*, 639 F. 2d 495 (9th Cir. 1981).

6. *The Fund for Animals, Inc. v. John Turner*, No. 91-2201 (MB), 1991 WL 206232 (D.D.C. Sept. 27, 1991). Preliminary injunction issued prohibiting special hunting season on grizzly bears in Montana.

7. 16 U.S.C. § 1531(b) (1988).

ments to be unambiguous and restrictive of agency discretion.⁸ Concerted efforts by powerful constituencies⁹ designed to seriously weaken the ESA have largely failed.

One must ask why, after nearly 20 years of ESA regulation, bolstered by the courts and Congress, are hundreds of species in the United States still skidding toward extinction?

1) The drafters of the bill did not foresee the catastrophic impact that human civilization has on native species and on the ecosystems of which they are a part nor did they conceive that these pressures would increase as rapidly as they have.¹⁰ Consequently, the ESA, resting on an individual species approach, simply cannot protect all the threatened and endangered life the ESA was designed to save. There are currently 639 species formally listed under the ESA and another 1,784 candidate species awaiting listing actions.¹¹ The Fish and Wildlife Service (FWS) has acknowledged to Congress that there are more than 900 species in the United States "which the Service believes warrant listing as threatened or endangered."¹² In the same document the FWS identified an additional 2,900 species in the United States that "may warrant listing." The FWS has concluded that, at its own projected pace, the "listing [of all species that are in fact endangered or threatened] could require 30-40 years."¹³ The FWS listing process suffers from a bureaucratic snarl it cannot keep up with considering its paltry \$39 million annual endangered species budget.¹⁴ This has a cost in lives. It has been estimated by some that nearly 300 species have gone extinct while awaiting listing actions by the FWS.¹⁵

2) Federal agencies bound to adherence to the ESA have deliberately thwarted ESA implementation. Non-implementation of wildlife protec-

8. *TVA v. Hill*, 437 U.S. 153 (1978); *Seattle Audubon Society v. Evans*, 965 F.2d 776 (1992); *Bob Marshall Alliance v. Watt*, 685 F. Supp. 1514 (1986).

9. During the 1991 session of Congress, Oregon Senator Bob Packwood attempted to weaken the ESA. His proposed legislation was defeated by a 2 to 1 margin in the Senate. The Senate Majority Leader George Mitchell, a former federal judge, spearheaded the defeat.

10. Only in the past decade have organizations such as the Society for Conservation Biology formed. Their journal publishes research findings about the extent of impacts human civilization has upon natural processes and biological formations. See Dr. Reed Noss, *Sustainability and Wilderness*, 5 CONSERVATION BIOLOGY 120-122 (1990).

11. *Wildlife & Fisheries, Endangered and Threatened Wildlife*, 50 C.F.R. §§ 17.11-17.12 (1991).

12. U.S. Fish & Wildlife Service, *Federal and State Endangered Species Expenditures. Fiscal Year 1990* (Jan. 1991).

13. U.S. Fish & Wildlife Service, *Response to House Budget Inquiries* (1990).

14. J. Mathews, *It's Not Jobs vs. Endangered Species*, WASH. POST, Jan. 26, 1992. The \$39 million 1992 budget is the largest ever.

15. K. Hammer, Interior Secretary Manuel Lujan & U.S. Fish and Wildlife Service, *The Road to Extinction. A Gigantic Backlog of Species in Need of Protection* (Swan View Coalition publication, Kalispell, MT. June 1990).

tion laws is common; one of the most widely publicized examples was detailed in the text of District Judge William Dwyer's historic decision in *Seattle Audubon Society v. Evans*:¹⁶

The records of this case and of Northern Spotted Owl v. Lujan: (the lawsuit filed against the U.S. Fish and Wildlife Service, challenging its refusal to list the owl as a threatened species) show a remarkable series of violations of the environmental laws.

. . . The FWS, in the meantime, acted contrary to law in refusing to list the spotted owl as endangered or threatened. After it finally listed the species as "threatened," following Judge Zilly's order, the FWS again violated the ESA by failing to designate critical habitat as required.

. . . More is involved here than a simple failure by an agency to comply with its governing statute. The most recent violation of NFMA exemplifies a deliberate and systematic refusal by the Forest Service and the FWS to comply with the laws protecting wildlife. This is not the doing of the scientists, foresters, rangers, and others at the working levels of these agencies. It reflects decisions made by higher authorities in the executive branch of government.

III. THE GRIZZLY BEAR EXAMPLE

To determine the relative health of wildland ecosystems, biologists identify management indicator species, which are monitored for ecosystem trends such as species diversity and habitat quality. Indicators are often large, wide ranging vertebrates. The grizzly bear is the indicator species for many areas in the Northern Rockies. One of the best examples of political interference which hampers implementation of the ESA and recovery of listed species is found in the circumstances surrounding the grizzly bear in the Northern Rockies region of Montana, Idaho, Wyoming, and northeast Washington.

The grizzly was listed under the ESA as a threatened species in 1975. Management of grizzlies and their habitat has been highly controversial for decades, well before listing under the ESA.¹⁷ The level of political controversy concerning the management of the bear escalated as soon as it was listed. The grizzly is currently limited to less than 2 percent of its original range. It exists in less than one percent of its former numbers.¹⁸ The grizzly is a good example of the scale of habitat destruction that has

16. *Seattle Audubon Society v. Evans*, 965 F.2d 776 (1992).

17. F. CRAIGHEAD, *THE TRACK OF THE GRIZZLY* (1979).

18. U.S. Fish & Wildlife Service, *Grizzly Bear Recovery Plan* (Missoula, MT. 1992).

marked the past century. The destruction has not abated since the grizzly was listed in 1975.

IV. PLANNED FAILURE

A. *Failure to Designate Critical Habitat*

When the grizzly bear was listed, the U.S. Fish and Wildlife Service immediately received intense pressure from members of Congress in the affected states. It subsequently failed to designate critical habitat for the grizzly, opting instead for a three-tiered approach to habitat management.¹⁹ This zone system relies on three major categories of grizzly bear habitat. Situation One land is deemed to be absolutely critical to species survival. Situation Two lands are lands where conflicts between management actions & grizzly bear needs are generally to be resolved in favor of the grizzly bear. This does not always happen however. Situation Three lands are mostly developed areas inhabited by people and livestock. Problem bears on Situation Three lands are removed and relocated, or killed when conflicts arise.

In the seventeen years after the initial listing, political pressure on the Fish and Wildlife Service has not receded. Management guidelines for grizzly bears were adopted in the United States Forest Service National Forest Plans. These plans allow for extensive road building, logging, mining, oil and gas exploration, and other development activities within vast acreage of Situation One and Two habitat. The Fish and Wildlife Service approved these plans, even though they represented significant losses of habitat deemed critical to the survival of the grizzly bear. Critical habitat has never been designated.

B. *Decision-Making in a Vacuum: A Plethora of No Jeopardy Opinions*

In the absence of critical habitat designation, the consultation process (found in section 7 of the ESA) between the action agency and the U.S. Fish and Wildlife Service (FWS) has taken on added importance.²⁰ Unfortunately, the FWS has taken a piecemeal approach to encroachment on grizzly habitat. The massive amount of timber sales and road building activity in prime grizzly habitat is reviewed individually, in isolation from one another. When reviewed this way, each timber sale in and of itself cannot necessarily be proven to be detrimental to the grizzly, under section 9 of the ESA as a "taking." The FWS has issued hundreds of "no

19. U.S. Fish & Wildlife Service, *Grizzly Bear Recovery Plan* (Missoula, MT. 1992).

20. 16 U.S.C. § 1536(a)(2) (1988).

jeopardy"²¹ opinions on individual timber sales and other development actions in prime habitat. No decent assessment of cumulative effects has been undertaken. Consequently, the grizzly is being driven to extinction throughout much of its range.

For example, the Cabinet-Yaak Grizzly Bear Ecosystem in northwest Montana is an identified recovery area, yet less than 10 bears are thought to remain in this area²² and the FWS continues to issue "no jeopardy" decisions within the ecosystem. Through this same loophole, hundreds of thousands of acres of critical grizzly habitat have been developed and made much less habitable for grizzlies throughout the northern Rockies.

C. Failure to Manage for Viable Populations

A prime concern in the management and preservation of any species, particularly those threatened or endangered with extinction, is the concept of minimum viable population size (MVP). A MVP contains enough animals to be self-sustaining and shielded from genetic stress factors such as inbreeding and severe environmental fluctuations. The population is subject to minimal demographic or genetic intervention over time.²³ In an unwise venture of brinkmanship, the FWS has established MVPs as recovery targets sufficient to delist various populations of grizzly bears in the northern Rockies. The problem with intentionally managing an endangered species at minimum levels for survival is that the population is at permanent risk of falling into a catastrophic decline- a point of no return. As one observer has put it, "There is a fearful asymmetry in . . . (MVP) estimates. We lose nothing if the estimate is too high; we lose everything if it is too low."²⁴

The FWS, however, has set MVP levels for grizzly bears in the northern Rockies that are too low in light of recent research. In its draft Grizzly Bear Recovery Plan²⁵, the FWS declared the MVP for the Cabinet-Yaak and Selkirk recovery areas to be between seventy and ninety bears. However, recent research indicates that to maintain at least one grizzly bear population in the northern Rockies, a minimum of 2000 bears

21. A jeopardy opinion would mean that a proposed project's effects on a particular threatened or endangered species would jeopardize the continued existence of that species. Conversely, a no jeopardy opinion means it is the opinion of the Fish and Wildlife Service that no long-term harm to the threatened or endangered species would result from project implementation.

22. U.S. Fish & Wildlife Service, Draft *Grizzly Bear Recovery Plan* (1990).

23. K. Yagerman, *Protecting Critical Habitat Under the Federal Endangered Species Act*, 20 ENVTL. L. 4, 822 (1990).

24. F. BUNNELL, *A Conservation Strategy for Large Carnivores in Canada* 54 (Monte Hummel, ed., 1991).

25. U.S. Fish & Wildlife Service, Draft *Grizzly Bear Recovery Plan* (1990).

should be the recovery target.²⁶

Why would an agency composed of professional biologists such as the FWS present a plan that is surely doomed to failure? Industrial and political pressures on the agency are immense and similar to the pressures alleged by former U.S. Forest Service Region One Regional Forester John Mumma.²⁷ Smaller recovery targets mean less land area placed under the protections of the ESA. Grizzly bears are wide-ranging with huge living area requirements. For instance, the land area required for a minimum population of 2000 grizzly bears is in the neighborhood of 50,000 square miles.²⁸

Not only are the current FWS delineated recovery areas insufficient to perpetuate a population of grizzly bears (required by the ESA), they are not even protected from harmful development, as witnessed by the hundreds of no jeopardy opinions issued by FWS in critical habitat. Ironically, accompanying the FWS failure to identify critical habitat is a failure to have produced a final recovery plan seventeen years after the species was listed. An analysis of suitable habitat in grizzly bear ecosystems shows less than 50% of the areas are protected from harmful developments through protective designations such as wilderness, park or refuge.²⁹

V. THE NEED FOR AN ECOSYSTEM APPROACH TO ENDANGERED SPECIES PRESERVATION

It is clear that a species-by-species approach will not prevent extinctions on a large scale. Perhaps the only way to save a multitude of species simultaneously is through an ecosystem protection plan that protects habitats for many different species and entire ecological processes over a very large land area, covering perhaps even several states. This has been called for by many in the science community.³⁰ There are several benefits to such an approach:

26. F. Allendorf et al., *Estimation of Effective Population Size of Grizzly Bears by Computer Simulation*, Proceedings, 4th Int. Congress of Systematic and Evol. Biology. L. Metzgar and M. Bader, *Large Mammal Predators in the Northern Rockies: Grizzly Bears and Their Habitat*, 8 NORTHWEST ENV'T'L JOURN. (1992).

27. U.S. House of Representative Committee on Post Office and Civil Service, Civil Service Subcommittee. Testimony of John Mumma, September 24, 1991.

28. L. Metzgar & M. Bader, *Large Mammal Predators in the Northern Rockies: Grizzly Bears and Their Habitat*, 81 NORTHWEST ENV'T'L JOURN. (1992).

29. J. Dosckocil and M. Bader. Geographic analysis research. Unpublished data on file at office of Alliance for the Wild Rockies, Missoula, MT. (1991).

30. E. Grumbine, *Protecting Biological Diversity Through the Greater Ecosystem Concept*, 10 Natural Areas Journal 114-120 (1990). J. Craighead, et al. Letter signed by 13 scientists and conservationists to Rep. George Miller, Chairman, U.S. House of Representatives Committee on Interior and Insular Affairs. (Nov. 1990).

A. *Conservation of Biodiversity*

An ecosystem approach is the best way to protect entire groups of species while ensuring that the living requirements of wide-ranging, sensitive species are met. Wide-ranging mammals have large living areas and anadromous fish make journeys of up to 900 miles. Certain small mammals and insects spend their entire lives in one small place. Ecosystems are highly evolved, interdependent networks of life. A holistic view is required before we can even begin to understand an ecosystem's complexity.

Research focusing on islands and isolated national parks has found that the larger an area, the larger the number of species that survive. By using an ecosystem approach based on "umbrella" species, animals that have the most stringent habitat requirements, a host of species are protected under the umbrella. While certainly not perfect, it is preferable to the current approach, which has led to critical losses of biodiversity.

B. *Fewer Individual Species Recovery Plans*

In many areas of the United States' public lands, particularly the Northern Rockies and the Cascade region of Washington, Oregon, and northern California, numerous threatened and endangered species depend primarily on public lands for their habitat. Preparation of recovery plans for each individual species is very time consuming and costly. Since FWS staff and funds are short, this method has not necessarily benefitted the listed species. It also creates added controversy when one ugly battle is quickly followed by another. On the other hand, ecosystem recovery plans can be drawn up which would protect several species at once, as well as entire ecological processes. Reduced versions of individual species recovery plans could still be prepared, but only as a tier to the ecosystem plan. While ecosystem plans would necessarily be more complex and time-consuming than the current plans, much less time and fewer resources would be used in the long term, making this approach cost-effective at a time of declining availability of federal funds.

C. *The Burden Is Shared by Several Laws*

Another benefit of an ecosystem approach is that the ESA does not necessarily have to be the sole vehicle through which species extinctions are prevented. Robert Keiter has persuasively suggested that ecosystem protection can be accomplished by using several of the U.S. environmental protection laws in concert.³¹ He explains that most of the major environ-

31. Robert Keiter, *Taking Account of the Ecosystem on the Public Domain: Law and Ecology in the Greater Yellowstone Region*, 60 U. COLO. L. REV. 4 (1989).

mental laws contain some provision for protection of ecosystems or biological diversity and used together, can effect ecosystem protection.

The science community can do much to further the ecosystem protection effort. Under the ESA, science is to be the sole consideration of the FWS. The concept of indicator, or "umbrella" species states that if you manage habitat to protect the species with the most stringent living requirements, then a whole host of species' habitats will also be protected under the umbrella. Oftentimes, umbrella species are also "flagship" species which are popular, and therefore more likely to receive the public and political support necessary to survive.

VI. DOES THE ESA PROTECT ECOSYSTEMS?

The ESA can provide legal protection for ecosystems through the language in Section 1531(b), which explains that the ESA's purpose is "*to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved.*" Moreover, the legislative history of the Act suggests that Congress intended to make the ESA requirements mandatory for all agencies, even when dealing with large animals such as the grizzly bear, which requires large areas of land,³² and is a prime indicator of ecosystem health. However, for the reasons outlined above, ecosystems are not being protected, even when several threatened and endangered species listed under the ESA are present.

As a result, an entirely new Endangered Ecosystems Act has been proposed and a working draft patterned after the ESA has been circulated.³³ Still another strategy is to accomplish ecosystem protection through legislative designations of wilderness, park, or forest reserve. Recent examples include the Ancient Forest Protection Act,³⁴ and the proposed Northern Rockies Ecosystem Protection Act.³⁵ The Northern Rockies proposal follows many of the suggestions of Professor Keiter.

32. "Another example. . . [has] to do with the continental population of grizzly bears which may or may not be endangered, but which is surely threatened. . . Once this bill is enacted, the appropriate Secretary, whether of Interior, Agriculture or whatever, will have to take action to see that this situation is not permitted to worsen, and that these bears are not driven to extinction. The purposes of the bill included the conservation of the species and of the ecosystems upon which they depend, and every agency of the government is committed to see that those purposes are carried out. . . [T]he agencies of Government can no longer plead that they can do nothing about it. They can, and they must. The law is clear." 119 CONG. REC. 42913 (1973) (statement of Rep. John Dingell).

33. M. Liverman, *The Endangered Ecosystem Act*, 6th Draft. Audubon Society of Portland (1991).

34. H.R. 842, 102nd Congress., 1st Sess. (1992). This bill has received several hearings in the House but has not passed. It was sponsored by Rep. Jim Jontz (D-In.).

35. Associated Press story stating Rep. Peter Kostmayer (D-PA.) intends to introduce the bill. MISSOULIAN, Oct. 15, 1991. Press Release of Rep. Peter Kostmayer (D-PA.) Wash., DC. (June 1992).

VII. A PROTOTYPE ECOSYSTEM PROTECTION ACT

The Northern Rockies Ecosystem Protection Act covers the geographic range of several threatened and endangered species including the grizzly bear, gray wolf, woodland caribou, and sockeye salmon. Many of its provisions were authored by leading scientific researchers including Derek Craighead. This proposal deals with the most intact natural landscapes remaining in the forty-eight states. It also focuses on ecosystems which may have the best chance for preservation and restoration. In this way it can serve as a living laboratory and inspiration for a national program of ecosystem and endangered species protection. As one player has put it, "How are we going to have any chance to recreate ecosystems if we don't save the last ones we have left?"³⁶

Key components of this approach provide for ecosystem protection through existing land management designations such as wilderness, parks, and wild and scenic rivers. A new designation provides linkage corridors for wildlife migrations and genetic interchange between the core ecosystems. A pilot system of Wildland Recovery Areas designed to restore areas damaged by unwise extractive resource activity rounds out the bill. Finally, along with direction to the various federal agencies to cooperate in integrated, holistic ecosystem management practices, a section of the bill calls for implementation and monitoring of the act. This section could serve as the prototype for a long-term ecosystem approach to endangered ecosystem and species conservation.

Specifically, this part of the bill directs the Secretaries of Interior and Agriculture to form two panels: 1) a panel of independent scientists appointed by an objective non-governmental organization, such as the Society for Conservation Biology, to prepare a report on the implementation of the Act, detailing any additional work and funding requirements necessary to achieve the Act's purposes, and 2) an interagency monitoring team with an equal number of participants from the private sector to monitor, evaluate, and make adjustments to ensure that the long-term results proscribed by the Act actually occur. This team would develop a geographic information system based on satellite-derived data and would include development of comprehensive maps and databases for change detection. These would be updated periodically to record the following: vegetation cover, species occurrence and densities, human impacts, water and air quality, and forest husbandry and restoration. The geographic information system will also include status reports on the progress of ecosystem protection, corridor consolidation, and forest recovery efforts as

36. Jeff DeBonis, founder, Association of Forest Service Employees for Environmental Ethics. *EVOLUTIONS END?* (Bennu Video Productions 1990).

well as reports on the status of threatened and endangered species which are primary indicators of ecosystem health.

The Secretaries are also directed to create a governmental review board with equal numbers from the private sector to review the goals and mandates of all federal agencies with responsibilities of natural resource management, and prepare a report to Congress with recommendations to legally restate and unify the various agency resource management mandates. These recommendations would be guided by holistic and scientific methods of resource management.

Successes and failures in the Northern Rockies bioregion could guide an ecosystem-based endangered species policy nationwide.

VIII. A FEW SUGGESTED AMENDMENTS TO THE ESA

While the future may point to comprehensive and integrated holistic ecosystem management practices by the various federal agencies responsible for land management, the legislative success in Congress of progressive ecosystem-based initiatives is limited at best. Visionary proposals such as the Northern Rockies Ecosystem Protection Act and the Ancient Forest Protection Act have yet to pass the House of Representatives and the Senate. In the meantime, the best that endangered species advocates can hope for are continuing litigative success, coupled with holding the line against hostile attacks on the ESA. Industry analysts predict no major changes to the ESA due to the intense polarization surrounding the issue.³⁷ Regardless, conservation activists are seeking to strengthen amendments to the ESA. These include beefing up the Act's ecosystem protection guarantees. Another would be to allow for preparation of ecosystem recovery plans focusing on key indicator species of ecosystem health and stability, including increased accounting for the cumulative effects of habitat fragmentation. Also, imposing criminal penalties on agency officials and members of Congress who purposely thwart implementation of the Act might be effective. An obscure, yet potentially major amendment would be to create a nomination provision in the ESA for inclusion under the protections of the Multilateral Treaty for Protection of World Cultural and Natural Heritage.³⁸

37. John Hossack, spokesman, Communities for a Great Northwest, Address at the 6th Annual Wild Rockies Rendezvous, Missoula, MT. (Nov. 1991).

38. Multilateral Treaty for the Protection of World Cultural and Natural Heritage Nov. 23, 1972, art. 2 § 1, 27 U.S.T. 37-49. Under this treaty, ratified by then President Ford of the United States and the U.S. Senate, "natural features consisting of physical and biological formations or groups of such formations" and "precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation" are to be protected. The National Historic Preservation Act (1966) has a nomination provision.

IX. CONCLUSION

The Endangered Species Act is alive and well, but the species it is designed to protect are not, suffering as they are from dramatic losses of natural habitat. Preserving our rich heritage of native biodiversity will require bold initiatives which overcome powerful impediments. Time is short.

Creation of landscape scale reserve systems where the ecosystem is the smallest unit of land under consideration can relieve much of the bureaucratic pressures of the ESA, while protecting entire associations of species and ecological processes. Citizens have taken the first step through legislative proposals and litigation. Whether we enjoy a rich diversity of native species appears to depend on how quickly Congress and our land managers pick up the ecosystem ball.

