

Wildlife Management

The future holds great challenges for the nation's water resources. Shifting weather patterns, more damaging floods, and rising water shortages will threaten communities, the economy, and the environment. This chapter is part of a larger report, ***Weathering Change: Policy Reforms That Save Money and Make Communities Safer***, which shows what the federal government must do to help the nation confront these looming challenges.

To see the entire report, visit www.AmericanRivers.org



Introduction:

Fish and wildlife populations are at great risk in a changing climate. Rising temperatures, shifting precipitation patterns, and more extreme weather events present a serious threat to a wide range of species, many of which are poorly equipped to adapt to changing conditions due to existing stresses. Dammed rivers, destruction of forests and wetlands, and water pollution have already put wildlife in danger. Many federal activities contribute to the continued decline of wildlife populations and the habitat on which they rely. While a number of agencies are taking promising steps toward adapting fish and wildlife management to changing conditions, the lack of funding for improving science and carrying out conservation work at the state level is undermining these efforts. Federal agencies need to better coordinate their activities to minimize impacts on wildlife, and Congress needs to provide additional funding to help state and federal wildlife managers develop management approaches consistent with the challenges of a changing climate.



The loss of wetlands, free-flowing rivers, and healthy forests makes it more difficult for wildlife to respond to changing conditions.

I. Today's Policy

A lack of coordination among federal agencies and inadequate funding for wildlife management contribute to the continued decline of many fish and wildlife species.

Continued degradation of fish and wildlife populations: For centuries, fish and wildlife in the U.S. have been subjected to a wide range of threats due to human activity. We have harvested animals at an unsustainable rate, leading to the collapse of fisheries and other populations. We have dumped a dizzying array of pollutants onto the land and into waterways, causing a wide range of diseases and developmental and reproductive problems in wildlife. The destruction and degradation of forests, wetlands, and rivers have undermined critical habitat and been a major cause of decline for many species.

Today, we have corrected some of the worst abuses, but the challenge of maintaining healthy fish and wildlife populations is an ongoing and growing problem. Congress has passed legislation to regulate harvests of certain species, slow the loss of habitat, and reduce water pollution. The Endangered Species Act has worked to nurse vulnerable species back to health. Various federal agencies are dedicated to implementing these laws and reversing the declines in wildlife populations. Despite

these efforts, many fish and wildlife species are still at risk. Freshwater animals are particularly vulnerable. Their rate of extinction throughout North America is five times higher than that of land-based animals.¹ Dams and levees continue to prevent fish and wildlife from migrating to more favorable habitat to find food, spawn, or nest. Development still destroys important landscapes like forests and wetlands and contributes to the loss and fragmentation of habitat at an alarming pace.

Existing federal wildlife protections often fail to sufficiently respond to current threats, let alone provide an adequate response to a changing climate. While some parts of the government work to protect wildlife, other agencies and programs continue the same destructive practices that have undermined plant and animal life in the past. Agencies like the Corps of Engineers continue to permit, construct, and operate infrastructure in ways that destroy habitat and hinder migration. New federally-funded roads break up wildlife habitat into smaller, isolated pieces. Protections such as the Fish and Wildlife Coordination Act (FWCA) and Section 7 of the Endangered Species Act require federal agencies to consider fish and wildlife in decisions about constructing and operating infrastructure. Despite the improvements they

have made, these protections have at times suffered from ineffective implementation. On the Coosa River, for example, the Federal Energy Regulatory Commission has been complicit in downplaying the wildlife consequences of seven hydroelectric dams being considered for relicensing despite their ongoing impacts on numerous endangered species. It remains to be seen whether scientists from the Fish and Wildlife Service (FWS) will insist on a more complete consideration of the threats to endangered species in the basin.

Inadequate funding for wildlife management:

The challenges facing fish and wildlife populations make strong federal stewardship of these resources more important than ever. A number of agencies have begun to examine how climate change impacts wildlife management, but in many cases a lack of funding is endangering progress. In 2009, the Secretary of the Interior, Ken Salazar, issued a secretarial order designed to better integrate climate change impacts into the department's operations and strengthen the science available to fish and wildlife managers.² The order established a network of Landscape Conservation Cooperatives (LCC) to help coordinate the management of natural resources among federal, state, local, and private partners.³ The LCCs will help develop goals and strategies for wildlife management within and across landscapes and provide scientific and technical assistance to inform management decisions. The order also established eight regional Climate Science Centers (CSCs) to provide climate data and management tools to wildlife managers and other partners through the LCCs.

These efforts are a promising step in the right direction. Unfortunately, they are being slowed by a lack of funding. Interior has received funding to start the Climate Science Centers and Landscape Conservation Cooperatives. Three of the eight CSCs have been established and received funding in the FY2010 budget. Each center needs \$4 million annually to operate. Interior announced the selection of two other CSCs they were planning to open in FY2011, but Congress' failure to pass a budget means that the centers have not been formally established. Interior's plan to establish the three remaining CSCs in FY2012 depends on additional congressional appropriations. If funds are not made available, the Department of the Interior will be faced with a choice between operating a smaller number of CSCs and reducing the resources dedi-

cated to each center. Similarly, a subset of the LCCs has opened, and additional funding is needed to allow the entire system to operate at full capacity. Ongoing uncertainty over the federal budget could put these vital new resources at risk and reduce their ability to produce the data needed to plan effective conservation strategies.

There are also critical funding shortfalls for the implementation of conservation projects. Fish and wildlife management takes place primarily at the state level through state wildlife agencies. Historically most conservation funding has been used to benefit species that are important for hunting and fishing and has neglected the remaining 90 percent of species. As a result, many have experienced continued declines due to development and other human activities. In 2000, Congress took steps to address this problem by establishing the State Wildlife Grant Program, which has since provided over \$600 million to state fish and wildlife agencies for the protection and restoration of non-game species most in need of conservation.⁴ While it is difficult to pinpoint how much funding is needed to protect fish and wildlife populations from existing threats — let alone the additional stress from climate change — it is clear that current levels fall woefully short of what is needed. A 1998 report found that funding for non-game species totaled \$135 million annually, compared to an estimated need of over \$1 billion.⁵ A more recent study estimated it would cost \$350 billion to establish a comprehensive national habitat conservation system.⁶

II. Risks and Consequences

Despite the considerable challenges that fish and wildlife have faced in the past due to human activities, the greatest threat may still lie ahead. Climate change has a wide range of implications for wildlife from the immediate and acute to the long-term.⁷ More extreme floods, droughts, and heat waves can kill, injure, or weaken fish and wildlife. Severe storms can also degrade water quality by washing sediment, nutrients, and other pollutants from the landscape, with negative consequences for aquatic species. Long-term shifts in temperature and precipitation will change when and where food is available and force many species to migrate to areas that are suited to their needs. Warmer water will reduce habitat for cold water fish such as trout and salmon.

While plants and animals have adapted to changing conditions in the past, there are two factors working against them at present. First, the rate of climatic change is expected to be very rapid, which will leave less time for species to adjust to changing conditions. Rapid shifts in climate have historically been linked to mass extinctions.⁸ Human activity is another major barrier to effective adaptation for fish and wildlife. The cities, highways, dams, levees, and other infrastructure that divide the American landscape will prevent wildlife from moving to more favorable habitat. The loss of natural landscapes and persistent pollution problems have also weakened many species and made them less able to respond to additional stresses from climate change.

These changes fundamentally question many assumptions about how we build our communities, use water, and manage the environment. Continuing to destroy forests and wetlands, build barriers to migration, and use water unsustainably will leave wildlife with little capacity to adjust to changing climate conditions. However, we cannot simply try to restore the environment to earlier conditions, because baseline conditions will be fundamentally different. Failure to adopt management approaches that account for climate change impacts could result in the waste of scarce resources and continued decline of vulnerable wildlife populations.

III. Preparing for the Future

Improved coordination of federal activities and larger investments in state and federal wildlife management can reduce waste and better prepare people and wildlife for a changing climate.

Improve federal protections of fish and wildlife:

While the threat to fish and wildlife is daunting, there are many things we can do in the near term to correct the mistakes of the past and reduce the severity of the consequences from a changing climate.



Better planning and increased funding can protect wildlife from many threats.

First, we must address the federal activities that are currently undermining fish and wildlife and making them more vulnerable to climate change. Virtually all of the policy recommendations from the other chapters of this report will help reduce the impact of federal activities on the environment, especially the sections on revising the Principles and Guidelines for federal water infrastructure projects (Water Resources Development Policy chapter), strengthening protections of U.S. waters (Clean Water Act chapter), and reducing the impacts of transportation infrastructure (Transportation Policy chapter). Many of these proposed changes can help both people and wildlife adjust to shifting conditions. Agencies can also improve coordination to ensure that they are not working at cross purposes. Agencies that permit, construct, and operate infrastructure projects should better incorporate the recommendations of FWS and the National Marine Fisheries Service, which they are required to consult on certain projects under the Fish and Wildlife Coordination Act and Section 7 of the Endangered Species Act. All agencies should rigorously apply the requirements of these laws and ensure that their intent of minimizing impacts on wildlife is met.

There are some promising steps in this direction already. An interagency group is developing a national fish and wildlife adaptation strategy. They are focusing not only on improving the use of resources in wildlife-focused programs but also how interagency cooperation can ensure that a broader segment of the federal government can adopt approaches that strengthen fish and wildlife populations. This type of coordinated approach is essential to ensuring healthy and resilient wildlife that can withstand the impacts of climate change.

Invest in and adapt fish and wildlife management:

Federal agencies focused on fish and wildlife management must adapt to changing conditions and be given the necessary resources to carry out their work. Improving habitat connectivity is among the most important efforts. Removing dams and creating migration corridors will provide avenues for species to migrate to cooler regions as temperatures rise. Protecting the most pristine remaining landscapes will create refugia for species and maintain biodiversity. Fortunately, a number of agencies are already embracing these approaches and planning for changing conditions. The bureaus and offices in the Department of Interior are creating plans to adapt their activities and operations to the shift

ing baseline as a result of climate change. The Fish and Wildlife Service, for example, has developed a comprehensive plan for changing its operations to prepare for the impacts of climate change and is using this framework to direct and prioritize conservation actions.⁹

In order to truly address the threat to fish and wildlife, however, additional resources are needed. Congress must appropriate sufficient funds to meet the enormity of the challenges facing the nation's fish and wildlife populations. Legislators should first strengthen the foundation for sound wildlife management by increasing funding for the Landscape Conservation Cooperatives and regional Climate Science Centers. These institutions will allow wildlife managers to undertake coordinated and proactive efforts to strengthen the resilience of wildlife populations and set goals to improve their health in a changing climate. Congress should appropriate sufficient funds for these centers to start operating at full capacity within the next three years. The Climate Science Centers should receive annual appropriations of \$34 million in FY 2012, \$4 million for each regional center and \$2 million for the national center. Congress should also ensure that fish and wildlife managers have resources to carry out projects on the ground. Congress should maintain funding for the State Wildlife Grants at \$90 million for the FY2012 budget. This is a fraction of the needed funding, but it is a significant federal commitment that can help continue critical programs already in place.

While the efforts discussed above form the core of an effective strategy to preserve fish and wildlife in a changing climate, a number of other programs offer similar promise and should be part of a comprehensive wildlife adaptation strategy. The National Wildlife Refuge System (NWRS) is a crucial lifeline that will provide increasingly vital habitat as conditions shift. The system is comprised of 150 million acres of land and provides some of the highest quality wildlife habitat in the nation. However, effective management of these lands is hampered by a \$3.7 billion operations and maintenance backlog.¹⁰ Parts of the system are being overrun with non-native species or suffering from wildlife poaching and other illegal activities. Congress should commit to correcting these problems and maintaining these high quality habitats by bringing the system's budget closer to

the \$900 million that is needed annually to operate the reserve system.¹¹ There is also an opportunity to use existing NWRS resources more efficiently. The Conte National Wildlife Refuge is a promising model that uses a unique mix of strategies to involve private land owners and protect natural resources throughout the 7.2 million acre Connecticut River Watershed. This approach could be used in other areas to cost-effectively reduce stress on fish and wildlife even in more developed basins.

Finally, the Open Rivers Initiative, which funds removal of aging dams, is an effective tool to facilitate migratory corridors. The nation's rivers are plugged with millions of dams, many of which no longer provide the benefits for which they were built. Removing these structures helps fish species migrate to cooler waters as temperatures rise and also opens corridors for land-based wildlife to move between ecosystems. Congress should appropriate \$20 million annually for the Open Rivers Initiative split between the Community Based Restoration Center and the Fish and Wildlife Service's Fish Passage Program.¹²

IV. Benefits of Being Prepared

For too long, we have wasted taxpayer money on programs that work at cross purposes. Investments in fish and wildlife protection have been outweighed by infrastructure construction and permitting decisions that have destroyed and fragmented vital habitat. By addressing the federal programs that most seriously undermine fish and wildlife, we can save money and make wildlife less vulnerable to the impacts of a changing climate. At the same time, incorporating climate change into wildlife management will help ensure that we're not investing in efforts that will be ineffective as conditions shift. By embracing more proactive policies, we can avoid costly efforts to save species once they are endangered.

These reforms will also have large benefits for people. Protecting wetlands and floodplains will help maintain water quality and prevent downstream flooding. Clean water and healthy ecosystems are essential inputs to economic activity throughout the U.S. Protecting and restoring these systems will help ensure long-term economic growth and prepare people and wildlife for a more volatile and uncertain future. ■



Dam removal allows fish and wildlife to migrate to more suitable habitat and can eliminate safety hazards for communities.

FOOTNOTES

- 1 Ricciardi, A. and Rasmussen, J. Extinction rates of North American freshwater fauna. *Conservation Biology* 13, 1220-1222 (1999).
- 2 U.S. Department of the Interior. *Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources*. (DOI, Secretarial Order No. 3289, February 22, 2010).
- 3 U.S. Department of the Interior. *Interior's Plan for a Coordinated, Science-Based Response to Climate Change Impacts on Our Land, Water, and Wildlife Resources* (DOI, 2010).
- 4 Teaming with Wildlife. *Celebrating 10 Years of Funding to Conserve Imperiled Fish and Wildlife* (September 5, 2010).
- 5 Richie, D., and Holmes, J. *State Wildlife Diversity Program Funding: A 1998 Survey* (International Association of Fish and Wildlife Agencies, 1999).
- 6 Casey, F. et al. *The Cost of a Comprehensive National Wildlife Conservation System: A Project Completion Report for the Wildlife Habitat Policy Research Program* (Defenders of Wildlife, 2008).
- 7 U.S. Climate Change Science Program. *The Effects of Climate Change on Agriculture, Land Resources, Water Resources, and Biodiversity in the United States* (CCSP, 2008).
- 8 Noss, R.F. Beyond Kyoto: forest management in a time of rapid climate change. *Conservation Science* 15, 578-590 (2001).
- 9 U.S. Fish and Wildlife Service. *Rising to the Urgent Challenge: Strategic Plan for Responding to Accelerating Climate Change* (USFWS, 2010).
- 10 Cooperative Alliance for Refuge Management. *Restoring America's Wildlife Refuge's 2010: Maintaining Momentum to Solve the Refuge System Funding Crisis* (2010).
- 11 *Ibid*
- 12 American Rivers. *River Budget: National Priorities for Local River Conservation Fiscal Year 2010* (2009).