ACCOUNTING FOR SPECIES

The True Costs of the Endangered Species Act

BY

Randy T. Simmons

AND

Kimberly Frost

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Executive Summary

A rational public dialogue about the value and effectiveness of the Endangered Species Act (ESA) must consider the costs incurred by the regulators and those being regulated. The U.S. Fish and Wildlife Service's report *Three-Year Summary of Federal and State Endangered Species Expenditures, Fiscal Years 1998-2000* (U.S. Fish and Wildlife Service [FWS] 2003b) identifies some federal and state costs, but anyone wishing to understand the true costs of the ESA must look beyond it. The report understates government expenditures and does not include economywide losses.

An extensive analysis of the FWS report was undertaken to determine whether the report provides comprehensive and accurate information on ESA costs—data that can be relied upon by members of Congress, policymakers, the media and the public in general. Unfortunately, a review of the study reveals that the FWS report does not come close to accounting for the costs to taxpayers and to the private sector of complying with the ESA. Our analysis concludes that a more accurate figure for the annual ESA costs would place those costs in billions, not millions, of dollars.

Limitations and Inaccuracies

The following limitations and inaccuracies of the Fish and Wildlife Service report were found:

- While the FWS reports that the estimated expenditures on endangered species protection for fiscal year 2000 totaled $610.3 million, the actual government costs are probably four times that estimate. From 1989 to 2000, the FWS estimates that a little over 3.5 billion of taxpayer dollars was spent on ESA-related activities. We recognize today that the actual cost of protecting species, including private costs as well as government expenditures, may easily reach or exceed that figure *per year.*

- Not all of the appropriate federal agencies and departments reported ESA-related expenditures, even though many agencies are involved in implementing the ESA and are incurring costs. For example, the only estimates provided by the Department of Energy are from the Bonneville Power Administration. None of the other power administrations—Southeastern, Southwestern, Western Area—submitted estimates. Yet we know there are ESA-listed species throughout these regions.

- The federal government underreports ESA costs because it only collects estimates of what it has spent on ESA implementation. We know that actual federal expenditures are far greater than these estimated costs. For example, based on a House Resources Committee report, our analysis shows that the *actual* costs of *just five* of the twenty agencies reporting exceed $1.2 billion per year.

- Other costs absorbed by state and local governments and private parties are not reported at all. These costs are in the billions of dollars for the period during which the property remains under regulation.

Why the Reported Costs are Incomplete and Inaccurate

The Fish and Wildlife Service omits critical information in its cost report. A list of key omissions follows:

Costs Not Reported

- **ESA implementation costs that benefit multiple species**

  We know, for example, that the FWS's general budget contains $70.9 million for fish conservation per year, but the FWS ESA report does not quantify how much of the money is spent on endangered fish.

- **ESA implementation administrative costs and ESA implementation costs that are incurred abroad**

  The annual budget of the Fish and Wildlife Service identifies $8.6 million for international wildlife trade and international conservation per year, and some of this taxpayer money is spent on ESA-listed species.

- **Government-wide costs**

  Only a handful of the many federal agencies and departments affected by the ESA reported expenditures to the FWS.

- **Actual costs to taxpayers**

  Only estimates are provided.

- **Costs to taxpayers of litigating ESA cases**

- **Costs to state and local entities of implementing species recovery**

  Since there are no standardized or required reporting procedures, only those state and local expenditures voluntarily reported are estimated in the report. Many other state and local expenditures remain unaccounted for. For example, in San Diego County,

California, implementing ESA recovery strategies through a single countywide Habitat Conservation Plan (HCP) will impose an estimated $650 million in costs to state, local, and private entities for the period the property remains under regulation. Yet such costs are not included in the FWS cost report.

- **Additional costs to local governments from ESA-caused interference with building schools, hospitals, roads, and other infrastructure projects**

  On a $55 million high school in Vista Murrieta, California, for example, an ESA-caused delay of one year cost over $1 million.

- **Economic impacts relating to FWS regulation of 38 million acres of private land through conservation plans**

  Seventy-five percent of all listed species have portions or all of their habitat on private lands, and landowners are not compensated for their losses from ESA regulations. The economic costs of designating critical habitat just for the coastal California gnatcatcher will average $300 million per year.

- **Private costs such as development projects being denied, delayed, or their scope reduced**

  Previously approved developments are denied building permits or substantially modified because of endangered species.

- **Social costs from regulatory burdens placed on agricultural production, water use, forest management, mineral extraction, and recreation**

  Farmers in the Klamath Basin of Oregon, for example, lost an estimated $53.9 million of crop value in 2001 when their irrigation was cut off to protect endangered fish, the Lost River and shortnose sucker and Klamath coho salmon. Yet costs of this kind are not included in the FWS report.

- **Overall financial costs to society when people lose their jobs or have to pay higher prices for necessities**

  According to the U.S. House of Representatives Subcommittee on Forests and Forest Health, at least 130,000 jobs have been lost and more than 900 sawmills, pulp and paper mills and other forest products facilities have been closed since mid-1990—all due to protection of the northern spotted owl.

- **Costs of reduced or terminated business activities and jobs; increased costs to provide services; reduced tax revenues from reduced or terminated business income, personal income, or property devaluation; and costs of public assistance provided to individuals who lose jobs**

  In just one year, ESA-mandated water reductions in the Westlands Water District cost the California economy more than $218 million and 4,500 jobs statewide while the federal government lost about $2.3 million in revenue.

Important Conclusions Flowing from This Analysis

- The costs of implementing the Endangered Species Act are far larger than the government leads its citizens to believe.

- The Endangered Species Act may be a waste of taxpayer dollars since only a few species benefit from the government's expenditures. Fifty percent of reported expenditures are for seven species, just 0.6 percent of the ESA list.

- Reporting inadequacies will continue as long as the current collection methodology remains in place.

PERC, the Property and Environment Research Center, is a nonprofit institute dedicated to improving environmental quality through property rights and markets. Founded in 1980, PERC conducts research on a wide variety of fields such as water, forestry, public lands, pollution control, and endangered species.

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Introduction

In December 2003 the federal Endangered Species Act (ESA)[1] turned thirty. Shortly thereafter, the U.S. Fish and Wildlife Service (FWS) published the most comprehensive report to date on expenditures related to the act, *Three-Year Summary of Federal and State Endangered Species Expenditures, Fiscal Years 1998-2000*.[2] This report, which combines annual reports for the years 1998, 1999, and 2000, covers certain expenditures for the conservation of threatened and endangered species over the three-year period. Although the FWS report improves on previous expenditure reports, it in no way represents the true costs of implementing the ESA. In addition, the failure of the agency to produce the report for three years, along with the evident underreporting, raises doubts about the credibility of the effort. If the FWS is unable or unwilling to meet the requirements of the law, the three-year report may be little more than a bureaucratic effort to keep Congress minimally happy.

This paper attempts to identify many of the direct federal governmental costs of endangered species that are left out of the report and explains why the Fish and Wildlife Service accounting must be considered incomplete. This analysis also identifies additional costs, absorbed by state and local governments and private individuals, that are not accounted for in the FWS report. Finally, this report suggests that, based on FWS's own figures and evidence accumulated from various sources, the true annual expenditures of ESA implementation by federal, state, and local governments are in the billions of dollars rather than the millions. When the full cost impacts on private individuals and public bodies are considered, the costs are magnified even further.

About PERC

Randy T. Simmons, the lead author of this analysis, is a senior associate of PERC, the Property and Environment Research Center, in Bozeman, Montana. PERC is a nonprofit research institute dedicated to improving environmental quality through property rights and markets. It is recognized as the leading research organization in the United States applying property rights to environmental issues. Over the years, its associates have studied the Endangered Species Act and its implementation. Simmons, a professor of political science at Utah State University, has published a number of articles on the Endangered Species Act, including a two-part series in *Independent Review*, and has written a book for young adults on the topic.

Kimberly Frost is a graduate student and research assistant at Utah State University. Frost has conducted writing and research for the Institute for Justice, an organization that supports private property rights and individual liberties. Her studies emphasize natural resource issues and the environment.

Methodology

Gaining a complete picture of the government's ESA costs would require two kinds of coordinated audits. One audit would be a program audit that identified the various government programs that spend money to implement the Endangered Species Act and evaluated their effectiveness. The second audit would scrutinize those programs' expenditures. These kinds of audits have not been conducted at the national or state levels. Instead, we have estimates of varying quality.

In addition to an absence of data on government programs, there is no formal collection of data on ESA-related costs experienced by the private sector. And, unlike the environmental impact statement process that identifies

potential environmental costs of proposed actions, there is no analogous system for identifying potential economic costs from proposed rules or decisions.

Given currently available data, therefore, it is not possible to quantify all the costs of the Endangered Species Act. In most cases in this paper we have relied on examples to demonstrate potential costs. Where careful studies exist, we cite them. Otherwise, this study relies primarily on congressional hearings, studies of individual cases, and court cases. Our purpose is to identify potential costs and suggest their magnitude.

The FWS Report: A Snapshot

In 1988, Congress enacted Section 18 of the Endangered Species Act of 1973. This section requires the U.S. Fish and Wildlife Service to compile and publish an annual report on expenditures "reasonably identifiable" for endangered species in each fiscal year by all federal agencies and those states receiving grants under Section 6 of the Act. As of February 2004, there were 1,260 species in the United States listed as threatened or endangered (FWS 2004).

The latest FWS report covers ESA expenditures by 20 different federal agencies, as well as grants to the states. Total reported spending by year since 1989 is listed in Table 1. From 1989 to 2000, the FWS report estimates that a little over 3.5 billion of taxpayer dollars was spent on ESA-related activities.

Table 1
Reported Expenditures on ESA Species
(millions of dollars)

Year	Reported Expenditures	Year	Reported Expenditures
1989	$ 43.7	1995	$ 297.6
1990	102.3	1996	285.7
1991	176.8	1997	300.9
1992	291.5	1998	454.3
1993	222.2	1999	514.1
1994	244.6	2000	610.3

Source: FWS (2003b, 2).

Expenditures on species show a clear bias toward popular (sometimes called charismatic) species—species that are threatened or endangered and whose condition many Americans care about. According to the latest official figures, salmon—a favorite of sportsmen, for example—are clearly the winners in expenditures. Fifty percent of the total reported expenditures in 2000 are for the top seven species, just 0.6 percent of the ESA list (Table 2). Ninety percent of expenditures, or $471.9 million, are for 91 species, just 7.4 percent of the ESA list.[3]

Table 2
Most Expensive Species

2000 Rank	Species	Status	Total ($000s)	1999 Rank
1	Salmon, chinook	Endangered, Threatened	$ 87,644.2	1
2	Steelhead	Endangered, Threatened	61,319.3	2
3	Salmon, coho	Threatened	50,324.4	3
4	Salmon, sockeye	Endangered, Threatened	21,388.2	5
5	Salmon, chum	Threatened	20,157.4	4
6	Sea-lion, Steller	Endangered, Threatened	13,112.7	9
7	Woodpecker, red-cockaded	Endangered	11,800.5	6
8	Trout, bull	Threatened	11,419.4	7
9	Sparrow, Cape Sable seaside	Endangered, Threatened	10,161.5	104
10	Manatee, West Indian	Endangered, Threatened	9,743.4	23

Source: FWS (2003a, 47).

The FWS Report Underreports Taxpayers' Costs

A review of the FWS report makes clear that the expenditures listed substantially understate actual federal government expenditures for ESA implementation. The following are the chief reasons:

Administration

Section 18 of the Endangered Species Act only requires the reporting of those amounts that are "reasonably identifiable" for listed individual species. Yet reporting expenditures on a species-by-species basis, as the report does, generates a myriad of accounting problems. Expenses such as staff salaries, operations, maintenance, and other services that are clearly costs associated

with the ESA are not reported by the agencies, as they generally cannot be attributed to the conservation of a specific species. Thus, none of these expenses are identified, even though we know they are occurring.

Breadth of Agencies/Departments Reporting

The report contains data for just nineteen federal agencies besides the FWS, even though many other agencies have significant ESA expenditures.[4] The only estimates provided by the Department of Energy are from the Bonneville Power Administration. None of the other Power Administrations—Southeastern, Southwestern, or Western Area—submitted estimates. Yet we know there are ESA-listed species throughout these regions. In 2002, for example, the Western Area Power Administration (WAPA) introduced juvenile fish into the Missouri River pallid sturgeon population. The pallid sturgeon is listed as an endangered species. For 2003, WAPA committed financial and technical support to the Upper Colorado River Endangered Species Recovery Program (U.S. Environmental Protection Agency [EPA] 2004).

In the Department of the Interior, the Minerals Management Service did not report expenditures, and the Office of Surface Mining reported no "reasonably identifiable" expenditures, although they too have ESA-related responsibilities (FWS 2003b). Agencies reporting from the U.S. Department of Agriculture were the Animal and Plant Health Inspection Service, the Forest Service, and the Natural Resources Conservation Service. That leaves out the Farm Service Agency, Foreign Agricultural Service, the Risk Management Agency, Rural Development, and many others whose programs are affected by the ESA. The EPA report does not identify which EPA departments reported expenditure data and which did not.

Multiple and Foreign Species

The report does not account for efforts that benefit multiple species. In 1998, for example, the total budget for fish protection programs under the FWS was $70,950,000. Many of these programs directly benefit endangered and threatened fish, but changes in FWS budgeting make it difficult or impossible to identify how much was spent on endangered and threatened fish as opposed to all other fish.

The report does not include taxpayer dollars spent on protecting species found in foreign countries. The FWS lists 517 foreign endangered species and 41 foreign threatened species. They range from African elephants and crocodiles to Australian rat-kangaroos and the Corsican swallowtail butterfly. Tax-

payer dollars are spent in enforcing rules against international trade in endangered species, funding foreign wildlife law enforcement agencies, collaborating in habitat conservation and joint research projects, and assisting in developing international management strategies. The Fish and Wildlife Service's 2005 budget request for programs in international wildlife trade and international conservation totals $8.6 million (U.S. Department of the Interior 2004). Yet these expenditures are not included in the report.

Estimated v. Actual Expenditures

Even though the ESA calls for reporting of "expenditures reasonably identifiable," the information presented in the 1998–2000 report does not reflect the *actual* federal government effort toward conserving threatened and endangered species in the United States. This is because federal agencies involved in endangered species recovery are requested to estimate expenditures, and each agency is responsible for its own method of reporting. The Secretary of the Interior has not standardized reporting methods. (Due to these discrepancies in reporting methods, the report specifically cautions the reader against making comparisons with other reports.)

Additionally, a significant portion of conservation activities includes law enforcement, consultation, recovery coordination, litigation (including Department of Justice enforcement litigation), and other activities that are not easily or reasonably identified for a specific species. Yet we know for a fact that the federal government is spending significant money on these activities. In sum, the data in the report cannot accurately reflect the total cost of conserving listed species.

Other Sources Confirm Underreporting

In 1996, the U.S. House of Representatives Committee on Resources conducted a hearing to examine the costs to various federal agencies of implementing the requirements of the ESA. Out of the twenty-two federal agencies with budgets explicitly containing endangered species expenditures, only five testified. These five agencies testified that their combined costs for fiscal year 1996 would reach at least $560 million. This testimony, if accurate, confirms suspicions that the FWS's efforts to quantify ESA costs grossly underestimates them. When the FWS prepared its 1996 report (see Table 1, page 3), it claimed that total spending for *all agencies and states* was *just $285.7 million*. That amount is about half of what the *five agencies alone* claimed their 1996 costs would be in congressional testimony.

This raises additional doubts about the 2000 figures. The five agencies reporting to the Committee on Resources were the Fish and Wildlife Service, two agencies from the Department of Defense (Environmental Security and the Army Corps of Engineers), the National Oceanographic and Atmospheric Administration of the Department of Commerce, and the Bonneville Power Administration, part of the Department of Energy. *Not testifying at the hearing were many agencies that face high-dollar ESA costs*, such as the Federal Highway Administration, Federal Aviation Administration, U.S. Department of Agriculture agencies including the Forest Service, and agencies from the Department of Interior other than the FWS. Notably, expenditures by the Bureau of Land Management, Bureau of Reclamation, and the National Park Service were not included in the $560 million figure.

If we assume that the amount reported to the House Resources Committee was a good faith effort (under oath) to accurately account for the ESA costs by five agencies, we can conclude that the reported expenditures in the most recent FWS report do not reflect actual expenditures. If the relationship with the 1996 report holds true in 2000 (that is, if the five agencies' figures are again approximately twice the FWS estimates), then the reported expenditures of $610 million are no more than half of what was actually spent (see Table 1, page 3). Thus, a more accurate estimate would be at least $1.2 billion. And recall that only one-fourth of the 20 federal agencies that reported costs for 2000 relating to ESA implementation testified before the Resources Committee. Thus, the numbers reported from the committee represent just a fraction of the true costs. Conceivably, the total cost could be four times the $610 million, or $2.4 billion in 2000.

An additional source confirming that the latest FWS report underestimates ESA costs is a General Accounting Office (GAO) study that quantified federal expenditures to preserve salmon on the Columbia and Snake River basins in Oregon, Washington, and Idaho. The report stated that $1.505 billion in taxpayer dollars was spent between 1997 and 2001, or about $301 million per year on construction projects, research studies, monitoring projects, monitoring actions, surveying spawning grounds, and ESA-required consultations (GAO 2002, 4). Clay Landry of WestWater Research, conducting an independent study for PERC, communicated directly with the departments and agencies involved in salmon recovery and found that the costs were much higher than reported by the GAO—$2.879 billion over five years, or $575.5 million per year (Landry 2003). Thus, the reported GAO numbers were about half of what PERC found them to be.

But even if one accepts the GAO numbers as accurate, it becomes obvious that the expenditure estimates provided by the FWS in its ESA cost re-

ports for the years 1997 through 2000 cannot be accurate since the expenditures just on salmon preservation efforts alone total more than the amount that the FWS claims was spent on *all ESA-listed species* in 1997, 1998, and 1999, and close to all that was spent on *all ESA-listed species* in 2000.

Evidence from studies conducted by the House of Representatives, the GAO, and PERC show that the FWS cost report grossly understates the amount of taxpayer dollars spent on ESA implementation. This calls into serious question the value of the FWS report.

The FWS Report Excludes Many Costs

The FWS report is an attempt to comply with Section 18 of the Endangered Species Act, which requires the FWS to provide to Congress an annual report on the cost of implementing the ESA. The law requires that the report include amounts which are "reasonably identifiable" as expenditures by federal agencies or states receiving federal grants made primarily for the conservation of endangered or threatened species. According to the notes of the committee that drafted the Section 18 language, "[t]he purpose of this amendment is to provide Congress and the public with better information about the expenditure of funds *that are appropriated* for conservation of endangered and threatened species."[5] Because the FWS report only deals with appropriated federal dollars, these expenditures represent only a portion, and possibly a small portion, of the regulatory costs imposed under the ESA. State and local governments play an important role in ESA implementation, and incur taxpayer dollars in the process.

State and Local Governments' Costs Not Reported

Although the FWS report provides expenditures for conservation efforts on a species-by-species basis on the federal and state level, reporting by the states is voluntary. Their information was collected through the International Association of Fish and Wildlife Agencies, and FWS did not attempt to verify it (FWS 2003a). Thus, it is highly unlikely that the $115 million the states voluntarily reported spending in 2000 is a complete account of the ESA costs actually incurred by the states.

State and local governments are responsible for much of the implementation of the Endangered Species Act. An example is the State of Washington Department of Transportation Endangered Species Act Training Program. The department is developing and implementing a program to train local

agencies on how to conduct maintenance activities in compliance with ESA rulings on salmon. Rigorous rules must be followed in transportation activities, and compliance requires specific training. According to the University of Washington, these costs are nearly $300,000 per year.[6] While such costs may be individually small, they add up, further casting doubt on the FWS's total. Costs of this kind are not even aggregated in the FWS report because they are not "reasonably identifiable" to a specific species.

In addition, many local governments have taken it upon themselves to implement recovery plans independent of federal and state governments. This allows local governments to have more control. Five counties in southwestern Washington, for example, are developing a recovery plan for Columbia River salmon. The plan is specifically designed to allow the counties to manage the process rather than the federal government. The estimated cost of the plan is $2.6 million, of which $1.6 million will come from the federal government (the Bonneville Power Authority). That leaves $1 million that is being spent by the state and counties.[7] This kind of expenditure by local entities, however, is not included in the FWS report.

Finally, many counties and cities are developing regional habitat protection plans, known as Habitat Conservation Plans, to deal with the land management dilemmas posed by having an ESA-listed species within their political boundaries. Habitat Conservation Plans (HCPs) are one way for landowners and managers to develop land that contains habitat for ESA-listed species without running afoul of the Act. Yet costs of developing these plans are not captured by the FWS cost report because states' voluntary reports usually do not include the more localized information. And as illustrated below, these costs run into the millions over extended periods of time. The following estimates of HCP costs (which may include state, local, and private costs) were provided by the Committee on Resources (1998).

- The San Diego Habitat Conservation Plan (HCP) has been estimated to cost $650 million.

- The Riverside County, California, HCP for the Stephens kangaroo rat has been estimated to have cost $45 million.

- The Balcones Canyonlands Conservation Plan (an HCP) in Travis County, Texas, has been estimated to cost $160 million.

These expenditures would be carried out over a number of years, but the annual cost to local taxpayers for each one will be in the millions of dollars.

Private Landowners' Costs

It has been shown that the FWS report underreports governmental costs attributable to the ESA. But private landowners pay a great cost to implement the act, and these costs are not captured in the FWS report. Seventy-five percent of all listed species have portions or all of their habitat on private lands, and landowners are not compensated for their losses from ESA regulations (USDA 2004). Extensive evidence has revealed that these figures are substantial.

Under Section 9 of the ESA, landowners can be prosecuted, fined, jailed, and ordered to pay restitution if they "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in such conduct." The Fish and Wildlife Service further defines "harm" to include adversely modifying endangered or threatened species habitat.[8] In many cases, this means that property owners are unable to develop their property. As U.S. Supreme Court Justice Antonin Scalia argued in a 1995 dissent, the current interpretation of the law "imposes unfairness to the point of financial ruin—not just upon the rich, but upon the simplest farmer who finds his land conscripted to national zoological use" (*Babbitt v. Sweet Home* 1995). In some cases, this means that owners cannot manage the resources on their property, construct buildings on their property, or even farm.

The other section that regulates private property is Section 7. In Section 7, the law requires federal agencies to consult with the Fish and Wildlife Service to ensure that the actions they authorize, fund, or carry out will not jeopardize listed species. Here, too, private activities that require federal consultation on private lands may be prohibited. These could include crossing a stream, obtaining road permits, burying utility cables, taking actions that affect wetlands, and so on. The FWS states that it is "a very rare exception where projects are withdrawn or terminated because of jeopardy to a listed species."[9] The reason that most projects eventually go forward is that the FWS makes a deal with the landowner that allows the project to move ahead in exchange for a part of the property or for other cash expenditures required by the FWS. But during the negotiations, all progress on the development is stopped, something that is very costly for developers. None of the costs of these delays are reported by the FWS.

Two recent studies of the private costs created under the ESA examine the economic costs of critical habitat designation for the coastal California gnatcatcher and for various species found in California vernal pools (see Sunding 2003; Sunding, Swoboda, and Zilberman 2003). (Critical habitat is land set aside to protect one or more endangered or threatened species;

vernal pools are seasonal pools of water.) The studies indicate that those most affected by these designations are California consumers, with developers, landowners and others suffering losses as well (Sunding, Swoboda, and Zilberman 2003).

The studies consider three types of impacts from designating critical habitat—out-of-pocket expenses to the developer, delays in completing a project, and reduced output from the project. The studies translate these impacts into regional market effects. The gnatcatcher study shows that the aggregate economic impact from 2003 to 2020 of designating critical habitat for the gnatcatcher will be between $4.6 and $5.1 billion, in current dollars. That equals about $300 million per year.[10]

The vernal pool study concludes that the economic impacts of critical habitat designation are disproportionately borne by consumers, "especially those on the lowest end of the housing affordability spectrum" (Sunding, Swoboda, and Zilberman 2003). Consumers also pay because of reductions in the size of the regional housing stock, changes in the configuration of cities, delayed projects, and increased commute times. None of these costs are captured in the FWS report.

Many other impacts on landowners go unreported. For example, Margaret Rector owned land near Austin, Texas, that she hoped to build on for her retirement. However, when she was eighty years old, the FWS declared her land to be critical habitat for the golden-cheeked warbler, an endangered bird. The value of her 15 acres plummeted from nearly $1 million to $30,000 (Committee on Resources 1995, 106).

Also near Austin, Fred Purcell, his brother, and other investors tried to develop 216 acres. After they spent several million dollars installing water and sewer lines, electrical supply systems, and other improvements, the FWS listed as endangered five species that lived in several caves on part of their property. The Purcells did everything they could to protect the species—they donated 10 acres, six caves, and several sinkholes to a nonprofit agency in 1990. They gated and fenced the caves. But in March 2003, a federal district court declared that the endangered species trumped the Purcells' property rights and investments in the property. Neither the Purcells' improvement investments nor the cost of the lost opportunity to develop their property are captured by the FWS report.

Habitat Conservation Plans

As discussed above, Habitat Conservation Plans (HCPs) are developed by landowners/managers and the FWS to allow for the use of lands (or a portion

of their lands) while also conserving listed species. Upon approval of an HCP, the Fish and Wildlife Service issues incidental take permits that allow landowners to incidentally harm or "take" species.

The FWS now regulates 38 million acres of land—an area larger than the size of Florida—as HCPs. HCPs are costly, as the figures listed above (see page 9) for Riverside County (California) and Travis County (Texas) indicate. Although a private landowner (usually a large one because of the costs of consultation and planning) can develop an HCP, the agreement does not include any compensation for the land set aside from development or for the time and effort that go into designing and maintaining such a plan. Thus, no privately-owned land costs for HCPs show up in reported expenditures.[11]

A Clinton administration rule called "No Surprises" was issued in 1994 and could encourage far more private land to be included in HCPs (FWS and National Marine Fisheries Service 1994). The "No Surprises" rule provides that no additional land-use restrictions or financial compensation will be required of an incidental take permit holder, even if the HCP were to become insufficient to protect the species sometime in the future. This rule is now under review because of a court ruling and may be discarded (see *Spirit of the Sage v. Norton* 2003). In the meantime FWS regional directors may continue issuing, renewing, or transferring permits with the "No Surprises" assurances (U.S. Department of Interior and Fish and Wildlife Service 2004). If fully implemented, the "No Surprises" rule will result in more HCPs being developed for private lands, and more money being spent on developing the plans.

Broader Impacts beyond Landowners

By curtailing activities on some land and by forcing people to make expensive changes on others, the ESA has ripple effects. A former senior economist of the Council of Economic Advisors identified some of the opportunity costs—the opportunities given up—stemming from ESA implementation:

> Opportunity costs include the reduced economic profit from restricted or altered development projects including agriculture production, timber harvesting, minerals extraction, and recreation activities; wages lost by displaced workers who remain unemployed or who are reemployed at lower pay; lower consumer surplus due to higher prices; and lower county property and severance tax revenue. (Shogren 1997)

There are no national estimates of these opportunity costs but calculations have been made for some regional conflicts. For example, farmers in the

Klamath Basin of Oregon lost an estimated $59.3 million of crop value in 2001 when the Interior Department cut off their irrigation water to protect endangered fish, the Lost River sucker and shortnose sucker and the Klamath coho salmon (Burke 2002). This kind of cost is not captured in the FWS report.

Local governments everywhere are finding themselves limited by the ESA. They are not allowed to build schools, hospitals, roads, and other infrastructure projects in areas designated as critical habitat. One example is the attempt by the Choctaw Nation and the Oklahoma Department of Transportation to build a road through the San Bois Mountains, improving access to a hospital for members of the Choctaw Nation. The road was never built because its only possible routes went through critical habitat for the endangered American burying beetle (Mann and Plummer 1995).

A new high school was delayed for one year in Vista Murrieta, California, by the Quino checkerspot butterfly. The school ended up costing $55 million, which is $1.25 million more than it would have cost the previous year.[11] In January 2004, plans to build a new elementary school in Wildomar, California, were put on hold because of the checkerspot butterfly and the California gnatcatcher. Students will probably start school in the fall of 2004 in portable classrooms, and the school district may have to purchase other potential habitat as mitigation for building the school (Bennett 2004).

Two endangered California gnatcatchers were found when Riverside County officials surveyed a 7.5 mile, $20 million project to widen and realign Newport Road in Menifee, California. Start of construction is on hold until agreements with the FWS can be made. And San Bernardino County, California, had to spend $4.5 million to purchase a new hospital site a few hundred feet away so the original site could remain vacant to protect the endangered Dehli Sands flower-loving fly (Stroup 2003, 1). No costs of this kind are captured in the FWS report.

Hidden social costs of the ESA include costs of reduced or terminated business activities and jobs; increased costs to provide services; lower tax revenues from reduced or terminated business income, personal income, or property devaluation; and costs of public assistance provided to individuals who lose jobs. One example of the magnitude of these costs is reported by the Westlands Water District in Fresno and Kings County, California:

> As an illustration of economic impact, in 1992 the water reduction specifically due to the ESA totaled about 115,000 acre-feet, 10 percent of Westlands' contract with the Bureau. This would have been enough water to produce crops on about 42,600 acres, with an average gross income of $1,450 per acre. On-farm losses from the ESA-related wa-

> ter shortage approached $62 million for Westlands alone. Using University of California modeling, approximately 950 jobs in Westlands and 4,500 jobs statewide were lost. Using the common economic multiplier of $1-to-$3, the impact to the statewide economy was a reduction of more than $218 million. The federal government also lost almost $2.3 million in revenue, based on average water rates paid by Westlands for CVP (Central Valley Project) water that year. (Westlands Water District 1999)

The U.S. House of Representatives Subcommittee on Forests and Forest Health recently held an oversight hearing on issues affecting jobs in the forest industry. In this hearing the Committee reported that 22,000 timber jobs were lost in the Pacific Northwest in the 1980s due to campaigns to protect the northern spotted owl. Moreover, the Committee found that at least 130,000 jobs have been lost and more than 900 sawmills, pulp and paper mills and other forest products facilities have been closed since mid-1990, all due to the northern spotted owl (House Committee on Resources 2004).

A rise in the unemployment rate in Washington was not the only social cost as a result of the listing of the owl. As noted by Thomas Lambert and Robert J. Smith (1994, 22), "As the unemployment rate rose throughout 1991, so did incidences of domestic violence." Additionally, drunk driving arrests tripled from the spring of 1991 to January 1992. In one local school suicide attempts among children increased; all were from logging families whose fathers had lost their jobs. "Increasingly, some of the most vocal opponents to the ESA are not timber barons, but county commissioners, city council members, school boards, and teachers associations," Lambert and Smith (1994, 22) wrote.

Other Social Costs

The rigidity of the Endangered Species Act actually discourages habitat protection because landowners want to keep endangered species off their property. Evidence shows that they can often do this (see Lueck and Michael 2003; Brrok, Zint, and Young 2003). Further, the ESA also inhibits scientific research. As ecologist Michael Rosenzweig (2003) explains, saving many species requires many experiments, some involving habitat manipulation. But the FWS is concentrating almost entirely on setting aside habitat, a policy that is inadequate to the task. By limiting scientists to the observation of species and habitats, we are ignoring the potential benefits of habitat modification and scientific experimentation.

Are We Getting What We Pay For?

The goal of the Endangered Species Act is to save *all* species. It is probably the most comprehensive environmental law in the United States. While the thought of protecting endangered species appeals to most Americans, the high economic cost of recovery, the burden to our nation's social structure and well-being, and the unchecked federal power it gives agencies administering the act does not. To some, the ESA represents governmental interference at its worst (Yaffe 1982).

From 1989 to 2000, the FWS reported spending a total of $3.5 billion to protect species (see Table 1, page 3). We recognize today that the actual cost of protecting species, when both government and private costs are included, may easily reach or exceed that figure *per year*. For these expenditures, it is worth asking what the taxpayers got for their money. The answer is that they did not get much. Sterling Burnett and Bryon Allen (1998) wrote a telling analogy in an analytical comment on the ESA. "[S]uppose a federal education program for high-risk students enrolled 1,139 U.S. children and 565 foreign kids but graduated only 60 in 26 years, at a cost of billions. This is the record of the ESA."

The statistics have changed very little in the four years since Burnett and Allen wrote this analysis. As of December 2003, 1,260 U.S. species were listed as endangered and only 15 have been delisted because they are said to have "recovered" (FWS 2004). However, crediting the ESA with recovering 15 species is misleading. The 15 recovered species include species that were conserved by state agencies or private organizations, with little assistance from the federal government. Even if the 15 species had been recovered as a direct result of ESA efforts, 15 species out of more than 1,000 is a measly track record. The majority of the 15 species delisted were not delisted because of successful efforts to save a species, but because of data errors. For example, the Hoover's woolly-star (also called California's jewelflower) was originally listed as threatened under the ESA in 1990. In October 2003, however, the plant was delisted after the discovery of new populations in three counties. One of the reasons the flower was unnecessarily listed to begin with was the fact that regulators looked at only limited regions and conducted their survey during a Valley drought (Suarez 2003). The woolly-star is not an isolated case; species populations are commonly undercounted at the time of listing, or species are listed that are thought to be distinct populations, but they are later determined not to be distinct at all (Lambert and Smith 1994).

The reported federal and state costs of the Endangered Species Act are large and growing, though underreported. The costs to the economy and to private individuals are also substantial. They are, however, invisible to most

observers. They are not part of any government's budget and no one is responsible for tracking them. These costs, however, are hitting taxpayers' pocketbooks at the federal and local levels as well as reducing the value of private individuals' property. If we want to really know how much the ESA costs, each listing decision needs to include an economic impact statement based in sound methodology.

Unfortunately, even if an economic impact statement were required at the listing stage, sound methodology would be unlikely. We need only look at the Fish and Wildlife Service's estimates of the costs of critical habitat designation to justify the pessimism. The analysis of California vernal pools cited above, for example, found that the FWS analysis estimating the economic impacts of designating critical habitat to protect California vernal pools underestimated the actual economic impacts by 7 to 14 times (Sunding, Swoboda and Zilberman 2003).

The lead author of the study, David Sunding, is director of the Department of Agricultural and Resource Economics at the University of California, Berkeley, and was a senior economist in the Council of Economic Advisors during the Clinton administration. He states that the method used by the FWS to estimate economic costs "is seriously lacking on both conceptual and empirical grounds." Even so, good-faith estimating of economic costs at the listing stage would improve our general understanding of the costs of a highly popular, generally ineffective, and costly program.

Conclusion

The Fish and Wildlife Service's *Three-Year Summary of Federal and State Endangered Species Expenditures, Fiscal Years 1998–2000* is a gross underestimate of the actual cost of implementing the Endangered Species Act. The report fails to account for expenditures not identifiable with specific species on the federal and state levels. Efforts to conserve threatened and endangered species at the local level are not adequately accounted for, and efforts of the private sector are completely ignored. In addition, the report fails to identify potential financial and social costs accrued by the ESA. It is safe to say that the most recent total expenditure figure of $610 million in 2000 is far below the actual price tag of the ESA. The true costs are probably four times that—not in the millions, but in the billions.

Notes

1. Endangered Species Act (1973), Public Law No. 93-205, 87 Stat. 884.
2. In this paper, the study will be called the FWS report or the cost report (FWS 2003b).
3. Expenditures do not include land acquisition costs.
4. Two out of 21 agencies contacted by the FWS reported that although they had ESA-related expenditures, they could not identify the expenditures by species (FWS 2003b).
5. House Conf. Rept. 100-928, Sec. 1012, p. 24.
6. Julie Smith, program coordinator for University of Washington's Transportation Professional Development Program, telephone conversation, March 1, 2004.
7. Phil Miller, coordinator of the Lower Columbia and Coastal Regions, Stormwater, Watershed Management for the governor's office, state of Washington, telephone conversation, March 1, 2004.
8. 50 C.F.R. 17.3 (2001). See also *Babbitt v. Sweet Home* (1995).
9. 50 C.F.R 17.3 2001.
10. On a per-acre basis, critical habitat designation for the gnatcatcher will range from $400,000 to $100,000 per acre and average $150,000 per acre over the seventeen-year period (Sunding 2003).
11. Many landowners believe that being deprived of a portion of their property should be viewed as an unlawful taking of private property under the Fifth Amendment's Taking Clause: "Nor shall private property be taken for public purposes without just compensation."
12. Calculated using U.S. Department of Labor's CPI inflation calculator online at http://www.bls.gov/bls/inflation.htm.

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ACCOUNTING FOR SPECIES

The True Costs of the Endangered Species Act

Without accurate figures for the costs of the Endangered Species Act, the ongoing public debate over whether the law is effective will be a misinformed one. This study, *Accounting for Species*, contributes to the debate by analyzing the U.S. Fish and Wildlife Service's recent report, *Three-Year Summary of Federal and State Endangered Species Expenditures, Fiscal Years 1998-2000.* In its report the Fish and Wildlife Service provided some figures on the costs to the government of implementing the act, but the authors of *Accounting for Species* reveal that the Fish and Wildlife Service report drastically understates the government's costs of implementing the act and totally fails to include economywide losses.

Anyone seeking to understand the true costs of the Endangered Species Act must look beyond the report. That is what Randy T. Simmons and Kimberly Frost have done in this study. Simmons and Frost not only reviewed the FWS report but also identified costs that should be included in any serious assessment of the Endangered Species Act. They conclude that an accurate accounting of annual costs attributable to the Endangered Species Act would be in the billions, not millions, of dollars.

This study was prepared at PERC, the Property and Environment Research Center, a nonprofit institute dedicated to improving environmental quality through property rights and markets. PERC conducts extensive research into environmental topics such as water marketing, forests, fisheries, recreation, and land conservation, as well as air and water pollution. This study, as well as other PERC publications, can be found on PERC's Web site at www.perc.org.

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