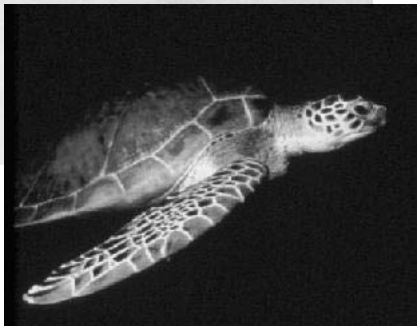
# Practical Solutions to Improve the Effectiveness of the Endangered Species Act for Wildlife Conservation





**THE WILDLIFE SOCIETY**
Technical Review 05-1
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# PRACTICAL SOLUTIONS TO IMPROVE THE EFFECTIVENESS OF THE ENDANGERED SPECIES ACT FOR WILDLIFE CONSERVATION

Submitted to:

The Wildlife Society

**Technical Review Committee on the Endangered Species Act**


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## Foreword

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## SYNOPSIS

This review draws on our nation's more than 30 years of experience with the current version of the Endangered Species Act (ESA) to identify problems limiting the successful implementation of the law with respect to listing, critical habitat designation, conservation on private lands, involvement of state fish and wildlife agencies, species recovery, interagency section 7 consultation, consideration of distinct population segments, and ensuring sound decisions. Nearly 60 funding, administrative, and legislative measures are provided to address these problems and improve the effectiveness of species conservation.

Identified potential administrative solutions include changes in guidance, policies, and regulations. These changes are ones that generally may be addressed most easily and inexpensively. Identified needs for increased funding are perhaps next most easily resolved by Congress and the Executive Branch. Finally, given that efforts to amend the ESA have been unsuccessful since 1988, identified legislative solutions are likely to be the most difficult to put into place and generally must be accompanied by both funding and adoption of administrative measures. Potential legislative solutions are provided only where they are essential to address high-priority issues of concern.

Legislative changes are provided as potential solutions to significant problems identified in designation of critical habitat, listing, and conservation efforts on private lands. Among the most prominent of these are potential legislative solutions to allow the federal agencies administering the ESA to reconcile listing and critical habitat designation duties with funds available to carry out all their obligations under the law and to move designation of critical habitat to the recovery planning process. On the other hand, fewer and less significant issues of concern are identified with respect to interagency section 7 consultations and ensuring sound decisions. In these cases, only administrative changes are recommended. Increased federal funding is identified as important to support most aspects of federal, state, and private landowner efforts to conserve imperiled species.

The relatively few identified legislative changes to the ESA reflect the committee's view that the ESA is a fundamentally sound and successful mechanism to prevent species extinctions and conserve biological diversity. Its effectiveness in recovering species has been constrained largely by funding levels that have not kept pace with increased demands and by larger sociocultural and socioeconomic issues that drive species loss.

## I. INTRODUCTION

When the Endangered Species Act (ESA) was enacted into law on 28 December 1973, there were 409 species listed as endangered under the precursors to that new law, and 132 were U.S. listed species. During the 32 years following enactment of this landmark legislation, many changes have occurred. The number of species listed as threatened or endangered increased >4-fold to 1,854, and the number of U.S. listed species now stands at 1,264. Spending levels authorized at $4,000,000 in 1974 for the U.S. Fish and Wildlife Service's (FWS) endangered species program grew to nearly $140,000,000 in 2004. Since 1973, the ESA was amended 7 times, and although it has not been reauthorized or amended since 1988, its implementation has continued to evolve actively, particularly in the area of conservation on private lands.

The ESA is a vital tool in this nation's efforts to conserve biological diversity. The law has been successful in achieving its primary goal of preventing species extinctions. Less than 1% of the more than 1,800 species protected by the ESA over the last 32 years have been declared extinct. Its effectiveness in recovering species has been constrained by funding levels that have not kept pace with increased demands and by larger sociocultural and socioeconomic issues that drive species loss. If the ESA is to remain effective, sufficient resources for its implementation need to be provided by the U.S. government. Funding-constraint solutions that seek to replace the firm duties and strong substantive standards imposed by the ESA to prevent species extinctions should be rejected. Constant vigilance is required to ensure that decisions under the law are based on sound scientific analysis. Within this framework, the ESA can and should be improved by adopting new approaches to conservation of imperiled species in policy, regulations, or law.

In response to the challenges and opportunities facing the ESA, The Wildlife Society (TWS) Council charged a Technical Review Committee to "identify problems limiting the successful implementation of the Endangered Species Act and recommend practical solutions for improving its effectiveness for wildlife conservation." Unlike other TWS technical reviews of scientific literature, this review was charged specifically with identifying policy problems and potential solutions for the following aspects of the ESA:

1. Listing
2. Critical habitat designation
3. Conservation on private lands
4. Involving state fish and wildlife agencies
5. Species recovery

6. Interagency section 7 consultation
7. Consideration of distinct population segments
8. Ensuring sound decisions

We identify issues of concern related to each of these subjects. Nearly 60 potential changes are recommended for consideration by Congress and the Executive Branch to address these issues of concern and improve conservation of threatened and endangered species under the ESA.

## II. LISTING

Listing includes adding species to the lists of threatened or endangered species, thereby invoking the provisions of the ESA. This includes the process of determining a species to be a candidate for listing, the process by which persons may petition to have a species added to the lists, and the rulemaking process by which listing determinations are made. This section also addresses issues related to the use of distinct vertebrate population segments (DPS) in listing determinations.

Species eligible for listing are any member of the plant or animal kingdom, including "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish and wildlife that interbreeds when mature." In deciding to provide for listing of subspecies and geographically discrete fish and wildlife populations, Congress chose to protect animals that are in trouble in part of their range, but healthy in other areas. Congress also instructed the FWS and NOAA-Fisheries (hereafter Services) to exercise this authority with regard to DPS "sparingly and only when the biological evidence indicates that such action is warranted" (Senate Report 151, 96th Congress, 1st Session). Of the 338 currently listed U.S. vertebrates, 30 species are listed as distinct population segments.

The regulations promulgated by the Services in 1996 seek to provide consistent interpretation of the DPS requirements. Recognition of a DPS is based on (1) discreteness of the population segment in relation to the remainder of the species to which it belongs; (2) significance of the population segment to the species to which it belongs; and (3) conservation status of the population segment in relation to the ESA's standards for listing (i.e., whether the population segment, when treated as if it were a species, is endangered or threatened).

The Services may add species to the lists on their own initiative. The FWS has a candidate-assessment program for this purpose and maintains a list of species that are candidates for listing (i.e., species for which they have sufficient information to support a proposal to list as threatened or endangered but for which preparation and publication of a proposal is precluded by higher-priority listing actions). The FWS list is published periodically in the form of a Candidate Notice of Review. The most recent Candidate Notice identified 279 species as candidates for addition to the lists of threatened or endangered species.

Listing is the mechanism by which the protection of the ESA is conveyed to species in need, but the resulting restrictions on take of listed species and the consultation and permitting requirements make it an inherently controversial part of the law. An effective moratorium on listing by the Executive Branch in the early 1980s resulted in Congress's amending the ESA in 1982 to impose mandatory listing duties and deadlines for action. Congress also reinforced the ESA to make clear that listing decisions are to be based solely on the best available scientific information.

A congressional moratorium on listing was imposed in the mid-1990s and resulted in a major loss of funding available to FWS to implement these statutory duties. It has always been difficult for the Executive Branch to request increased funding for listing in the face of other priorities and for Congress to provide increases in funding for this controversial activity.

The ESA gives any person authority to submit petitions to list animals or plants. The listing agencies must respond, to the maximum extent practicable, within 90 days with a finding as to whether there is substantial information indicating that listing *may* be warranted. A year after the petition is filed, the agencies must decide whether listing is not warranted, is warranted (in which case a proposed listing rule is initiated), or is warranted but precluded by other higher listing priorities.

Species are added to the lists through the rulemaking process governed by the Administrative Procedure Act, which includes provisions for public notice and comment. A final listing determination must be made within 12 months of a proposal to list (unless extended by up to 6 months in the case of substantial disagreement regarding the sufficiency or accuracy of available data).

It is important to recognize that state fish and wildlife agencies often have singular or shared regulatory and management authority for species before listing, and shared authority continues after listing (as executed through ESA section 6 Cooperative Agreements).

**Issues of Concern**

1. Insufficient funding has been provided over the past

decade for making petition findings, listing decisions, and critical habitat designations. As a result, the Services often have failed to meet ESA deadlines, which has led to litigation and court orders. Efforts to rely upon administrative priority systems for determining what listing actions to undertake with the available appropriated funds have all ultimately failed, as litigation was used to force other priorities, and the courts concluded that the duties and deadlines in the ESA were mandatory, regardless of whether adequate funding was available to carry them out. Accordingly, the FWS listing budget for fiscal years 2003, 2004, and 2005 has been almost entirely dedicated to compliance with court orders or settlement agreements to designate critical habitat for already listed species or act on petitions to list. Work priorities are forced through responding to litigation, not through consideration of relative biological benefit or need. The result has been a third effective listing moratorium, resulting from the lack of funding available to actually add species to the lists of threatened or endangered species.

2. There is insufficient support within Congress and the Administration for the increases in funding and personnel needed by the agencies to carry out their mandatory listing duties under the ESA.

3. While ESA decisions are based on the best available information, often the information on the status of species (i.e., population dynamics and habitat requirements) is quite limited. There is little information for many plant and animal species, particularly those that are not subject to regulated hunting, trapping, and fishing, not subject to commercial harvest, or those that are not observed easily. Results can include unwarranted listing petitions and delays in initiating the listing process for species truly in need.

4. The ESA does not require explicitly soliciting information held by states, sharing information with states, or involving states in listing and critical habitat designation decisions. While not required explicitly by the ESA, the Services have a policy to carry out this kind of coordination. In some instances, however, information from state wildlife agencies and other federal agencies may not be sufficiently sought, used, or considered in listing decisions.

5. Providing greater flexibility to not impose regulatory restrictions on adequately managed DPS or geographically discrete populations offers an underutilized opportunity to reward and encourage recovery management. In cases in which a species with ≥2 DPS or geographically discrete populations is being listed, only those with inadequate management should be listed. Once a species is listed, the opportunity exists to down-list or delist those DPS or geographically discrete populations for which there are adequate management programs in place, while retaining ESA protection for those DPS or geographically discrete populations for which threats have not been sufficiently addressed.

**Potential Solutions**

To improve conservation of species that warrant the conservation measures of the ESA, consideration should be given to 1 or more options.

Funding Options

1. Provide sufficient time and resources to investigate and prepare all the documentation associated with petition findings and other listing actions.

2. Increase the funds available for listing to a level that will allow the Services to comply with the ESA. We estimate that a listing appropriation of approximately $25,000,000/year in current dollars, and continuing adjustments for inflation, should allow the FWS to work through the backlog of overdue petitions, candidates, and critical habitat designations within 5 years, and then continue to fulfill its duties under section 4 of the ESA.

3. Dedicate funding for measurement and monitoring to better ascertain the status of species at risk (e.g., species on the federal candidate list, and those on each state's heritage program list of C1 and C2 species, sensitive species list or the equivalent).

4. Federal funding should be provided to the states to conduct monitoring and evaluation efforts.

Administrative Options

1. State fish and wildlife agencies should be more involved early and throughout the listing process, including in down-listing decisions. This involvement will facilitate states providing necessary information and help states formulate management decisions and communicate with the public. Similar efforts should be made with Native American tribes and federal land-management agencies.

2. Encourage the Services to work with interested state fish and wildlife agencies in development of a memorandum of agreement (MOA) under section 6 of the ESA to provide greater certainty and specificity with regard to coordination and collaboration on activities under section 4 of the ESA. The MOA between the FWS and the Arizona Game and Fish Department, entitled "State Wildlife Agency Participation in Implementing the Endangered Species Act: State of Arizona," may serve as a good template (which can be downloaded from http://www.fws.gov/arizonaes/Threatened.htm).

3. Encourage the Services to utilize state fish and wildlife agency and Native American tribal expertise in conducting population status inventories and geographic distribution surveys by contracting with the states or Native American tribes for data collection, review, and analyses.

4. Encourage the Services to reward adequate management and proactive restorative management by making greater use of DPS designations and flexibility in decisions to not list, down-list, or delist a DPS or geographically discrete populations receiving adequate management.

Legislative Options

1. Authorize the Services to reconcile the mandatory duties for petition findings, listing determinations, and critical habitat designations with the funds that Congress provides to carry out those duties. Specifically authorize the Secretaries to develop a biologically based system to prioritize the actions to be carried out each fiscal year with the funds made available. This proposal would allow Congress to retain the means to prevent an administrative listing moratorium, such as the one that occurred in the early 1980s, while allowing the Services to defend their workplans against litigation seeking to force a different set of priorities.

2. Conserve limited resources and improve the efficiency of the listing process by clarifying that the Services need not make findings on petitions to list species in those cases in which the Services already have found such species warrant a listing proposal and already have designated them as candidates for listing.

3. Categorically exempt state fish and wildlife agencies from Federal Advisory Committee Act (FACA) restrictions so that these agencies are able to participate as equal conservation partners, not as public stakeholders, in freely sharing information and contributing expertise to the listing process. This exemption would help ensure that the Services have the best available information; the states would not have to react to Service proposals at public hearings where it would be a greater advantage to have state and federal agencies in agreement about resources within their authorities; and the states could help their publics know the reasons and impacts of listing decisions.

## III. CRITICAL HABITAT DESIGNATION

The Services are required to designate "critical habitat" for species at the time of listing, "to the maximum extent prudent and determinable." If critical habitat is not determinable at the time of listing, the deadline for designation may be extended for up to 1 year.

Critical habitat is defined by section 3(5)(A) of the ESA as follows:

"The term 'critical habitat' for a threatened or endangered species means—

(i) the specific areas within the geographical areas occupied by the species, at the time it is listed in accordance with the provisions of section 4 of this Act, 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 protection; and

(ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with provisions of section 4 of this Act, upon a determination by the Secretary that such areas are essential for the conservation of the species."

Although decisions on whether to list species are shielded from economic considerations, the designation of critical habitat is not. Critical habitat designations must be based upon the best scientific data available and take into consideration the economic impact, the impact on national security, and any other relevant impact of specifying any particular area as critical habitat. Section 4(b)(2) of the ESA authorizes the Secretary of the Interior or Secretary of Commerce to exclude any area from critical habitat if the benefits of excluding the area outweigh the benefits of including the area in the designation.

Under the ESA, the only effect of designation of critical habitat is to add to the responsibilities of federal agencies under section 7(a)(2) the duty to ensure that activities they undertake, approve, or fund do not result in the destruction or adverse modification of that habitat. Consequently, activities on nonfederal lands within critical habitat are affected directly by the designation only to the extent that there is federal funding or approval of the activities. Critical habitat designation can have other indirect effects, however, such as through state or local laws or ordinances triggered by the presence of designated critical habitat, or through increased or decreased property values in or adjacent to critical habitat.

Section 7(a)(2) of the ESA prohibits federal actions that are likely to jeopardize the continued existence of a listed species or destroy or adversely modify designated critical habitat. Existing regulations (50 CFR 402.02) define destruction or adverse modification of critical habitat as "a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of

a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical." To jeopardize the continued existence of a species is defined as "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species."

The terms "adverse modification" and "jeopardy" are thus defined as separate and independent standards, with adverse modification findings triggered by effects to the physical or biological features of a species' habitat, and jeopardy findings triggered by effects to the reproduction, numbers, and distribution of plants or animals themselves. Nevertheless, the Services have found that projects that likely destroy or adversely modify critical habitat are also likely to jeopardize the continued existence of species. Accordingly, designation of critical habitat has offered species little protection above that which already was guaranteed them by the section 7 "jeopardy" standard. Consequently, the principal benefits of critical habitat designation have been increased awareness of the importance of these habitats to species survival and recovery and a requirement for section 7 consultation in areas designated as critical habitat but not occupied by the species, where section 7 review of actions would not otherwise be triggered.

**Issues of Concern**

There are 7 problems associated with critical habitat designation that need to be resolved through legislative, regulatory, and budgetary means:

1. Species–habitat relationships are more complex and dynamic than reflected in the simplistic structure of "critical habitat" under the ESA. At the time of listing, the specific areas occupied by a species, and the physical and biological features that define habitats "essential to the conservation" of the species, generally are not well known. Yet the ESA requires that they form the basis of a rulemaking concurrent with or no later than 1 year from listing. Natural population dynamics, succession, disturbances, and other ecological processes often produce dynamic patterns in the occurrence and abundance of individuals and suitable habitat within landscapes. Yet the ESA requires designation of specific areas through rulemaking, a time-consuming and expensive procedure that makes frequent and timely revision impracticable.

2. Since the 1990s, the Services have not been provided sufficient resources to comply with the critical habitat designation requirements of the ESA. There is a large backlog of listed species for which critical habitat has not been designated. This backlog, in turn, has triggered litigation that has drained available resources further.

3. Critical habitat designation is expensive, controversial, and time-consuming in comparison to listing because, in addition to the biological determination, it requires a complex economic impact analysis and detailed mapping of habitats across often large geographic areas.

4. There is widespread confusion and disagreement about what constitutes critical habitat and about the consequences of its designation, particularly with respect to private lands, which results in perceptions that can make listing of species more difficult. In addition, because activities on nonfederal lands within critical habitat may be affected directly and indirectly by the designation, landowners may be adversely affected and generally perceive designation of critical habitat as a disincentive to species conservation on their lands.

5. Although positive, proactive management actions may be more effective than use of critical habitat designation in halting and reversing declines of species due to harmful human activities, insufficient incentives and rewards are provided to encourage landowners to commit voluntarily to implement habitat management and restoration measures that equal or exceed the biological protections of critical habitat.

6. Overlapping protection provided by the section 7 jeopardy standard and designation of critical habitat for areas that are occupied by the listed species results in questions regarding the overall cost/benefit of designation of critical habitat. The importance of such designation is primarily in areas beyond the currently occupied range but that are perceived as important for species recovery.

7. Decisions by the U.S. Courts of Appeals for the Fifth, Ninth, and Tenth Circuits have rejected the Services' regulatory definition of "destruction or adverse modification," and the Fifth and Ninth Circuits have invalidated the definition. The Services have not yet proposed a new definition, but clearly need to do so.

**Potential Solutions**

To address the problems listed above and improve conservation of habitats critical to the conservation of listed species, consideration should be given to the following. While increased funding and administrative improvements are needed, TWS believes that legislative reform is essential to effectively improve the current problems associated with critical habitat.

Funding Options
1. Increase the funds available for critical habitat designation to a level that will allow the Services to comply with the ESA.

Administrative Options
1. Establish, through notice and comment, detailed policy and procedural guidance on how to identify, quantify, and map critical habitat, assess the economic and other impacts of designation, and balance the benefits of designating any specific area in comparison to the benefits of not designating.

2. Involve state fish and wildlife agencies and federal land-management agencies more in the process of developing that guidance and subsequently identifying and designating critical habitat.

3. Lands covered by Habitat Conservation Plans (HCPs), Safe Harbor Agreements (SHAs), or other conservation agreements or mechanisms that provide net benefits to listed species through management or restoration of habitats should be excluded from critical habitat designation. Alternatively, habitat modification on such lands should be governed by the terms of the conservation agreements or mechanisms rather than the provisions pertaining to critical habitat designation. These measures would provide needed incentives and rewards for landowners to enter into conservation agreements or establish other mechanisms that provide net benefits to species through management or restoration of habitats.

4. The Services should promulgate a revised regulatory definition of "destruction or adverse modification" that corrects the defects identified by the federal courts but preserves the basic parity that has long existed with the "jeopardy" standard. While "jeopardy" and "destruction or adverse modification" are separate standards subject to independent analysis and findings, conservation of listed species would not be well served by having 1 standard defined to be more sensitive and likely to be triggered than the other. Conservation of listed species requires equal commitment to protecting the remaining individuals of the species and the habitat essential to their eventual recovery.

Legislative Options
1. Amend the ESA to allow the Services to reconcile the duty to designate critical habitat with the funds available to carry out all their obligations under section 4. This reconciliation could be achieved by providing for critical habitat designation to be determined "prudent but precluded by higher priorities," with the general priorities among the various listing categories (petition findings, listing determinations, critical habitat designations) to be established in accordance with a biologically based priority scheme developed by the Secretary through public notice and comment.

2. Amend the ESA to move the designation of critical habitat to the recovery planning process, except when there is an urgent eminent threat to a significant amount of occupied habitat that would warrant designation at the time of listing. Regulatory promulgation of critical habitat management guidelines should be considered as an alternative to designation of specifically mapped areas as a means of helping federal agencies avoid adverse modification or destruction of habitat, particularly for wide-ranging species.

3. To encourage voluntary conservation efforts within an area designated as critical habitat, any private landowner who owns land should receive priority in the disbursement of funds from any federal conservation incentive programs, such as the Landowner Incentive Program, for the conservation or restoration of such habitat and should qualify for tax breaks and/or inheritance tax waivers.

4. Encourage nonfederal landowners to provide net benefits to listed species through conservation agreements for habitat management or restoration by withholding the effects of critical habitat designation on lands covered by such agreements.

## IV. INTERAGENCY SECTION 7 CONSULTATION

Once a species has been listed as either threatened or endangered, a primary means of conserving the species is found in the ESA section 7, which states, "Each Federal agency shall, in consultation with and with the assistance of the Secretary [of the Interior or Commerce], insure that any action authorized, funded, or carried out by such agency…is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical." Consequently, the federal agencies that propose actions are the responsible parties for ensuring that their actions are not likely to jeopardize listed species or destroy or adversely modify designated critical habitat.

Section 7 of the ESA and corresponding consultation regulations (50 CFR part 402, subparts A and B) require federal agencies to consult with either of the Services on any federal action that may affect a listed species or designated critical

habitat. An agency's consultation duty may be met informally if the agency determines that the federal action under consideration is not likely to adversely affect a listed species or critical habitat and one of the Services concurs in writing. Federal agencies must consult formally with one of the Services if the action is likely to adversely affect a listed species or critical habitat or if the Service does not concur with a federal agency's "not likely to adversely affect" determination. During formal consultation, the federal agency and the appropriate Service examine the effects of the proposed action and whether the proposed action is likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat and whether incidental take of listed species is anticipated. Formal consultation concludes with the appropriate Service issuing a biological opinion that describes these effects and states whether the action is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Findings of jeopardy or adverse modification of critical habitat must include reasonable and prudent alternatives, if any are available, that would avoid the likelihood of jeopardy or adverse modification, could be implemented in a manner consistent with the intended purpose of the action, are within the federal agency's legal authority and jurisdiction, and are technologically and economically feasible. In cases in which take of individuals of listed wildlife species is anticipated, a biological opinion must contain reasonable and prudent measures and terms and conditions to minimize incidental take. Following consultation, the federal agency is responsible for implementing the biological opinion, if necessary, through its available authority.

On balance, implementation of section 7 of the ESA has worked reasonably well, serving to limit the harmful effects of federal actions on listed species through project modifications that still allow the majority of actions to fulfill their intended purpose. The interagency section 7 consultation regulations have been in place and have provided effective direction for the conduct of consultations since 1986, although several recent appeals court decisions invalidating the definition of "destruction or adverse modification" will force the Services to revisit this very significant policy issue. A detailed procedural handbook has been issued through a public notice and comment process. Most federal and state agencies and the public understand the consultation process and have incorporated consultation into their business practices.

Funding and staffing for the Services to provide consultations have not kept pace with the growing number of federal actions requiring consultation, with resulting backlogs and delays in federal agency decision making in some circumstances. Funding for the Bureau of Land Management (BLM) and Forest Service has been inadequate to complete consultation and monitoring work.

To streamline section 7 consultations on proposed projects that support the National Fire Plan, the Services have issued joint counterpart regulations in cooperation with the Forest Service, BLM, Bureau of Indian Affairs, and National Park Service. Similar regulations have been developed with the Environmental Protection Agency for approval of pest control products under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). In general, these counterpart regulations reflect the demonstrated ability of these particular federal agencies to determine whether their actions are likely to harm listed species and thus provide an alternative process for completing section 7 consultations that eliminates the need to conduct informal consultations and obtain written concurrence from the Services for actions that are not likely to adversely affect listed species or designated critical habitat.

**Issues of Concern**

1. In recent years there have been approximately 70,000 federal actions/year that have triggered some form of consultation. On average, >95% are resolved through informal consultation procedures, but even informal consultations can take time and involve substantial project modifications. Thirty years after passage of the ESA, and despite the variety of other environmental laws that require consideration of fish and wildlife conservation (e.g., Clean Water Act, FIFRA, National Environmental Policy Act, Federal Power Act, National Forest Management Act, and Federal Land Policy and Management Act), federal agencies do not often incorporate effective measures to avoid or minimize the impacts of their actions on listed species until "forced to" by a section 7 consultation.

2. There is rarely perfect information available to establish the effects of an action on listed species. Once consultation is initiated, the Services must proceed with issuing a biological opinion based on the best available information, even when that information leaves many relevant questions unanswered. The Services do an admirable job of producing scientifically sound and defensible opinions in the face of such uncertainty. The National Research Council review of the biological opinions issued by the Services for the Klamath Irrigation Project has led some to question the adequacy of the existing consultation process in the face of a high level of uncertainty.

3. The funding and staffing of the Services to carry out their consultation responsibilities have not kept pace with the growth in consultation workload. As a result, federal

agencies and affected third parties are faced with project delays and increased transaction costs. Funding for the BLM, Forest Service, and other agencies has been inadequate to complete consultation and monitoring work.

4. A portion of the large and increasing consultation workload involves projects that may cause small amounts of incidental take of individual members of listed species, yet have very minor impacts or provide net benefits to those species.

5. Affected third parties (e.g., applicants for federal permits, lessees of federal lands, contractors of federal waters) have criticized the section 7 consultation process as not being sufficiently transparent and open to their participation.

6. Circuit court decisions in the Fifth, Ninth, and Tenth circuits have rejected the Service's regulatory definition of "destruction or adverse modification," and the Fifth and Ninth circuits have invalidated the definition. The Services need to propose a new definition.

**Potential Solutions**

Administrative Options

1. Federal agencies should continue and expand upon their efforts at all levels of management to proactively consider and address endangered species conservation using their authorities, with the goal of most effectively accomplishing the conservation purposes of the ESA. Engaging fish and wildlife expertise in state and federal agencies early in project design, developing interagency guidelines through broad planning efforts, establishing explicit and proactive interagency coordination procedures at the field and regional leadership levels, and conducting programmatic-level consultations that incorporate design criteria to avoid or minimize impacts are effective means of minimizing the potential impacts of projects on listed species and their critical habitats and thus reducing the transaction costs of section 7 compliance. Such efforts should be expanded.

2. Where issues continue, require other federal agencies to work with the Services, state fish and wildlife agencies, and other experts from the scientific community to resolve areas of scientific disagreement or uncertainty, to the extent that they can be resolved, during development of the biological assessments, and then to design their action conservatively when faced with scientific uncertainty about project impacts or the adequacy of offsetting measures. In cases in which there remains substantial disagreement regarding the sufficiency or accuracy of the available data at the onset of consultation, the federal agency and Service(s) should determine whether the circumstances warrant soliciting independent analysis from other experts from within the Service(s) and from outside (i.e., U.S. Geological Survey, state wildlife agencies, universities, and appropriate nongovernmental organizations [NGOs]) prior to preparing the opinions—recognizing that that step will likely require extension of established consultation timeframes.

3. In order to produce timely delivery of section 7 products and decisions and to minimize transaction costs, the Services should continue and expand their efforts to work cooperatively with state fish and wildlife agencies during consultations.

4. The Services should expand and make uniform the use of explicit decision-making protocols in consultations so that the process and decisions are transparent and able to be replicated.

5. The Services, in cooperation with state fish and wildlife agencies and other federal agencies, should develop methodologies to reduce the times required to comply with section 7 for actions involving incidental take that would have low impacts or produce net benefits to listed species.

6. Federal agencies undertaking actions subject to section 7 should engage applicants in the consultation process when they ask for such access. The interagency consultation regulations have long provided for involvement of applicants in the consultation, with the knowledge and consent of the federal agency.

7. The Services should promulgate a revised regulatory definition of "destruction or adverse modification" that corrects the defects identified by the federal courts but preserves the basic parity that has long existed with the jeopardy standard. While "jeopardy" and "destruction or adverse modification" are separate standards subject to independent analysis and findings, conservation of listed species would not be well served by having 1 standard defined to be more sensitive and likely to be triggered than the other. Conservation of listed species requires equal commitment to protecting the remaining individuals of the species and the habitat essential to their eventual recovery.

8. It is incumbent upon the Executive Branch to request, and for Congress to appropriate, adequate funding to agencies so that staffing limitations do not delay consultations and increase transaction costs to federal agencies and the affected public.

## V. IMPROVED RECOVERY OF SPECIES

The purpose of the ESA is to prevent species extinctions and

then provide measures to help bring species back to the point at which the measures provided by the law are no longer necessary. Recovery of species is 1 metric by which the success of the ESA may be evaluated, but it must be used with care because halting or reversing declines that in some instances have developed over 200 years requires long periods of time and a strong commitment to fund and implement actions that will lead to recovery. Currently, recovery efforts are inadequate for most, if not for nearly all, listed species. More effective efforts to recover species requires not only increased spending, but also coordinated undertakings by a broad array of landowners, public agencies, and stakeholders. It also requires better and user-friendlier incentives to private landowners who often are willing to undertake efforts to protect and recover endangered and threatened species. As a key first step in achieving this goal, section 4(f) of the ESA requires the Services to develop recovery plans and "give priority to those endangered species or threatened species, without regard to taxonomic classification, that are most likely to benefit from such plans, particularly those species that are, or may be, in conflict with construction or other development projects or other forms of economic activity." As of September 2002, 81% of listed species were covered by final approved recovery plans, and draft plans had been issued for another 4%. Recovery plans, however, are necessary but not sufficient to achieve recovery and delisting of species. To date, 14 listed species have been recovered and delisted under the ESA, and 7 species are proposed for delisting. Another 22 have improved sufficiently to be reclassified from endangered to threatened status.

**Issues of Concern**

1. Recovery is established under the ESA as the responsibility of all federal agencies, in partnership with the states. In reality, given the importance of private lands to conservation of listed species, partnerships with Native American tribes, local governments, NGOs, and private parties are also essential to recovery of many listed species. However, recovery, unlike listing or consultation, has not evolved as a mandatory duty of any party. It is largely a voluntary endeavor driven by enlightened self-interest. As a result, there has been great disparity among species receiving recovery attention, and many species do not have sufficient funding or attention devoted to them to achieve significant recovery progress. (The most recent report to Congress on state and federal government expenditures for implementing the ESA, covering fiscal year 2002, showed that 50% of the funding was focused on only 17 species [1.3% of all those listed under the ESA]. While general [i.e., non-land acquisition–related] expenditures were ≥$1 million for 87 species, the median expenditure for all species was only $14,100.)

2. Recovery plans are needed to establish a roadmap for recovery activities, but the Services have been hard pressed to produce in timely fashion recovery plans that reflect a good understanding of species recovery needs and a reasonable consensus among species experts and affected publics. There is inherent tension between the competing demands for appropriate scientific certainty about threats and the effectiveness of conservation measures, the involvement of stakeholders in the recovery planning process, and rapid production of a recovery plan with reasonable consensus of the recovery team. As a result, recovery plans often take significant time and funding to produce, are not revised and updated as frequently as they should be, and are not sufficiently integrated with other federal, regional, state, and local efforts.

3. Recovery plan implementation usually involves commitment of staff time or funding, both of which are often in short supply. Much has been accomplished in the last 30 years through altruistic action and cooperation, but the overall need for recovery action far exceeds the level of effort that has been applied to date.

4. Landowners need effective incentives that they can rely upon when making investments to endangered species conservation. The development by the Services of policies and regulations for providing assurances to landowners through SHA and Candidate Conservation Agreements with Assurances (CCAA) has been a very positive development in recent years. The "No Surprises" policy and regulations have also been a very positive incentive, giving landowners certainty that the commitments they make with the Services in conservation agreements represent all that the federal government will hold them to, even if unforeseen circumstances cause the species to decline. None of these incentive tools is codified in statute, however, and some landowners are still reluctant to rely upon incentives established solely by regulation. That reluctance is understandable, given the ongoing litigation over application of the No Surprises policy and regulation to an HCP.

5. The problems described above prevent some species from being recovered and delisted as quickly as would otherwise be possible.

6. The Services lack comprehensive policy and procedural guidance on how to comply with the statutory requirement to monitor the status of species that have recovered and been removed from the lists of threatened or endangered species. Such guidance needs to be developed in conjunction with state fish and wildlife agencies to ensure that effective post-delisting monitoring plans are produced in timely fashion and in cooperation with the states that will be assuming

management responsibility for the species post-delisting.

**Potential Solutions**

Funding Options

1. The Administration should request adequate appropriations to support the recovery planning, implementation of site-specific management actions identified in recovery plans, and other actions needed for meaningful progress toward recovery for all listed species. Congress should provide such appropriations, minimize earmarking to particular projects, and hold the agencies responsible for allocating funding and staffing equitably among all listed species, based on biological needs and opportunities.

Administrative Options

1. Prompt development of recovery plans subsequent to listing is key. The Services should manage the recovery planning process to ensure that final recovery plans are completed and approved within 3 years of listing and then revisited at least once every 5 years and revised as needed. A simple recovery outline, based upon what is known at the time of listing, should be completed within 1 year of listing and used to guide interim recovery actions during the period of recovery plan preparation.

2. Recovery plans should:
   (i) assess risk and focus on amelioration of threats to species;
   (ii) be developed by teams that are of manageable size and sufficiently diverse so as to include needed expertise and representation of entities responsible for management of the species or its habitats, including state fish and wildlife agencies, federal land-management agencies, and others essential to recovery implementation; and
   (iii) include provisions for regular monitoring and reporting to make possible evaluation of plan effectiveness.

3. The Services should coordinate recovery plan activities and take other steps necessary to monitor and report regularly on species status and plan implementation.

4. The Office of Management and Budget (OMB) should exercise its authority over the federal budget process to encourage all federal agencies, pursuant to ESA section 7(a)(1), to "utilize their authorities in furtherance of the purposes [of the ESA] by carrying out programs for the conservation [of listed species]." The OMB should hold agencies accountable, through the Government Performance and Results Act procedures, for contributing to meaningful progress in recovery of listed species and should develop a crosscut of agency expenditures for recovery of listed species.

5. The Service should develop, in cooperation with the states, comprehensive policy and procedural guidance on preparation of post-delisting monitoring plans.

6. Provide state fish and wildlife agencies, Native American tribes, and federal land-management agencies with the opportunity to be involved in development, implementation, and monitoring of recovery plans and plan activities.

7. The BLM, Forest Service, other federal agencies, and Native American tribes should participate in the recovery planning process to assist in developing measures and monitoring capable of being adopted in the agencies' land-use plans.

## VI. INVOLVING STATE FISH AND WILDLIFE AGENCIES

Under the ESA, states and the Services share jurisdictional authority for listed species. When the ESA was passed in 1973, Congress stated, "the successful development of an endangered species program will ultimately depend upon a good working arrangement between the Federal agencies, which have broad policy perspective and authority, and the State agencies, which have the physical facilities and the personnel to see that State and Federal endangered species policies are properly executed." Section 6 requires the Services to cooperate to the maximum extent practicable with the states in carrying out the program authorized by the ESA.

Cooperative agreements between the Services and the states under section 6 of the ESA are the means by which the Services certify that states have established and maintain adequate and active programs for the conservation of listed species. For those states that have entered into cooperative agreements, the grant program established under section 6 provides funds to state fish and wildlife agencies to cooperate in efforts to maintain and recover listed species and to monitor the status of candidate species and recently recovered, delisted species.

**Issues of Concern**

1. Implementation of the ESA would be improved by greater partnerships with state fish and wildlife agencies in carrying out the ESA, particularly in the efforts to prevent the need to list and to recover species, and in conservation efforts on private and other nonfederal lands.

2. State fish and wildlife agencies are not being provided

adequate and stable funding from the section 6 Cooperative Endangered Species Conservation Fund to fulfill state roles in the conservation of endangered and threatened species. For instance, in fiscal year 1977, there were 194 U.S. species listed under the ESA, and $4,300,000 was appropriated for state grants under section 6. By the end of 2002, there were 1,263 listed U.S. species—more than 6 times the number in 1977, yet the $7,520,000 provided that year had only about one-third as much buying power as the funds provided in 1977.

3. State expertise, data, personnel, and working relationships with others still are not sufficiently utilized in ESA decisions and actions.

4. Too often, too little is done too late to make listing unnecessary. To a significant extent, a factor contributing to this problem is that there are insufficient financial incentives and regulatory assurances to facilitate actions by states that would make listing unnecessary.

5. Day-to-day cooperation between the state fish and wildlife agencies and the Services in administration of the ESA continues to be hindered by the FACA.

**Potential Solutions**

Funding Options

1. The Administration should request and the Congress should appropriate adequate funding under section 6(i) of the ESA to assist states in building a strong partnership for conservation of candidate, threatened, and endangered species and monitoring of recovered, delisted species.

Administrative or Legislative Options

1. The states, where they have the fiscal resources, expertise, staff, and political support to do so, should play a much greater role in administration of the ESA.

2. State fish and wildlife agencies should have a clearer and more significant role in efforts to prevent species from becoming candidates and in listing decisions, critical habitat designations, development of recovery strategies, and management and recovery of listed species.

3. The section 6 cooperative agreement provisions should be redesigned to function as a true partnership agreement requiring close collaboration and coordination between and among the states and the Services. The section 6 agreement can be the vehicle to identify the respective roles of the states and federal agencies. It should provide the flexibility to allow states that so choose to assume the lead for prelisting conservation, recovery planning and implementation oversight, SHA and HCP administration, and post-delisting monitoring.

4. The section 6 Cooperative Endangered Species Conservation Fund should be restored to its original intended purpose of providing adequate and stable funding to state fish and wildlife agencies to fulfill state responsibilities under the ESA. Grants related to HCP planning assistance and HCP and recovery land acquisitions, which currently are utilizing inappropriately the authorization provided by the Fund, should be authorized separately under section 15 of the ESA.

5. Amounts deposited to the Cooperative Endangered Species Conservation Fund should be made available to the states without further appropriation to make it possible for state fish and wildlife agencies to assume the lead for prelisting conservation, recovery planning and implementation oversight, SHA and HCP administration, and post-delisting monitoring.

6. Exempt state fish and wildlife agencies from FACA or limitations on predecisional coordination and consultation.

## VII. CONSERVATION ON PRIVATE LANDS

One of the ESA's 2 key means of achieving its goal to bring species back to the point at which its protections are no longer necessary is by imposing duties on individuals rather than on government agencies. No individual can "take" a listed species. In the parlance of the ESA, the prohibition on "take" means that it is illegal to harm, harass, hunt, pursue, wound, capture, collect, or even attempt to do any of these things. By 1975 regulation, the term "harm" was defined to include environmental modification or degradation, and a federal court found in 1979 that the ESA barred harm caused by habitat modification. In 1982, Congress decided that federal agencies that received favorable biological opinions could "incidentally" take listed species in accordance with the terms and conditions of reasonable and prudent measures (see IV. Interagency Section 7 Consultation). Congress then was faced with the fact that the take prohibition was absolute for individuals and there was no mechanism for incidental take of species resulting from nonfederal projects. The result that same year was the development of an exemption to take under section 10 of the ESA for those who develop HCPs.

The HCPs are intended to minimize take of listed species caused incidentally by nonfederal activities and provide measures to mitigate the effects of that take and ensure that it does not appreciably reduce the likelihood of survival and recovery of these species. Private landowners, corporations, or state or local governments who clear land, cut timber, or alter habitats in some other way that might incidentally harm

a listed species must get an incidental take permit by developing an HCP. As of April 2003, 541 HCPs have been approved, covering approximately 15,400,000 hectares and protecting more than 525 endangered or threatened species. To increase use of the HCP, the Services adopted a so-called "No Surprises" rule that assures private landowners they will not incur any additional mitigation requirements beyond those they agreed to in their HCPs. In general, HCPs have been utilized by large corporate landholders, states, and municipalities to minimize and mitigate incidental take. Small private landowners with limited capabilities have made much less use of the process.

In the 1990s, 2 new approaches under the ESA section 10 were adopted by regulation to allay private landowner fears about the regulatory consequences of having listed species on their lands and to encourage the conservation of these species. The SHA and CCAA provide regulatory assurances to encourage conservation of listed and candidate species on private lands. The SHA rule encourages voluntary management by private landowners to provide a net benefit for listed species for some period, and thus promote recovery, on their lands by giving assurances to the landowners that they will be able to return their lands to a predetermined baseline condition at the conclusion of their management agreement. The CCAA rule similarly encourages landowners to conserve at-risk species before listing by providing assurance that the management measures they commit to will not be increased if listing ultimately becomes necessary.

**Issues of Concern**

1. Too many private landowners continue to distrust and fear any application of the ESA to their lands or activities. These private landowners may actively work to ensure that listed or candidate species are not attracted to their lands or that those species already present do not remain. At the very least, they may be unwilling or reluctant to undertake actions that would benefit listed or candidate species.

2. The various landowner incentive programs now available (e.g., financial, regulatory) have not been sufficient to allay fears completely, build trust, and encourage landowners to conserve listed or candidate species.

3. Individual HCPs can be complex, expensive, and time consuming to develop and be approved, and thus are often not well suited to small, individual private landowners. In addition, the No Surprises rule, as it applies to HCPs, has been and probably will continue to be challenged through litigation. Without the assurances provided by No Surprises, landowners may not find developing HCPs to be a sound business decision.

4. There is a lack of landscape-scale planning to coordinate application of the myriad of federal programs that address conservation on private lands.

5. The SHA and CCAA exist only in regulation and are not explicitly authorized by the ESA. Consequently, some landowners are concerned that the rules, as they presently exist, could be changed through subsequent rulemaking and are unwilling to commit to long-term conservation agreements.

6. Conservation of listed species on private lands would be improved by greater involvement of state fish and wildlife agencies in carrying out the provisions of section 10 of the ESA concerning HCPs and enhancement of survival permits (SHA and CCAA).

**Potential Solutions**

Administrative Options

1. Expand existing land-management financial and technical assistance to landowners who undertake actions that contribute to recovery (e.g., Department of the Interior's Private Stewardship Grants program), and target Farm Bill conservation programs to support landowner actions contributing to recovery of listed species or conservation of species that are candidates for listing.

2. Provide landscape-scale planning that private lands programs can tier off and contribute to, such that landowners and government program administrators are all aware of the major conservation needs in the landscape in question, and landowners can select the programs that best meet their needs. This would tailor programs to individual landowner needs and interests, and assure that the available programs are consistent with meeting the priority conservation needs in that landscape.

3. State fish and wildlife agencies and the Services should establish mechanisms that make HCP, SHA, and CCAA more accessible to small landowners.

4. Through expanded use of section 6 agreements and other mechanisms, state fish and wildlife agencies should be allowed and encouraged to assume the lead for administration of SHA, CCAA, and HCP administration.

Legislative Options

1. Codify the No Surprises assurances and explicitly authorize CCAA and SHA to make their assurances more secure and increase private landowner participation.

2. Qualify private lands managed for the conservation of listed species for special conservation incentives, tax breaks, or inheritance tax waivers.

3. Provide financial assistance (e.g., grants, tax credits) to landowners who enter into SHAs or CCAAs.

4. Federal conservation programs to encourage conservation on private lands, such as those in the Farm Bill, should give greater priority than currently to actions that serve to conserve listed species or species that are candidates for listing.

5. Provide a tailored Freedom of Information Act exemption along the lines of that in the federal Cave Protection Act to allow the Services to withhold information for which landowners have legitimate privacy interests.

## VIII. ENSURING SOUND DECISIONS

In approving the ESA in 1973, Congress determined that "sheer self-interest impels us to be cautious" and characterized the legislation as having at its heart "the institutionalization of that caution." Consequently, the ESA requires that listing determinations, critical habitat designations, and decisions under sections 7 and 10 to be made on the basis of the "best scientific and commercial data available." This standard requires actions to be taken to address the threat of species extinctions even if it is not possible to demonstrate conclusively that such a threat exists or to demonstrate with certainty any link between causes and effects.

Since 1994, the Services have required evaluation of all scientific and other information used in ESA decisions to ensure that it is reliable, credible, and represents the best scientific and commercial data available. It is the policy of the Services "to gather and impartially evaluate biological, ecological, and other information that disputes official positions, decisions, and actions proposed or taken by the Services during their implementation of the Act." Biologists must document their evaluation of information that supports or does not support a position being proposed as an official agency position on a status review, listing action, recovery plan or action, interagency consultation, or permitting action. These evaluations must rely on the best available, comprehensive, technical information regarding the status and habitat requirements for a species throughout its range. During the public comment period, the Services' policy incorporates independent peer review in listing and recovery activities by soliciting "the expert opinions of three appropriate and independent specialists regarding pertinent scientific or commercial data and assumptions relating to the taxonomy, population models, and supportive biological and ecological information for species under consideration for listing." With respect to recovery, the Services' biologists are required to "utilize the expertise of and actively solicit independent peer review to obtain all available scientific and commercial information from appropriate local, state and federal agencies; Native American tribal governments; academic and scientific groups and individuals; and any other party that may possess pertinent information during the development of draft recovery plans for listed animal and plant species."

Efforts to create a hierarchy of quality within the standard of "best scientific and commercial data available" are problematic. Sound decisions under the ESA require use of diverse types of information. Field data on a species' numbers or amounts or quality of habitat are important. However, because species listed under the ESA or under consideration for listing are by definition rare, these data are often incomplete and difficult to gather. Consequently, population viability analyses, which use mathematical models, and many statistical tools can be of great importance in understanding a species' status and the likelihood that it will become extinct.

Additional problems arise from efforts to require certain types of data. Requiring, for instance, that listing determinations be supported by "observation of species in the field" inappropriately places that type of data above all others and begs the question about what constitutes such observation. Do census methods that rely on indirect observation of species attributes or correlates of species presence constitute "observation of the species in the field"?

Peer review is an important means of assuring sound information. Nevertheless, often the best scientific and commercial data available are present in state, federal, and private reports. Publication of data in these reports often does not occur in peer-reviewed journals either because it is not appropriate to the journals or because the publication process can take years. Use of peer review also is an important means of assuring sound agency decisions. Care must be taken to ensure that such review does not result in the Services abandoning actions under ESA because they would become too costly or would delay other activities. Use of peer review, for instance, within the section 7 consultation process could substantially lengthen the timeframes for that consultation to the detriment of species conservation or federal agency actions.

**Issues of Concern**

1. While ESA decisions are based on the best available information, often the information on the status of a species or effect of an action is incomplete due to lack of information or inadequate efforts to monitor or measure the species' status.

2. The ESA does not require explicitly soliciting of state fish and wildlife agency information, sharing information with these agencies, or involving them in decisions under the ESA. Perhaps as a result, it appears that information from state wildlife agencies is often not sufficiently sought, used, or considered.

3. The ESA and federal rules of procedure do not encourage sharing of information on the status and processes of decisions. Consequently, it is difficult for those outside the Services, and even for many within the agencies, to determine how decisions are made, what is being considered, and how the process is proceeding.

**Potential Solutions**

Administrative or Legislative Options

1. Involve the state fish and wildlife agencies and other sources of expertise early and throughout the ESA decision-making processes.

2. Provide sufficient time and resources to investigate and prepare all the documentation associated with decisions under the ESA.

3. The Services and other federal agencies should set standards of expertise and training for individuals who are responsible for making ESA-related recommendations or decisions.

4. Provide interagency support and establish interagency guidelines to encourage greater collaborative efforts among state and federal agency scientists and managers.

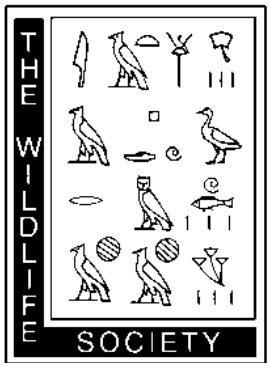
5. The Services should expand and make uniform the use of explicit decision-making protocols in consultations so that the process and decisions are transparent and able to be replicated.

6. Require federal agencies to work with the Services, state fish and wildlife agencies, and other experts from the scientific community to resolve areas of scientific disagreement or uncertainty, to the extent that they can be resolved, during development of the biological assessments, and then to design their action conservatively when faced with scientific uncertainty about project impacts or the adequacy of offsetting measures. In cases in which there remains substantial disagreement regarding the sufficiency or accuracy of the available data at the onset of consultation, the federal agency and Service(s) should determine whether the circumstances warrant soliciting independent analysis from other experts from within the Service(s) and from outside (USGS, state wildlife agencies, universities, and appropriate NGOs) prior to preparing the opinions—recognizing that that step will likely require extension of established consultation timeframes.

7. Use adaptive management, which employs an iterative approach to managing species or ecosystems in those cases in which the methods of achieving the desired objectives are unknown or uncertain, to monitor actions to determine their effectiveness, and allow modification to address the concern about scientific uncertainty.

## CONCLUSIONS

The ESA has been successful in achieving its primary goal of preventing extinctions, and the firm statutory duties and strong substantive standards imposed by the current law to prevent extinctions and recover species should be maintained. However, the effectiveness of threatened and endangered species conservation should be increased through improvements to the statute and its funding and implementation. Greater federal resources and effort need to be committed to the purposes of the ESA, particularly to the recovery of listed species. Support and encouragement of complementary state, tribal, and private conservation efforts through funding, policies, and statutory provisions are essential to establish and maintain the partnerships that are required to prevent extinctions and recover imperiled species. Existing resources should be utilized more efficiently by amending the ESA to lower transaction costs in listing decisions and critical habitat designations. Federal decision-makers should solicit and use the expertise of state fish and wildlife agencies and others in a consistent and open manner. Decisions under the ESA should be transparent, replicable, and based on robust scientific analyses of the best available information.




**THE WILDLIFE SOCIETY**

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The Wildlife Society is the association of wildlife professionals dedicated to excellence in wildlife stewardship through science and education. The goals of The Wildlife Society are to: develop and maintain professional standards for wildlife research and management; enhance knowledge and technical capabilities of wildlife managers; advance professional stewardship of wildlife resources and their habitats; advocate use of sound biological information for wildlife policy and management decisions; and increase public awareness and appreciation of wildlife management. The Wildlife Society, founded in 1937, is a nonprofit organization whose members include research scientists, educators, resource managers, administrators, communications specialists, conservation law enforcement officers, and students from more than 70 countries.