



DEFENDERS OF WILDLIFE ESA POLICY WHITE PAPER SERIES

# IMPROVING THE EFFECTIVENESS AND EFFICIENCY OF THE ENDANGERED SPECIES ACT



## ABOUT THIS PUBLICATION

This white paper is the first in a series laying out Defenders of Wildlife's vision for the Endangered Species Act (ESA) over the next 10 years. The ESA is the most important and far-reaching wildlife conservation law in the United States, and Defenders has long been a leading advocate for science-based, pragmatic interpretation and implementation of the law. Our endangered species policy and legal experts carefully evaluate the application of the ESA. We look for opportunities to promote innovative strategies and reforms to make the ESA more effective and efficient and pursue initiatives that are bold, transformational and strategic. Through the ESA Policy White Paper Series, we are presenting our ideas to foster collaboration with others who share our vision for the recovery of North America's imperiled plants and wildlife.

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Defenders of Wildlife is a national, nonprofit membership organization dedicated to the protection of all native wild animals and plants in their natural communities.

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COVER: A sampling of the amazing diversity of plants and animals protected by the ESA: (clockwise from top left)  
Pagosa skyrocket, courtesy U.S. Fish and Wildlife Service; California red-legged frog, © Sebastian Kennerknecht/Minden Pictures;  
black-footed ferret, courtesy Ryan Hagerty/U.S. Fish and Wildlife Service; Devil's Hole pupfish, courtesy Olin Feuerbacher/U.S. Fish and Wildlife Service

Since its passage nearly four decades ago, the Endangered Species Act (ESA) has been the cornerstone of imperiled wildlife and plant conservation in the United States. It has proved instrumental in saving hundreds of species from extinction, including the gray wolf, grizzly bear, black-footed ferret and bald eagle—which was removed from the endangered species list in 2007 after its numbers in the continental United States rebounded to 10,000 breeding pairs.

In fact, only 10 out of more than 2,000 imperiled plants and animals protected under the ESA have gone extinct, a success rate of more than 99 percent. Yet there are many opportunities to make the act work better for both wildlife and people. In our efforts to improve the act, Defenders of Wildlife is guided by one core principle: The ESA must work more effectively and efficiently to conserve imperiled plants and animals.

What does it mean for the ESA to be more effective? The ESA's primary goals are to prevent extinction, recover species and conserve the ecosystems on which they depend. An effective ESA is one that achieves those goals. The act would get an "A+" if it recovers every listed species and an "F" if it allows every species to go extinct. In our view, a more effective ESA is one that slides closer to an "A+."

We also want the ESA to be more efficient. This means achieving the same level of effectiveness, but with improved processes that stretch the impact and effect of

limited conservation dollars and reduce the cost of ESA compliance for the public. Efficiency is crucial for several reasons. It reduces the cost of achieving the goals of the ESA, enabling more species to benefit from the same level of funding. It also reduces the cost of interacting with the ESA, which encourages public involvement in conservation.

Greater efficiency may also ultimately increase conservation effectiveness, because it focuses wildlife agencies on efforts that yield a higher conservation return on investment. We thus seek to improve the ESA's effectiveness while at the same time striving, where possible, to improve its efficiency. This white paper describes four important strategies for accomplishing that.

The strategies focus on recovering more species despite the challenge of an inadequate budget to implement the ESA, improving the effectiveness of other federal laws and state laws at conserving imperiled and at-risk species, encouraging innovative approaches to addressing scientific uncertainty in ESA decision-making, and facilitating more transparent, consistent and flexible administration of the ESA.

Too often we find that ESA controversies are not actually about scientific or technical disputes, but about underlying value and normative judgments of how the ESA should work. The strategies we propose reflect Defenders values and priorities so that our starting point for ESA improvements is clearly understood.



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The Florida Everglades, home to nearly 70 listed plants and animals, is an endangered and threatened species hotspot. Focusing conservation efforts on areas with high concentrations of imperiled species can significantly increase their effectiveness.

# 1 MAXIMIZE CONSERVATION OUTCOMES THROUGH PRIORITIZATION

**STRATEGY SUMMARY:** Defenders encourages wildlife agencies to maximize wildlife diversity conserved under the ESA by explicitly prioritizing how they allocate recovery funds. Recovery funding decisions should consider factors such as the biological uniqueness of species, the role of keystone and other functionally important species, the degree of imperilment of species, the opportunity to protect suites and guilds of multiple species, and which species are likely to benefit the most from recovery actions. The ESA should continue to focus on preventing extinctions and recovering species to the point where they are once again well distributed and self-sustaining or minimally dependent on continued human assistance (conservation reliant) over the long term.

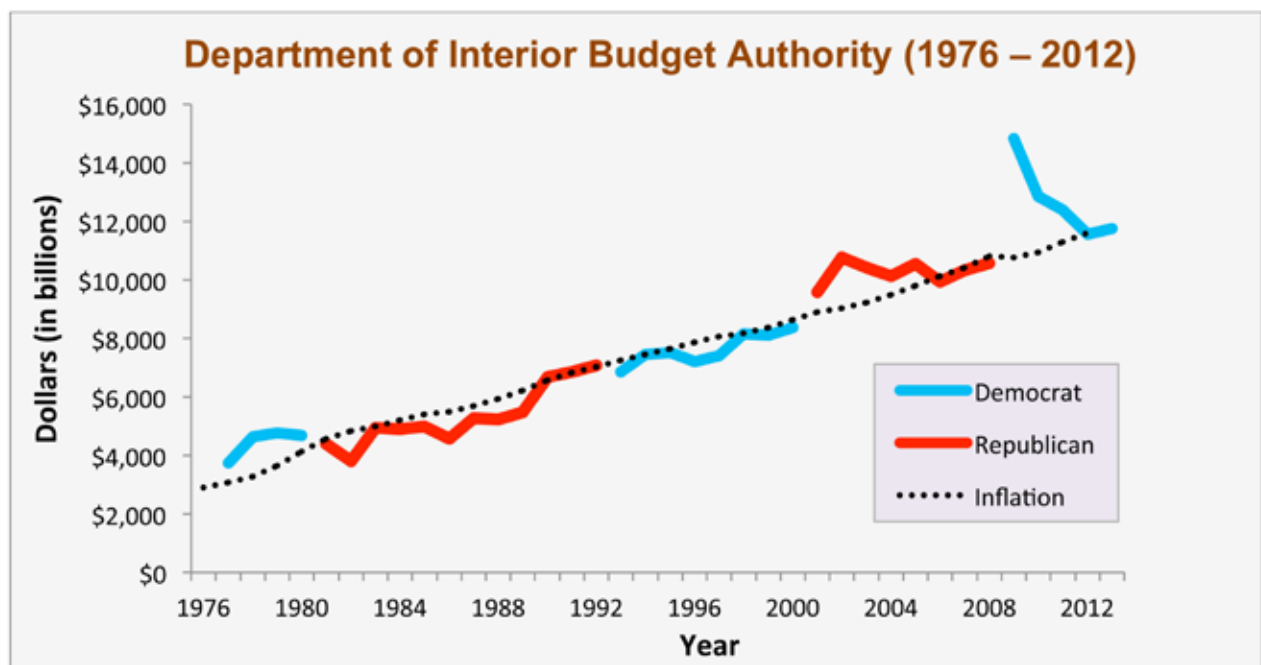
In an ideal world, there would be enough time and money to save all species, subspecies and populations from extinction; to recover species to levels necessary to maintain ecological functionality; to ensure that all species occupy as much of their historic range as feasible; and to help all species threatened with climate change adapt and persist in novel environments. But instead, we are faced with an increasing list of species at imminent risk of extinction, declining habitats, uncertainty about the effectiveness of certain conservation actions, and woefully inadequate conservation budgets.

Federal and state governments have never had more than a small fraction of the budget needed to conserve imperiled species. The Department of the Interior's budget authority over the past 30 years has not increased relative to inflation (see graph below), nor has the annual budget of the U.S. Fish and Wildlife Service (FWS) increased proportionate to the number of species listed under the ESA.

Under these conditions, we believe it is imperative to prioritize scarce resources to maximize the persistence of

as much biodiversity as possible. Indeed, wildlife agencies *already* prioritize on a daily basis. They decide which species to list first and which to consign to candidate status, sometimes for years. They decide which species will benefit from millions of dollars in recovery funding and which will receive only several thousand dollars. And they decide which collaborative conservation actions to act on and which not to pursue.

The problem is that prioritization is not often explicit, transparent or organized, thus preventing limited resources from being used to maximize the amount of species diversity conserved (one of the underlying goals of the ESA). An explicit and transparent process of prioritization would require agencies to answer questions such as which components of biodiversity they seek to maximize, which species and features are the most important to achieving that goal, and to what extent those species and features can be conserved. If we value maximizing the persistence of the greatest number of imperiled species, then the optimal strategy would be to



phase recovery resources away from rapidly improving and secure species to unsecure and rapidly declining species. These and other tradeoffs abound in endangered species decision-making. We do not intend for this white paper to become a manifesto on precisely how to navigate these tradeoffs. Rather, we argue simply that without confronting the tradeoffs in a deliberate manner that maximizes the amount of biodiversity conserved, wildlife managers will continue relying on ad hoc or inconsistent approaches that may lead to suboptimal outcomes.

Despite our general support for prioritization, we also acknowledge its difficulty and weighty implications, and know that it must be done carefully. Prioritization should never be used as an excuse to limit or decrease funding for conservation. Rather, it should be tailored in a way that enhances the impact of funding for conservation by enabling wildlife managers to demonstrate greater conservation benefits and a more transparent use of public and private conservation contributions. Prioritization should also be made compatible with the conservation of keystone, umbrella and other functionally important species or guilds of species, because doing so will enable us to better conserve many other species and their shared habitats, and buttress public support for conservation.

We also acknowledge that prioritization faces procedural obstacles to becoming an integral part of the ESA. For example, most federal agencies are decentralized. FWS alone has eight regional offices and uses a national recovery funding allocation formula to distribute recovery dollars among its regions based on the number of species each region is

responsible for and a rough estimated cost for recovering each species. The regions then suballocate those funds to their field offices. Most of a given region's recovery budget goes to salaries for recovery biologists, and the suballocations to the field are heavily influenced by long-standing relationships with conservation partners and the ability of those partners to bring additional recovery dollars to the table. Another challenge is that litigation and politics have often prevented FWS from effectively implementing its existing prioritization systems for listing and recovering species. These challenges will similarly affect our prioritization proposal.

Recovering all listed species must continue to be the goal, but as obstacles are overcome, prioritization could change how the ESA is implemented in several ways. It could, for example, lead to:

- A clear and transparent ranking system to determine which species to invest recovery dollars in first based on factors such as biological uniqueness, the likelihood of successfully recovering the species and the conservation trade-offs between investing in the recovery of one species versus other species.
- A strategic plan describing how the Endangered Species Program of FWS would implement the prioritization system.
- An FWS recovery budgeting process that rigorously matches species-by-species budget allocations with biological priorities identified by the agency and outcomes expected from the investment.

We believe these improvements could increase the number and taxonomic representativeness of species protected and recovered under the ESA.



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### **Prioritization and Threatened Species Conservation in New Zealand**

New Zealand faces many of the same obstacles as the United States in conserving imperiled species. The New Zealand Department of Conservation lacks the funding to prevent the extinction of all threatened species; decisions about species management are often made at the regional level with little uniformity across the nation; and the species that are managed for recovery do not represent the full taxonomic range of threatened species, the species most in need of management or the most cost-effective choices.

To recover the greatest number and diversity of threatened species given a fixed budget, New Zealand is prioritizing species for recovery based on factors such as species taxonomic distinctiveness, cost of management and likelihood of success. This approach brings greater transparency, consistency and effectiveness to recovery planning. Researchers have determined that prioritization will allow New Zealand to recover 273 species for \$31 million, compared to only 188 species without prioritization.

The kakapo, a flightless, nocturnal parrot found only in New Zealand, remains close to extinction despite years of recovery efforts. Conservationists are now debating whether funds would be better spent on species with more promising long-term prospects.

## 2 USE OTHER LAWS TO COMPLEMENT THE ESA'S ROLE IN CONSERVATION

**STRATEGY SUMMARY:** The ESA currently functions as an underfunded emergency room for species that have fallen through the cracks of other conservation regimes. Species are discharged from this emergency room when the factors that led to their listing are addressed, a practice that may leave species short of their ability to achieve longer-term conservation goals, such as ecological functionality and continued evolutionary potential. Defenders believes that other federal laws, along with state laws and private conservation programs, must assume a far more prominent role in continuing to restore delisted species and in preventing at-risk species from becoming listed under the ESA. These improvements will relieve pressure on the ESA, allowing it to function more effectively and efficiently.

As previously noted, the ESA was intended to prevent extinctions, to conserve and recover listed species to the point the protections of the act are no longer needed, and to protect the ecosystems on which listed species depend. As currently drafted, the ESA sunsets its regulatory control over a species once the threats that warranted its original listing have been resolved and the species is deemed recovered. But this may leave delisted species short of their ability to fulfill their functional roles in the ecosystem and to occupy as much of their historic range as feasible.

There are reasons we face this constraint: We live in a world of human-dominated landscapes, inadequate resources for implementing the ESA, political influence on wildlife conservation decision-making and ever-escalating demands for listings and recovery. Unless these challenges are overcome, it will be difficult to expand the ESA to assume broader goals than preventing extinctions and recovering species to the point where they no longer need ESA protections.

Because the ESA's role is limited, other federal laws, state conservation programs and private conservation efforts must



COURTESY, JOHN CLECKLER/ U.S. FISH AND WILDLIFE SERVICE

The California tiger salamander breeds in livestock ponds and vernal pools on public and private rangelands. To ensure the long-term conservation of this endangered amphibian, private conservation programs and state laws must complement ESA protections.

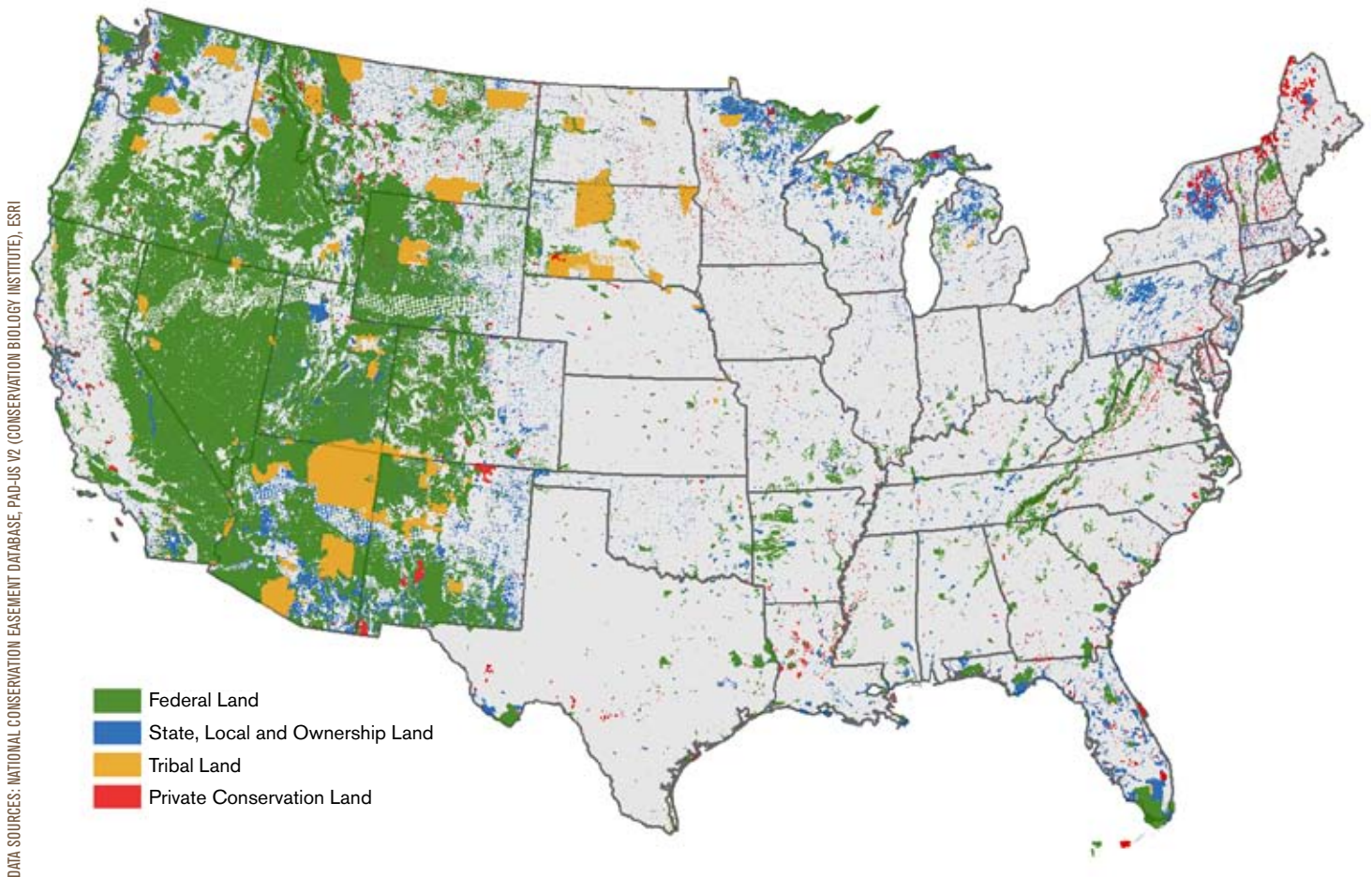
assume a much stronger role in wildlife conservation. They must prevent at-risk species from becoming endangered. They must allow delisted species to continue recovering to levels that enable ecological functionality and continued evolutionary potential. And they must help alleviate the congestion in the ESA emergency room, allowing it to operate more effectively and efficiently. All of this must happen if our nation's wildlife programs are to work effectively as a comprehensive wildlife healthcare system.

All federal natural resource agencies, for example, should implement robust programs to protect at-risk species under their jurisdiction, so as to obviate the need for an ESA listing. These agencies should also increase the populations of keystone and other highly interactive species to levels that will help restore the functionality of ecosystems. Federal, state and local governments also need to better incentivize

the conservation of at-risk species on private lands. This is especially important because half of all ESA-listed species have at least 80 percent of their habitat on private lands.

We acknowledge, however, that the implementation of most other federal and state laws is currently far from achieving these long-term goals and that fundamental reforms are needed. Without them, the ESA will remain an overcrowded emergency room that receives patients faster than it can discharge them. More important though, is the disparate burden placed on the ESA when other federal and state “upstream” environmental laws fail to achieve their own goals of conserving natural resources and biodiversity. The ESA is frequently relied on to save species when other more flexible laws and methods have failed, often because they have not been complied with or deployed in a timely manner. So to improve the ESA, we must also look beyond the ESA.

## FEDERAL, STATE, TRIBAL, AND PRIVATE CONSERVATION LANDS IN THE CONTINENTAL UNITED STATES



Protected federal, state, tribal and privately held conservation lands provide only a fraction of available wildlife habitat in the United States. To alleviate “the congestion in the ESA emergency room,” government and tribal agencies and private land owners must work together more effectively to increase the amount of land managed for imperiled and at-risk species.

### 3 ACT CAUTIOUSLY BUT ALSO TAKE RESPONSIBLE RISKS

**STRATEGY SUMMARY:** When confronted with scientific uncertainty about how to protect an at-risk or imperiled species from harm, Defenders believes that government agencies should adopt a precautionary approach for the species. Wildlife agencies, however, should be more innovative and take reasonable, responsible risks when experimenting with novel approaches to recovering species. Particularly with innovative recovery strategies, agencies should be prepared to adjust their specific level of risk-tolerance after considering both the possible consequences of failure and the benefits of success.

Decisions on wildlife conservation must often be made with incomplete and imperfect information. Frequently, data on important factors such as species biology and ecological processes are lacking. For example, a mix of science and best professional judgment is used to determine whether to start a prescribed burn of Alabama longleaf pine forests to help endangered tortoises and woodpeckers. Because of this uncertainty, conservation decisions inherently assume some possibility of not achieving their goals.

In addition to making the wrong choice when action is warranted, two other types of mistakes are possible in the face of uncertainty: failing to act when action is warranted and acting when it is unwarranted. Wildlife agencies try to avoid both of these types of errors, but the more they try to avoid the latter, the more likely they are to make the former. This irreducible tension requires agencies to determine their tolerance for making mistakes—in other words, their tolerance for risk.

The level of risk to tolerate is influenced to varying degrees by subjective values and preferences, not by objective science alone. Science tells us how to calculate and quantify risk, but it cannot tell us what the level of risk should be for society's chosen values and preferences. Environmental laws written by policymakers often establish a tolerance for risk, one that presumably reflects the importance and value of the underlying resource to society. The ESA, for example, has been interpreted by some courts as giving imperiled species “the benefit of the doubt” in cases of scientific uncertainty. This section describes our views on risk tolerance for two different types of ESA decisions—protecting species from harmful activities and promoting their recovery.

On the first question of protecting species from harmful activities, Defenders believes that wildlife agencies should exercise precaution when confronted with scientific uncertainty about how to protect at-risk and imperiled species. The level of precaution should increase as the consequences of an error become more severe or significant for the affected species. This makes particular sense in North America where thousands of at-risk and imperiled species have yet to be protected by the ESA or any other federal wildlife law.

On the second question of developing recovery strategies for listed species, wildlife agencies should experiment more with novel approaches to recovery when there is inadequate information to inform the outcomes. Here, as noted previously, there are two primary risks: harming wildlife by taking inappropriate action, or allowing wildlife to be harmed by not taking action at all. This dilemma is perhaps most apparent in conserving wildlife threatened by climate change, a task fraught with uncertainties about factors such as wildlife response to new weather patterns and changing greenhouse gas levels. Although research will improve our understanding of these factors, it will also raise new questions for which no immediate answers exist, such as whether to assist species migration to newly available habitat. Climate change thus unleashes new challenges that require new conservation approaches. The risk of not trying novel approaches can be harmful to wildlife.

Defenders believes that wildlife agencies should thoughtfully experiment with novel approaches as pilot projects and take reasonable and responsible risks when developing recovery strategies for imperiled wildlife—provided there are safeguards to ensure that mistakes are quickly identified and addressed. The specific tolerance level should be decided after comparing the likely consequences of taking novel approaches against not doing so. Where the adverse consequences of getting something wrong are likely to be reversible or small and the projected benefits are significant, agencies should become more risk tolerant than they have traditionally been. Novel approaches are also warranted where the only alternative is a high likelihood of extinction. Thus, wildlife agencies should balance the possible negative consequences of novel approaches against the possible negative consequences of continuing with the status quo. A case in point is the controversial, yet successful, decision many years ago to capture the few remaining California condors from the wild for a captive breeding program.

The benefit of novel approaches could flow not only from on-the-ground initiatives, such as species reintroductions, but also from carefully controlled regulatory experiments. In particular, when dealing with nonfederal



lands or large landscapes, agencies should ask whether, in a given situation, innovative regulatory and policy reforms are needed to better conserve wildlife. If the answer is “yes,” the agencies should recognize that not every experiment or pilot project will succeed. The important point is to operate such initiatives as true experiments, which requires defining what constitutes success in advance, careful and systematic monitoring, and maintaining enough flexibility to change course when mistakes occur or results are disappointing. In other words, a genuine commitment to “adaptive management” must be a key feature of regulatory experiments in order to maximize their benefit and avoid or minimize any harm to the affected species.

In practice, adaptive management often exists only on paper, without a commitment to implementation or is defined so generally as to be meaningless in its application. The periodic evaluation of innovative regulatory programs and timely responses to those evaluations is key to ensuring they benefit listed species. Through these evaluations, wildlife agencies can learn from their mistakes and successes, and improve how they implement the ESA and other natural resource laws. And as agencies become more successful at innovation, less effort may be needed to monitor outcomes over extended periods of time. For example, if a species is clearly on a strong path to recovery and there are no other compelling reasons for continuing a monitoring program, wildlife agencies could spend fewer resources monitoring the species’ population, without diminishing the public’s confidence that recovery is occurring.



COURTESY PHIL ARMITAGE/U.S. FISH AND WILDLIFE SERVICE

The California condor is soaring high again, thanks to the risky and controversial decision to capture the last wild condors and establish a captive breeding program. Today about 130 of the big birds fly free in California, Arizona and Baja California.

## 4 INCREASE TRANSPARENCY AND FLEXIBILITY IN DECISION-MAKING

**STRATEGY SUMMARY:** Defenders values high transparency and consistency in government decisions on imperiled species, particularly decisions concerning values, goals and outcomes. We also encourage conservation advocates and scientists to help agencies find more flexibility in how they implement those values and achieve those goals and strategies.

One area that would benefit from greater transparency is the distinction between value questions and science questions in ESA decision-making. This distinction is easily overlooked because wildlife conservation is strongly rooted in science, which is widely perceived to sanitize decisions with objectivity and rationality. Subjective value judgments, however, are inescapable elements of conservation decisions—ranging from the level of acceptable risk for

recovery actions to the level of mitigation required under an ESA habitat conservation plan.

Wildlife agencies must use their best professional judgment when confronted with scientific uncertainty, but they should also clearly distinguish science judgments from value and policy judgments. To do so, agencies should exercise their professional judgment through a transparent decision-making framework that allows the public to understand the role of both types of decisions.

The need for transparency also extends to establishing conservation goals and standards. Most important are standards for listing and recovering species under the ESA, including consistency in the use of the definitions of “threatened” and “endangered” under the act. To date, either the lack of clear and consistent standards or their inconsistent application has shortchanged many species and sparked controversy.

In addition to transparency, flexibility is another important attribute of implementing the ESA. We believe that agencies should establish transparent and consistent goals, but be more innovative than they have been in deciding how to achieve those goals and in experimenting with thoughtful new approaches to doing so. For example, FWS could specify that biological recovery for a specific species under the ESA reflects a 95 percent chance of persistence over 200 years, and then identify and implement innovative strategies to achieve that goal.

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### CONCLUSION

The four broad strategies for greater effectiveness and efficiency of endangered species policy presented in this white paper are not Defenders’ only strategies, but they are among the most important and reflect our value judgements and priorities. We share them to provide a better understanding of our work and our approach to improving implementation of the ESA, our best tool for shaping the future of wildlife conservation in America.



DESERT TORTOISE RECOVERY OFFICE, U.S. FISH AND WILDLIFE SERVICE

The desert tortoise continues to decline as a result of habitat loss and degradation in the Southwest. The future of this reptile depends on greater government transparency about the impacts of authorized uses of the public lands where it lives.

## DEFENDERS' CONSERVATION VISION

*Defenders of Wildlife believes in the inherent value of wildlife and the natural world, regardless of whether individual species are recognized as having utilitarian or aesthetic value to humankind. We are guided by a conservation vision that defines our success over the long term: Diverse wildlife populations in North America are secure and thriving, sustained by a network of healthy lands and waters.*



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