

**Protecting the Environment
Through the Ownership Society — Part II**

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Executive Summary

The United States was founded on the principle of private property ownership as the ultimate guarantor of individual liberty and prosperity. Yet, more than 40 percent of the land is owned by government, and the federal government controls ocean resources within 200 miles of the coast.

Unfortunately, government has poorly managed the public's natural resources. It has been unable to balance public land uses, such as logging and recreation, with preservation of lands in their original state. Because of shifting priorities, national parks and forests have at times been either overused or neglected. As a result, public lands have been degraded and the wildlife that depends on them destroyed. Government efforts to regulate ocean resources have been even more schizophrenic, simultaneously subsidizing commercial fishing while imposing restrictions to halt declining fish populations.

National Parks. Too many people using anything will destroy it, and national parks — many of which are ecologically fragile — are no exception. The National Park Service has maintained low or no entrance fees to encourage the maximum number of visitors, but this has led to overuse and insufficient funds for properly maintaining roads and facilities. It has suppressed natural fires — while spending billions of dollars fighting forest fires. And since deer, elk, pronghorn sheep and bison are popular park attractions, such predators as wolves and bears were hunted and trapped.

The Park Service has been successful in attracting visitors (287 million people in 1999) and increasing the number of grazing animals — but at a high price.

- In the most popular parks, visitors regularly complain of air pollution from automobiles, cars interfering with scenic views and traffic jams hampering the natural experience.
- The absence of predators to regulate populations and periodic fires to stimulate plant growth led to an overpopulation of grazing animals.
- In Yellowstone, elk have almost entirely driven out deer, bighorn and pronghorn sheep, and even beaver populations, or pushed them into poorer habitats, leaving them prey to disease and boom-and-bust population cycles.

In contrast, individuals and private organizations have a long history of protecting environmentally valuable lands. For instance:

- The Audubon Society maintains more than 100 sanctuaries and nature centers comprising more than 300,000 acres.
- The Nature Conservancy protects and maintains 15 million acres in the United States in nearly 1,400 private preserves — an area greater than the states of Connecticut, Delaware, New Jersey and Rhode Island combined.

National Forests. Like national parks, national forests have also suffered from conflicting management goals and environmental degradation. Logging and the roads built to access timber have often been environmentally destructive. For instance:

- In the Northern Rockies, some trout and salmon streams have been severely damaged by several feet of silt or mud runoff from logging roads and clear cuts.
- Road construction created inroads for exotic, often harmful species of wildlife, plants and parasites.

The Forest Service has also tried the “let-nature-take-its-course” approach by designating roadless areas and limiting logging. But the forests’ health has continued to decline because they are overcrowded with too many living, dying and dead trees:

- Historically, large ponderosa pines grew in stands of 20 to 55 trees per acre in the Western national forests; today they grow in densities of 300 to 900 trees per acre.
- National forests in California have an estimated 10 to 20 times more trees than is “natural.”

When forests become too dense they are more susceptible to disease and infestations. Keeping the number of trees per acre at an optimal level helps regrowth and biodiversity by allowing sunlight to reach the forest floor. Overcrowding also increases the likelihood and severity of fires. According to Forest Service figures, 60 percent of national forest land is unhealthy and faces an abnormal fire hazard. And of the more than 90 million acres at high risk for catastrophic fires, 14 million acres are designated roadless areas, where access is limited.

Bureaucratic paralysis often infects federal forest management efforts. For example, after a forest fire in California burned both public and private land:

- The Forest Service removed dead trees and other fuels from only 1,206 acres and replanted 230 acres in the 27,000-acre Lassen National Forest.
- Only 181 acres of the more than 28,000 acres in the Plumas National Forest were reforested.

By contrast:

- Private foresters reduced the chance of a future catastrophic wildfire by removing 30,633 tons of dry material, enough to fuel 3,600 homes for a year.
- They harvested enough larger dead trees to build 4,300 homes.
- And they spent millions of dollars to reforest the burned land, planting nearly one million seedlings of seven different tree species.

Private organizations have also successfully managed forested land for multiple uses. For example, North Maine Woods, Inc., a land management trust, owns almost 3.5 million acres and allows both logging and recreation:

- The trust maintains 17 access checkpoints on roadways where visitors register, pay a small fee and obtain permits for campsites.
- The fees, comparable to those at local government parks, along with profits from logging operations, are used to maintain roadways, improve campsites and clean up litter.

Ocean Fisheries. There has been a rapid and unprecedented decline in American and world fisheries under government regulation. In the 1960s, the government began subsidizing fishing through grants, tax breaks and below-market loans that resulted in more fishers chasing fewer fish.

- In the past 50 years, populations of large fish species — including tuna, swordfish, cod, halibut and flounder — have decreased 90 percent worldwide.
- The National Marine Fisheries Service lists 98 species as overfished.
- Due to overfishing, half of all U.S. fisheries, and a quarter of the major fish stocks worldwide, are in jeopardy of an abrupt, severe, irreversible decline.

While government-operated fisheries are declining, privately owned fisheries have prospered. For example, of the 133 million tons harvested from inland and ocean fisheries in 2003, 40 million came from aquaculture, or private fish farms and hatcheries. The four U.S. ocean fisheries that have been privatized now have smaller fishing fleets, higher incomes for fishermen, and larger, healthier fish stocks.

Ownership in Action. The concept of ownership can be extended to public lands and ocean fisheries. For example, some federal lands could be sold or auctioned off to private parties (individuals, companies or nonprofit organizations). Or management could be transferred to congressionally-approved boards or to states or counties that have demonstrated superior economic *and* environmental performance.

As for fisheries, financial incentives to overharvest marine resources should be eliminated and replaced with property-based solutions that create incentives for conservation. A system of tradable rights, called individual transferable quotas (ITQs), could be implemented, entitling fishermen to a certain portion of the catch.

Where strict private property rights cannot be established, new markets can be created or economic incentives can be brought to bear on the management of the resources in question in order to improve the environment.

Introduction

A bedrock principle upon which the United States was founded is private property ownership as the ultimate guarantor of individual liberty and prosperity. Yet, more than 40 percent of the land is owned by government. Leaving aside federal office buildings and military bases:

- The federal government owns and controls more than 650 million acres, totaling more than 29 percent of the land in the United States.¹
- These lands include more than 83.6 million acres managed by the National Park Service, 193 million acres managed by the Forest Service and 258 million acres controlled by the Bureau of Land Management.²
- More than 96 million acres are set aside in national wildlife refuges supervised by the U.S. Fish and Wildlife Service.³

The government owns some of the nation's most magnificent landscapes and treasured resources but it also owns some lands with no particularly striking characteristics or special environmental value. It also manages other natural resources, like ocean fisheries. Unfortunately, the federal government has managed the public's natural resources as poorly as it has managed the federal budget. Unable to balance land use and preservation, government management of public lands has shifted between periods of exploitation or overuse and periods of "protection" or "preservation" bordering on neglect. The result of both has been degradation of the public lands and the wildlife that depends on them. Government efforts to regulate ocean resources have been even more schizophrenic, simultaneously subsidizing the fishing industry while imposing restrictions to halt declining fish populations.

President George W. Bush has promoted the concept of the "Ownership Society" as a solution to a variety of public policy issues including health care, housing and retirement. The idea behind the ownership society is that the welfare of individuals (and thus the nation) is best served by and directly related to the ability of people to control their own lives and pursue their own goals. After more than a hundred years of federal management of natural resources and legislative dominance of environmental law, it is time to re-explore the extent to which ownership can improve the environment.⁴

Garret Hardin provided a modern economic analysis of the idea that public ownership of natural resources leads to poor management and environmental degradation, using the example of herders who share common grazing land.⁵ Herders who overgraze commonly-owned land reap all the benefits. Yet all herders share the cost of the resulting land degradation, whether or not they contributed to its cause. Consequently, herders who overgraze bear only

"The federal government manages public lands poorly."

part of the cost, while herders who resist the temptation in order to protect the land bear the immediate cost of their forbearance, but realize only a fraction of the benefits. This is because the benefits of their good behavior (long-term preservation) are shared by all herders, not just those who act to preserve the land. Indeed, their selfless actions may have no effect on overgrazing — except to increase the share of the common pasture available to the others. Everyone, therefore, faces perverse incentives to overgraze. To the degree that they act on those incentives, environmental destruction results.

Public lands are also a commons, facing the same problem many other valuable common-pool resources face: overuse. Public commons are controlled through the political process, leading to disparate, sometimes contradictory and shifting goals for their management. As a result, public land managers are often rewarded for making what others perceive as perverse decisions.

This study will show that many of the environmental problems faced by public lands can be solved through a property rights approach. The environmental management of resources for which strict private property rights cannot be established due to technological or political reasons can be improved by creating new markets or economic incentives.

A previous NCPA study, “Protecting the Environment through the Ownership Society — Part One,” applied this concept to agriculture subsidies, subsidized flood insurance and the Endangered Species Act.⁶ It showed how government programs and policies, some instituted more than a century ago, are causing environmental harm. In Part Two, the analysis is extended to government ownership and management of public lands and to ocean fisheries.

“Private owners could solve environmental problems on public lands.”

National Parks, National Problem

The mission of the National Park Service is to preserve land for the “benefit and enjoyment of the people.” The system now consists of 390 parks, historic sites, scenic rivers and recreation areas totaling nearly 84 million acres.⁷

Problems became apparent almost immediately after the Park Service was created in 1916, as the goals of “preservation” and providing for the “enjoyment of the people” arguably conflicted. Too many people using anything will destroy it, and parks — many of which are ecologically fragile — are no exception. In addition, actions taken to enhance visitors’ short-term enjoyment can have disastrous long-term consequences.

For example, to encourage the enjoyment of the parks by the maximum number of people, the Park Service maintained low or no entrance fees for most of the 20th century. It also suppressed the natural fire cycle in the parks — spending billions of dollars fighting and preventing forest fires. In addition, predators were actively hunted and trapped in order to increase populations of animals popular with park visitors — deer, elk, pronghorn sheep and bison.⁸

The Park Service was successful in both attracting visitors (287 million people in 1999) and increasing the number of grazing animals — but success came at a high price.⁹

- High visitor numbers, low fees and limited congressional appropriations have led to a record multibillion-dollar backlog in repairs and maintenance.
- The absence of predators to keep their populations in check and periodic fires to stimulate plant growth led to an overpopulation of grazing animals.¹⁰
- In Yellowstone, elk have almost entirely driven out deer, bighorn sheep, pronghorn sheep and even beaver populations, or pushed them into poorer habitats with less nourishment, leaving them prey to disease and boom-and-bust population cycles.

Furthermore, in the most popular parks, visitors regularly complain of air pollution from automobiles, cars interfering with scenic views and traffic jams hampering the natural experience.

Changing Park Policies. In recent years, the Park Service has begun to shift its focus away from providing visitor enjoyment toward preservation. It has raised entrance fees substantially for the most popular parks. Management goals for individual parks are also shifting. For example:¹¹

- In Yellowstone, elk have been relocated, wolves — once extirpated within the region — have been reintroduced, naturally occurring fires have been allowed to burn unless they threaten human lives or property, and limits have been placed on the number and types of watercraft and snowmobiles in the park.
- In the Everglades National Park, a multibillion-dollar water-flow and wetlands restoration effort has begun.
- In Yosemite, in order to restore a more natural experience, park officials limit the number of cars entering on busy days, closed some camp sites, cabins, roads and trails, and plan to implement a shuttle service for visitors throughout the park (a similar plan is being considered for Yellowstone).
- In the Grand Canyon, limits have been placed on the number of plane and helicopter flyovers.

Changes Spark Controversies. The Park Service's shifting focus toward preservation has not been without controversy. User groups and communities that are economically dependent on park visitors have objected to the increases in entrance fees, camp closures, and restrictions on vehicle access and activities.¹² Many also argue:

“National parks eliminated predators, leading to an overpopulation of grazing animals.”

“Wolves were reintroduced into Yellowstone to control elk populations, but killed livestock.”

- Even if additional revenues from higher fees are used to fix the maintenance backlog, it is a form of double billing since visitors have already paid for park access through taxes; and higher fees can be a barrier to park use by lower-income Americans.
- Concerning the purported damage caused by motorized vehicles, a recent Park Service report found little if any evidence that the number of snowmobiles entering the parks during the winter harms park wildlife.¹³
- Allowing lightning-sparked wildfires to burn is dangerous since they occasionally spread beyond park boundaries and destroy homes and businesses.

Another major controversy has been the reintroduction of wolves in Yellowstone in order to reduce elk overpopulation. Wolves do not stay within park boundaries and pose a threat to livestock on neighboring ranches. In order to lessen opposition, the nonprofit Defenders of Wildlife established a fund to compensate livestock owners for losses to wolf predation.¹⁴

However, problems in Yellowstone have brought planned wolf reintroduction efforts on other public lands to a virtual standstill. As predicted, wolves have thrived. And as expected, some livestock has been killed. But many ranchers say their claims for compensation have been unjustly denied because of disputes over whether wolves caused the deaths. Some also claim the compensation did not equal the fair market value of their losses. And while the wolves have had the desired impact on the elk population within the park, wolf predation of elk outside the park has begun to raise the ire of sportsmen’s groups. They note the decline in elk and fear future restrictions on hunting.

These controversies have prompted members of Congress to propose altering the mission of the Park Service laid out in the 1916 National Park Service Organic Act.¹⁵ At a congressional hearing, Rep. Steve Pearce (R-N.M.), Chairman of the House Resources Subcommittee on National Parks, Recreation and Public Lands, criticized recent park management decisions that appeared to favor preservation over visitor access and enjoyment, stating, “I don’t view the Organic Act as Congress’ attempt to preserve parks *from* Americans (emphasis added).”¹⁶

In particular, Pearce targeted what he believed was an attempt to freeze time, rather than allowing the parks to change. “Success should not be determined exclusively by whether the resources look like they did when our ancestors landed on Plymouth Rock,” he said.¹⁷

For now, the national park management is caught between the conflicting goals of preservation and visitor enjoyment. The multibillion-dollar

maintenance backlog continues to grow and has become an annual albatross hanging around the neck of multiple Congresses and presidential administrations. In each election cycle, environmental lobbyists cite poor maintenance as evidence that neither Congress nor the administration care about the environment.

National Forests, Poor Environmental Results

Like national parks, national forests have also suffered from conflicting management goals and environmental degradation. National forests began with the Forest Reserve Act of 1891, which allowed the president to establish reserves of timber-covered land in the public domain.¹⁸ The U.S. Forest Service was established as an official agency in the Department of Agriculture in 1905. The Forest Service currently manages a system of 155 national forests, 20 national grasslands, 20 research and experimental forests, and other areas, covering more than 193 million acres.¹⁹

The Forest Service's initial purpose was to further the country's development by putting those lands to their most productive long-term use — believed at the time to be lumber production. Logging was the predominant legislated use, provided that forest resources were maintained so that they were available for future use.²⁰

Fostering Unhealthy Forests: Environmental Impact. Environmental quality, recreation and wildlife preservation were given short shrift when the Forest Service was established. Logging and road building in the national forests have often been environmentally destructive, especially in mountainous terrain that requires stripping vegetation and removing vast quantities of earth. By 1985 the Service had constructed more than 342,000 miles of roads in national forests — more than eight times the total mileage of the Interstate Highway System — to allow logging on more than half of the nation's forests.²¹ [See Figure I.]

The Forest Service's policy of clear-cutting — removing all the trees from a designated area — also had negative environmental consequences. Large clear-cuts displace forest-dependent animal species and reduce the area's water absorption, at least temporarily. And small clear-cuts require more roads per acres logged. The results:

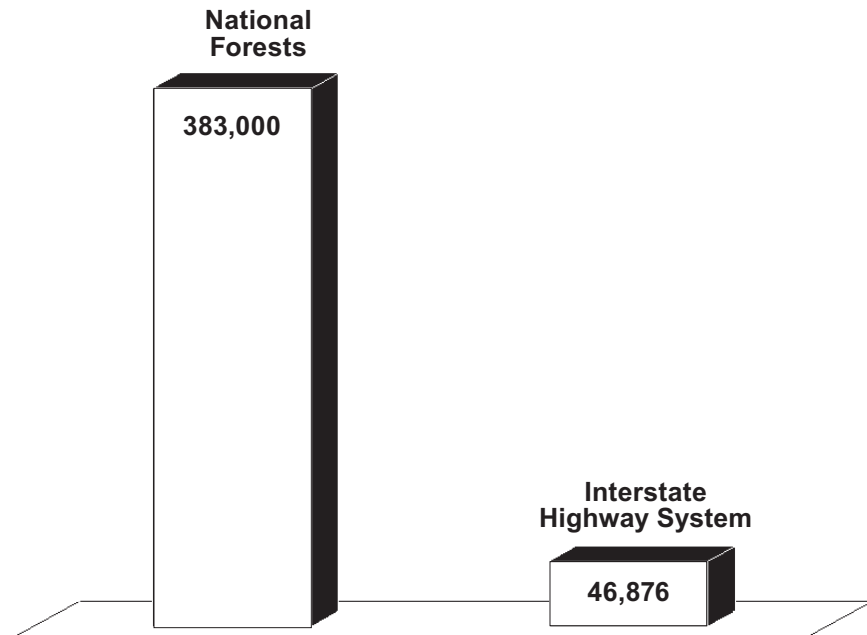
- In the Northern Rockies, some trout and salmon streams have been severely damaged by several feet of silt or mud runoff.²²
- Road construction has created inroads for exotic, often harmful, species of wildlife, plants and parasites.

“Stripping vegetation in national forests was environmentally destructive.”

“Three are eight times as many miles of logging roads as Interstate highways.”

FIGURE I

Miles of Roads



Source: “Report of the Forest Service FY2002: Healthy Forests and Grasslands — Financial and Performance Accountability,” U.S. Department of Agriculture, Forest Service, May 2003, page 128; U.S. Department of Transportation, Federal Highway Administration.

In addition to road building and clear-cutting, other factors have contributed to unhealthy forests. Many forests have more standing dead timber or parasite-infested trees in decline than newer, growing trees. Other forests have stands of trees that are too thick (too many trees growing in too small an area) due to successful fire suppression programs, logging that has not kept pace with forest growth, and forest replanting programs that stress the monoculture of fast-growing, commercially valuable species. As a result, many national forests have either lost biodiversity — they have fewer species or varieties of trees than before — or the trees are not reaching their growth potential, or both. Indeed, one researcher found that regrowth in many federal forests was less than 50 percent of the potential.²³ For instance, among national forests in Montana in 1993:

- Lolo National Forest saw the highest average annual growth, averaging about 58 percent of its productive potential.
- The Lewis & Clark National Forest averaged only 30 percent of its productive potential.
- The Gallatin National Forest actually saw a negative growth rate.²⁴

These aging and dying national forests also harbor fewer species of other plants and smaller animal populations compared to young, growing forests.

The high environmental costs of the Forest Service's logging program might be worthwhile if it served some national purpose, but most lumber products in the United States come from private forests. In fact, historically, logging on the national forests has entailed large economic costs. For instance, in 1998 alone, depending upon the estimate chosen, the Forest Service lost \$126 million to \$407 million on its timber program.²⁵

Shifting Forest Management. Poor road construction, improper maintenance and intensive logging in poorly suited areas harmed forest environments. To solve these problems, environmentalists fought to end or at least drastically reduce the amount of logging in national forests. They also advocated closing and/or removing many forest roads and prohibiting future road building on all remaining roadless areas. As a result, the Forest Service's mission began to change. Beginning with the National Forest Management Act of 1976, Congress required the agency to manage the national forests for multiple uses, including logging, ensuring a diversity of plant and animal species, increasing outdoor-recreation opportunities and protecting watershed resources.

The new mission was gradually implemented and, by 1996, national forests were used recreationally for a total of 341 million visitor days, including such activities as hiking, fishing, camping, hunting, horseback riding, off-road vehicle use and driving for pleasure.²⁶

Road building and logging have been substantially curtailed to protect watersheds and species, particularly the endangered northern spotted owl in the Northwest and various trout species in the Rocky Mountains. Whereas an average of 2,000 miles of forest roads were constructed per year in the 1980s, less than 500 miles per year were built during the 1990s and thousands of miles of road were closed.²⁷ The decline in road building has largely tracked the decline in timber harvest.

Arguably, environmentalists scored their most profound victory in January 2001, when the Clinton administration approved a Forest Service proposal to place 58.5 million acres off-limits to future road building.²⁸ Combined with the 35 million acres of roadless areas already designated as wilderness and thus off-limits to roads and development, this makes approximately 93 million acres de facto wilderness — almost half of the total land in the national forest system.²⁹

Environmentalists and Forests. Unfortunately, declining construction and road closures have failed to improve forest health. Indeed, recreation in national forests has increased but visitors are packed onto fewer poorly maintained roads:

“Forest road building was curtailed, while the number of visitors increased.”

- Recreational users make more than 800 million visits per year (some visitors make multiple visits) to camp, motorbike, ride horses, hunt and hike.³⁰
- From 1946 to 2000 overnight visitors increased 18-fold to more than 214 million, and in 2002 there were 215 million visitors who simply drove through or stopped at scenic overlooks.³¹
- However, while only 7 percent of all forest roads are paved, 80 percent are open to public use.³²
- This increase in recreational-user traffic has left the Forest Service with an estimated \$8.4 billion road maintenance and improvement backlog.³³

Some Forest Roads Are Beneficial. If forest roads were nothing more than a harmful drain on the U.S. Treasury, the Clinton administration’s decision to implement a roadless policy might have been a good plan. However, forest roads serve important national and local purposes, providing benefits — including some environmental benefits — which should be considered before declaring current roadless areas off-limits to future road building.

According to the Society of American Foresters, properly constructed and maintained forest roads are necessary for the Forest Service to carry out its multiple-use mission. Just focusing on the agency’s environmental responsibilities indicates the critical need for roads. For example, for a number of years, a rising share of public timber sales has been undertaken for “stewardship” purposes — meaning they have an environmentally beneficial purpose. These sales are expected to account for 60 percent or more of total timber sales in the future.³⁴ However, few of these stewardship sales will be economically or technically feasible in roadless areas.

Wildlife habitat improvements also depend on the kind of active forest management that requires roads. For example, the Forest Service has argued that the Mexican spotted owl may benefit from timber harvests that maintain old-growth pine habitats and alleviate risk from wildfires, insects and disease.³⁵ Other species that depend on active forest management include red-cockaded woodpeckers, Kirtland’s warblers, goshawks and snowshoe hares (a primary prey species for lynx).

In addition, active forest management is generally good for game species and, when properly done, creates a mix of habitats and trees of diverse ages that are generally beneficial for many species. Thus, the roadless designations hamper wildlife management activities.

Overcrowding and Forest Fires. The reduction in road building and timber harvesting has led to overcrowding — forests filled with too many living and dying or dead trees:

“Roads are necessary to thin trees for wildlife habitat and reduce fire hazards.”

- Historically, large ponderosa pines grew in stands of 20 to 55 trees per acre in the Western national forests; today they grow in densities of 300 to 900 trees per acre.³⁶
- National forests in California have an estimated 10 to 20 times more trees than is “natural” — making them dangerously overcrowded.³⁷

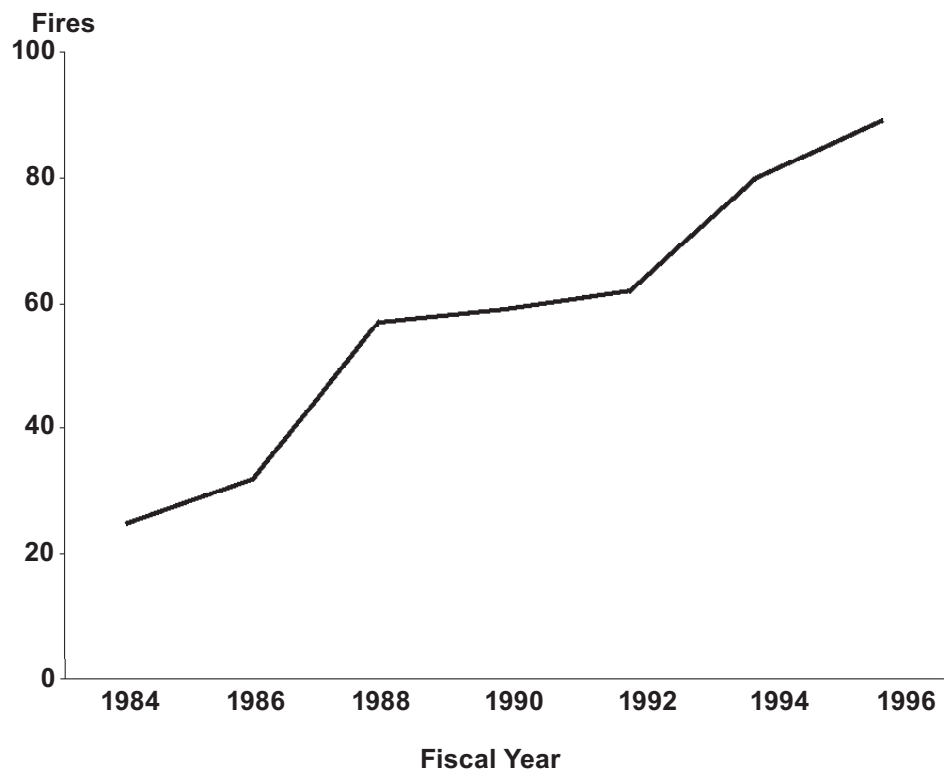
Overcrowding contributes to the continuing decline in forests’ health. It also increases the likelihood and severity of fires. [See Figure II.] According to Forest Service figures, fully 60 percent of national forest land is unhealthy and faces abnormal fire hazards.³⁸ And of the more than 90 million acres at high risk for catastrophic fires, 14 million acres are located in designated roadless areas.³⁹

Access to forests for fire management is perhaps the most important environmental benefit that roads provide. Yet, environmentalists’ lawsuits against the Forest Service have successfully halted or delayed attempts to thin various forests using such techniques as salvage logging of dead trees in areas that have already suffered catastrophic fires. They also argued for a policy of active neglect — allowing naturally started fires to burn (unless or

“Overcrowded and diseased trees increase the risk of forest fires.”

FIGURE II

National Forest Fires of 1,000 Acres or More



Source: U.S. General Accounting Office and National Interagency Fire Center.

until they become a threat to developed areas). As a result, the Service still fights fires resulting from human carelessness or arson, but now often allows forest fires sparked by lightning to burn. And in many places, the Service has even engaged in small-scale prescribed burns to help the forests regenerate by mimicking the historic fire patterns in the Western forests. As a result of these policies:

- In 1988, prescribed burns decimated 1.2 million acres of Yellowstone National Park.⁴⁰
- In 2000, New Mexico's Los Alamos Fire destroyed 90 percent of the endangered Mexican spotted owls' habitat.⁴¹
- In 2002, the Biscuit fire destroyed almost 500,000 acres, including tens of thousands of acres of spotted owl habitat and 49 known nesting sites in national forests in Southern Oregon and Northern California.⁴²
- Between 1999 and 2002, the Forest Service identified 11 California spotted owl nesting sites lost to wildfires.⁴³

This new fire policy also has human costs. By 2000, while only 38 out of 3,700 prescribed fires had gotten out of control, the losses in terms of human life and property damage were enormous:⁴⁴

- In 1980, 50,000 acres in Michigan were decimated by a prescribed burn intended to create habitat for the Kirtland's warbler; the fire destroyed homes and resulted in one death.
- In 1991, a raging wildfire in Oakland, Calif., destroyed 700 homes and 25 residents died.
- In 1999, forest managers lost control of the Lowden prescribed burn, which destroyed 23 homes in Lewiston, Calif.
- In 2000, a prescribed burn in the Bandelier National Monument got out of control, swept through the Los Alamos National Laboratory and destroyed more than 400 homes and businesses, causing more than \$1 billion in damages.
- Between 1990 and 2000, more than 50 lives were lost to wildfires.

The financial costs of fighting forest fires have risen, too. Fire damage to homes and property increased six-fold to \$3.2 billion by 1997.⁴⁵ And the Forest Service spent a record \$1.5 billion fighting fires during the 2006 fire-fighting season.⁴⁶

Law of the Land. Some of the most damaging recent fires have occurred in areas covered by the roadless rule. As a result, a number of states, counties, outdoor recreation groups and private timber companies have challenged the roadless rule, fearing its harmful effects on the economy, people,

"Forest fires set to encourage regrowth sometimes destroy private property."

property and wildlife. Lawsuits and subsequent action by the Bush administration have prevented the rule from ever taking full effect. Contradictory rulings from different federal courts largely left the rule in limbo, though it has basically been de facto in force, since road building has been on hold in many regions during the ongoing legal proceedings.

In 2005, the Bush administration repealed the previous roadless rule and replaced it with a process whereby each state governor could petition the Forest Service to maintain the roadless status of some or all of the inventoried roadless areas of national forests within their state. The governors could also petition the Service to allow more active management.⁴⁷ The administration argued that this process would allow interested states more input and allow more flexible management over time in light of and in response to changing forest conditions.

This “state petition” rule was immediately challenged by several governors and environmental interest groups. In September 2006, Judge Elizabeth Laporte, of the U.S. District Court in San Francisco, overturned the new policy and replaced it with the previous roadless rule.⁴⁸ Laporte claimed that the Bush administration failed to follow proper procedures under the National Environmental Policy Act (NEPA) and the Endangered Species Act. Interestingly, when Judge Clarence Brimmer, of the U.S. District Court in Wyoming, overturned the initial 2001 roadless rule, he stated that the Clinton administration had failed to follow proper procedures under NEPA and the Wilderness Act in establishing the rule.⁴⁹ For federal forest management, the more things change the more they stay the same: poor management continues, lawsuits pile up, the forests burn — and the public and the environment continues to pay the price.

Ocean Fisheries: Common Heritage or Tragic Commons?

For centuries, America’s coastal fisheries ranked among the most bountiful on the planet. Five hundred years ago, the English explorer John Cabot reported that the waters off Newfoundland were so thick with cod that you could catch them by hanging baskets over the ship’s side.⁵⁰ In the waters of the Chesapeake, oyster beds were so thick they posed navigational hazards for ships. As late as the 1980s, the United States — together with many other parts of the world — entered into a “fisheries boom.” As new fish stocks were discovered, fleets expanded and the world’s fish catch increased six-fold. Today, U.S. waters contain 959 fish stocks, with an annual catch of 6.9 billion pounds, worth \$3.4 billion.⁵¹ But the boom is over and in the last few years American and world fisheries have entered a period of rapid and unprecedented decline:

“Fish were once abundant along America’s coasts.”

- In the past 50 years, populations of large fish species — including tuna, swordfish, marlin, sharks, cod, halibut and flounder — have decreased 90 percent worldwide.⁵²
- Altogether, the National Marine Fisheries Service lists 98 species as overfished.⁵³
- Atlantic cod (once so abundant in American waters that they were called the “beef of the sea”) have been fished to the verge of commercial extinction — their numbers depleted to the extent that fisherman cannot catch enough to be economically worthwhile.⁵⁴
- Due to overfishing, the Fisheries Service reports that half of all U.S. fisheries, and a quarter of the major fish stocks worldwide, are in jeopardy of an abrupt, severe decline from which they may never recover.⁵⁵

Unless something is done quickly, American waters may go from being the world’s most abundant fisheries to a virtual undersea wasteland within just a few years.

Why Have the Fisheries Declined? The decline is a result of two main factors: 1) the institutional structure of the fisheries and 2) misguided government policies.

Institutional Structure of Fisheries. Unlike cattle, sheep and horses, fish in the ocean do not have owners. They are common property to which everyone has access. Because they have no owners, they have no protectors or defenders. The result: overfishing, or a “tragedy of the commons.”⁵⁶

Although most fish species can withstand occasional overfishing, prolonged periods of population decline can lead to a collapse.⁵⁷ The key to managing fish — like any other renewable resource — is to implement policies that encourage fishermen to take fish in numbers that will provide for human consumption without stripping the species’ ability to reproduce itself.

Before government policies interfered, commercial fishing was guided by profit and loss. To the degree that fish were plentiful and relatively easy to catch, fishing was profitable and fleets grew. But when fish became temporarily scarce, the returns fell, profits sank and fishers either left the industry or cut back. Fishing fleets only overharvested temporarily since doing so lost them money.

Historically, treating the fisheries as a commons was not a problem and may still be the best policy for most ocean resources, most of the time. There is no market demand for the vast majority of species in the sea and, therefore, they are not subject to overharvesting. Of the 959 American fish stocks, only around 130 are commercially valuable.⁵⁸

Misguided Government Policies. In the United States and worldwide, the open-commons system began to break down in the 1960s, when a number

“Ocean fisheries are declining due to overfishing.”

of government and private studies found that the world's marine resources were underutilized. For instance, a 1969 report requested by Congress found total annual world harvest from the oceans stood at 50 million metric tons, but with available equipment, production could be expanded to 150 million to 200 million metric tons — three to four times the 1969 production level.⁵⁹

But if the industry was not limited by technology and investment, the report said, “far greater quantities of useful, marketable products could be harvested to meet the increasingly urgent world demand for protein foods ...[making it] more realistic to expect total annual production of marine food products (exclusive of aquaculture) to grow to 400 to 500 million metric tons before expansion costs become excessive.”⁶⁰

Contrary to this wildly optimistic — and badly mistaken — assessment, in 2003 the total harvest from inland and ocean fisheries was just 133 million tons — 40 million of which came from aquaculture, or fish farms and hatcheries.⁶¹

As a result of the report's conclusion that U.S. waters were underfished, the government began to subsidize fishing in ways that encouraged the type of overfishing that never would have occurred under an open-commons system.⁶² The subsidies included:

- Tax breaks for investments in new equipment and below-market loans to buy bigger boats and state-of-the-art equipment.
- Grants to fishing harbors to improve and expand the number of mooring spaces, and to fish warehouses to purchase the latest equipment.
- Grants and below-market loans for larger, newer fish processing plants.

The result of these programs was more fishers chasing fewer fish. In the late 1970s and early 1980s, there was a spectacular expansion in the U.S. fishing fleet. Of all the fishing vessels built in the past 50 years, more than half were built between 1973 and 1984.⁶³

Worldwide, the story was much the same:

- Throughout the 1980s, while the number of fish declined, government subsidies caused the world's fishing fleet to more than triple.⁶⁴
- The Chinese fleet alone more than quadrupled between 1970 and 1990.⁶⁵

According to Carl Safina, an expert on fisheries, when fishing subsidies are combined with other wasteful actions in response to unwise regulations, the fishing industry spends \$124 billion a year to catch \$70 billion worth of fish.⁶⁶

“The federal government subsidizes fishing.”

Misguided Government Response to Fewer Fish. The U.S. government's primary response to overfishing was the 1976 Magnuson-Stevens Fisheries Conservation and Management Act, which brought American waters under government control. The Act created 200-mile economic zones in American coastal waters that are exclusively accessible by American fishermen, and it established eight regional councils to formulate and implement fishery law. Each council drafts management plans specifically tailored to the breeding seasons, migration routes and current stocks of fish species in their region.⁶⁷ The plans use command-and-control regulations that restrict the size of fishing vessels; the types of nets and/or traps; the length and timing of the fishing season; the areas open to fishing; and the amount (usually specified in tonnage) of particular species that can be kept.

Theoretically, the councils can limit private individuals' access to natural resources by controlling how fish are caught. The goal is to allow the fisheries to renew themselves, ensuring their availability for future generations. However, as discussed previously, the political process suffers from two weaknesses: 1) it is itself a commons and 2) it does nothing to change the incentives facing fishers.

Furthermore, every council is assigned conservationists and fish biologists who have specialized knowledge of the fish in the region to advise the council members in setting policies. However, in most councils, the majority of council members are fishers and therefore have a vested financial interest in promoting the interests of fishers rather than fish. Many other council members are politicians whose primary concern is winning local fishers' votes in the next election rather than protecting fish. Neither the fishers nor the politicians have very strong incentives to adhere to the recommendations of the conservationists or biologists. The result has been fishery management plans that are more concerned with profits and votes than with conserving fish.

Results of Regulation. The fisheries would have been much better off if the government had done nothing over the past three decades. Left on its own, no private company or industry could continue to operate with such high losses. The problem with fishery regulations is that fishers have an economic self-interest in legally (or illegally) avoiding and evading them:

- Prevented from fishing on some days, they make a greater effort on days when fishing is allowed.
- Forced to use smaller boats, they use more of them, and when forced to use smaller nets, they use those nets more often.
- Forced to limit the number of fish they can bring back to harbor, they throw the smallest ones overboard before their return; in U.S. waters, 2.3 billion pounds of dead fish are thrown back into the ocean every year.⁶⁸

"Fishery regulations benefit fishers rather than fish."

To make matters worse, in order to alleviate the economic harm fishermen have suffered as a result of regulatory constraints, the government has provided even greater subsidies, tax breaks and price supports. Thus, a vicious cycle persists in which fishermen overfish and the government helps sustain an overly large fleet.

Harm from Regulations. The harm caused by these policies is not limited to the fish populations themselves. Indeed, the economy and society in general suffer ill effects from regulations and subsidies. According to the U.S. Commerce Department, restoring American fisheries could double commercial fishing revenues, create 300,000 new jobs economy-wide and have a \$25 billion overall impact on the U.S. economy.⁶⁹

Overfishing also hurts the general public. Fish make up a fifth of all animal protein in the human diet. In fact, more than one billion people depend almost exclusively on fish for protein.⁷⁰ Global production of fish exceeds by far the global production of land animals like poultry, beef or pork. Thus the depletion of fish stocks will result in malnutrition and poverty for many.

Applying Ownership to Public Lands

Many, and perhaps most, of the problems detailed above could be remedied by applying ownership principles to the management of all public lands — national parks, wildlife refuges, national forests, public grasslands and so forth — and ocean resources. There is no compelling reason to keep properties that are not environmentally unique or significant in the public domain, rather than sell them to private parties (individuals, companies or nonprofit organizations). The private sector currently preserves, protects and promotes many historically important properties and manages the majority of the country's forests and rangelands. Moreover, it manages them in ways that promote environmental quality and benefit the owners and the public at large.

No Environmental Reason. The federal government acquires and protects some properties for political reasons, rather than environmental concerns. For instance, there is really no compelling reason, other than the desire of legislators to bring home pork or to have themselves memorialized for posterity, why there is a national park, recreation area or forest in every congressional district. The U.S. Fish and Wildlife Service, which manages the national wildlife refuge system, notes that there are 545 national wildlife refuges in the United States — slightly more than one for each member of Congress — and at least one within an hour's drive from every major U.S. city.⁷¹

Furthermore, many public properties are valued for their association with especially important historical events, persons or industries vital to the development of the United States, but they have no particular environmental value.⁷² Other public lands in a largely natural state are valued primarily for

“Some public lands are not environmentally significant.”

their rural or relatively wild nature; however, they neither contain any particularly unique or breathtaking environmental features, nor do they provide ecosystems or critical habitats for species that are not already provided, as well or better, on other lands.

Previous Attempts to Dispose of Public Lands. There have been several proposals to sell or privatize some federal lands but they have all failed.

For instance:

- Legislation proposed in 1995 would have established a commission to identify and recommend the disposition of units of the National Park System that are not unique, don't fit the system's overarching goals or might be better managed by other agencies or the private sector.⁷³
- In 2005, House Resources Committee Chairman Richard Pombo (R-Calif.) proposed selling 15 units of the National Park System — including six national historical sites, three national monuments, three national preserves, two national parks and one national memorial.⁷⁴
- The Bush administration proposed selling 300,000 acres of national forest and thousands of acres of Bureau of Land Management lands.⁷⁵

None of these plans progressed very far due to well-organized opposition by major environmental and outdoor sports interest groups.

Selling Federal Land. Surely as an experiment the United States can safely and perhaps profitably sell some of the hundreds of millions of acres of federal land. For example, portions of national forests could be sold for market value. If there is one private owner of land abutting the property, it could first be offered to that owner for continuity of management. If that landowner is not interested or the forest abuts state lands or multiple private properties, it could be auctioned to the highest bidder.

Forest product companies, sportsmen's clubs and environmental groups would likely buy certain forested lands. Undoubtedly the range of interests bidding on the forests would be limited only by location, access and the imagination of the bidders. Some of these lands will likely be developed. And while they will no longer be public forests, many and perhaps most will be managed in ways that protect their natural character. For instance, forest companies have an incentive to manage their forests in sustainable ways, which enhances both their environmental and economic value. Unlike the federal government, private companies do not have the general treasury to bail out money-losing operations and therefore do not build uneconomical roads in ecologically fragile areas to cut down uneconomical trees. Furthermore, privatizing public lands would have the additional benefit of improving the tax base in rural areas and reducing the strain on the federal budget.

“Land that is not environmentally significant could be sold.”

Public versus Private Management. Private property owners have flexibility in managing their lands, whereas federal forest management is too often hampered by rigidity. For instance, when a wildfire struck near Storie, Calif., in August 2000, more than 55,000 acres burned, mostly in the Plumas National Forest (28,000 acres) and Lassen National Forest (27,000 acres). Also burned were about 3,200 acres of private forestland managed by W.M. Beaty and Associates. However, the responses of Beaty and the Forest Service couldn't have been more different. By 2001, Beaty foresters had:⁷⁶

- Reduced the chance of a future catastrophic wildfire by removing smaller dead trees and woody material — generating enough clean biomass fuel to fuel 3,600 homes for a year.
- Harvested larger dead trees suitable for lumber processing — amounting to 64.5 million board feet, enough to build 4,300 homes.
- Spent millions of dollars to reforest the burned land, planting nearly one million seedlings of seven different tree species.

By contrast:

- The Forest Service removed dead trees and other fuels from only 1,206 acres and replanted 230 acres in the Lassen National Forest.
- In the Plumas National Forest, the Forest Service was prevented from removing dead trees and reforestation occurred on only 181 acres.

This scenario was played out previously after the 1980 eruption of Mount St. Helens in Washington State. Very little reforestation occurred under the federal policy of “let nature take its course,” and 26 years later much of the federal land still looks like a moonscape — mostly denuded, hardened mud. But adjacent state and private lands are lush and flourishing.

Private forest owners are not hindered by bureaucratic federal rules requiring multiple studies, public hearings, comment periods and court challenges. Thus, they are better able to prevent infestations that kill forests and, if struck by disease, they are able to act quickly. Promptly removing dead and dying timber can prevent infestations from spreading to other areas and prevent potentially catastrophic fires. Private companies keep the number of trees per acre at an optimal level. This reduces fire hazards and lets sunlight reach the forest floor, which helps regrowth and biodiversity. In fact, their lands are often managed so well that they are considered prime campgrounds and are leased by hunting clubs. [See the nearby “Case Study: North Maine Woods, Inc.”]

“Private forest managers aren't hindered by inflexible regulations.”

The Private Sector's Track Record of Protecting Land. As explored in “Protecting the Environment through the Ownership Society — Part

Case Study: North Maine Woods, Inc.

North Maine Woods, Inc. is one of the most complex and innovative programs for multiple land uses. Some 20 different companies and individuals own almost 3.5 million acres of primitive forestlands and lakes in northwest Maine. This land supports a variety of wild flora and fauna and has been left largely undeveloped, since it is mainly used for commercial logging. Until the 1950s, public access for recreation was mostly restricted to traveling by foot or canoe.

However, destructive river log drives were prohibited, and the logging companies began building roads, making the forest more accessible to the public. It was a boon for outdoor recreational activity. But increased use eroded the narrow logging roads and public traffic sometimes clashed with logging trucks. Increased camping also brought a greater risk of forest fires and litter.

In order to allow both logging and recreation, the owners formed a trust to control public use and manage the land as a single unit. The trust maintains 17 access checkpoints and 16 access roadways where visitors register, pay a small fee for different types of use and obtain permits for campsites. Fires are only allowed in steel fire rings provided by the owners. The fees, comparable to those at local government parks, are used to maintain roadways, improve campsites and help clean up litter. The fees do not completely cover the management of the park for the public's use; the owners subsidize it with profits from logging operations.¹ The area is open seven months of the year, hosting more than 100,000 visitors annually.

¹ "Special Report: The Public Benefits of Private Conservation" in *Environmental Quality: The 15th Annual Report of the President's Council on Environmental Quality* (Washington, D.C.: CEQ, 1985); and the North Maine Woods Web site, available at <http://www.northmainewoods.org/>.

"Private forests are managed for sustainable multiple uses."

One," there is no reason to expect environmental harm from transferring public resources to private ownership. Indeed, there are reasons to think the ecology on some of these lands would improve. Individuals and private organizations in the United States have a long history of protecting environmentally valuable lands that predates efforts by the federal government. For instance:⁷⁷

- While state governments were awarding bounties for killing birds of prey, a concerned citizen helped found the private Hawk Mountain Sanctuary in eastern Pennsylvania to prevent the slaughter of thousands of hawks, falcons, ospreys, eagles, owls and other endangered birds.
- While state governments were awarding bounties for killing seals and sea lions, a for-profit corporation protected the only mainland breeding area for the endangered Steller sea lion.
- While the federal government owns only 4.7 million acres of wetlands and has encouraged the destruction of private wetlands, about 11,000 private duck clubs have managed to protect 5 million to 7 million acres of wetlands from destruction.

Also, the focus of many of the environmental organizations that could be expected to bid on any public lands put up for sale is to protect land in an untamed state. [See the sidebar “Private Organizations Protect the Environment.”]

“Private organizations protect millions of acres of wildlife habitat.”

Alternatives to Outright Privatization. For political reasons, it may be impossible to sell certain public lands. That does not mean forgoing all the benefits of private ownership of such lands. There are various mechanisms or institutional arrangements that would still bring many of the benefits of ownership without removing land entirely from public control.

For instance, it is unlikely the public would allow the federal government to sell crown-jewel national parks like Yellowstone or wilderness areas

Private Organizations Protect the Environment

Many private organizations do an excellent job of preserving and protecting land. For instance, the mission of the National Audubon Society is to conserve and restore natural ecosystems for the benefit of humanity and the earth’s biological diversity, focusing on birds and other wildlife. In the United States, the Audubon Society has more than 550,000 members, 508 state and local chapters and more than 100 Audubon Sanctuaries and nature centers comprising more than 300,000 acres.¹

The Nature Conservancy, a nonprofit organization founded in 1951, is the world’s largest private international conservation group.² Its mission is to preserve diverse plants and animals by protecting the lands and waters they need to survive. To carry out this goal, the Conservancy uses ecoregional planning, attempting to preserve at least one representative example of each unique ecosystem.

Rather than staging protests and lobbying governments, the Nature Conservancy protects species by purchasing habitat. It runs the largest private system of nature sanctuaries in the world. To date, the Conservancy and its 1,029,012 members have protected and maintained 15 million acres in the United States in nearly 1,400 private preserves, ranging in size from less than half an acre to several hundred thousand acres. This is an area greater than Connecticut, Delaware, New Jersey and Rhode Island combined. In addition, the Conservancy has helped like-minded organizations preserve more than 102 million acres in 27 countries, including Asia, the Pacific, Canada, Caribbean and Latin America.

The preserves are managed to maintain the ecosystem or habitat as a functional whole. The Conservancy hires biologists and ecologists and works with various academics to establish conservation priorities. The preserves are also field laboratories, dedicated both to studying specific ecosystemic goods and their interrelationships as protected by the specific preserve, and to better understand how to improve ecosystem management and protect biodiversity worldwide. The Conservancy does not promote the preserves for recreation, and many are not open to the general public.

¹ H. Sterling Burnett, “Ecosystemic Goods: The Pros and Cons of a Property Rights Approach,” Ph.D. Dissertation, Bowling Green State University, 2001.

² Nature Conservancy, “Answers to Frequently Asked Questions,” Fact Sheet, undated; available at <http://www.nature.org/pressroom/files/faq.pdf>.

like the Arctic National Wildlife Refuge. In such cases, Congress could establish Wilderness Endowment Boards to own and manage them, as suggested by economists Richard Stroup and John Baden.⁷⁸ These government-chartered, nonprofit entities, whose board members would be approved by Congress, would have a narrowly-defined fiduciary duty to protect and enhance the natural values of the land under their charge.

After some initial start-up federal funding — perhaps equaling the amount devoted to the management of each property in the previous few budget years — each board would be free to manage the lands as it saw fit, constrained only by its legislative charge. Each board would likely allow a variety of different activities. For instance, some would allow limited logging, fee-based hunting, and/or snowmobiling or other types of mechanized access. Other boards might allow limited resource production like mining or oil and gas extraction, while others still might ban all human use (exploitation) entirely.

None of these activities are necessarily incompatible with the goal of protecting the environment. Both the Audubon Society and the Nature Conservancy, for example, have historically allowed oil and gas production on some of their properties. They used the royalties to expand and improve their preserves. And many ranches and private forests noted for providing habitat for rare and endangered species or for preserving unique environmental features also allow commercial hunting and/or resource production.

Each individual board would decide how to balance use, recreational access and strict “off-limits” preservation, bound only by their understanding of what is necessary to preserve and enhance the land while generating the revenues necessary to manage it.

Reintroducing Competition. Public lands retained by the federal government could still receive some of the environmental benefits of ownership if there were competition within the public system between federal, state and local governments.⁷⁹

State and local foresters manage millions of acres. In contrast to federal forests, state forests often make money. They are also healthier environmentally. For example, teams of experts from federal and state agencies, environmental organizations and the timber industry in Montana and Minnesota compared the environmental effects of state and federal forest management practices.⁸⁰ They all concluded that state foresters better protected watersheds and waterways from the impacts of logging and other activities:

- In Montana, 99 percent of the watersheds in state forests were protected from all impacts from logging, compared to 92 percent in federal forests.

“Public lands could be turned over to nonprofit organizations.”

“State agencies could better manage some federal lands.”

- All impacts on state forest watersheds were minor and temporary, whereas 3 percent of the impacts on federal forests were minor but long-lasting, serious and long-lasting, or serious but temporary.
- In Minnesota, 90 percent of county lands had the highest compliance rate with “best management practices” for protecting water quality; federal forests had a slightly lower compliance rate at 87 percent.

In Montana, state forests also excelled by a second environmental quality standard: timber productivity (measured by annual growth rates). Federal foresters use clear-cutting and even-aged management, meaning all of the trees replanted in an area are the same species and age. State foresters make greater use of uneven-aged, selective timber harvests and selective thinning through logging and controlled burns. As a result, state forests grow faster:⁸¹

- From 1988 to 1992, among the national forests in Montana, Lolo National Forest had the highest average annual growth rate at 58 percent — more than 8 percent lower than state forests in the western region.
- In Montana’s southwest-central region, state forests averaged 67 percent of their productive potential, while the Lewis and Clark National Forest averaged only 30 percent. [See Figure III.]
- The Gallatin National Forest, an old growth forest in the southwest-central region, actually had a negative growth rate — more trees were dead or dying than growing.

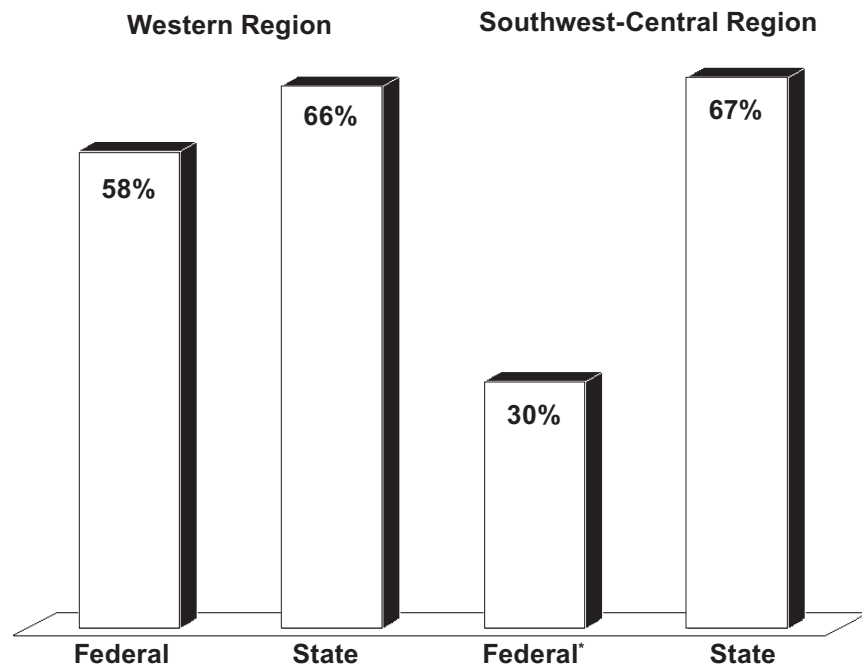
Since productive forests filter pollutants and resist landslides, the better water quality and superior timber management practices on state forests also benefit wildlife.

Congress could allow any state or county that demonstrates superior economic *and* environmental performance to take over the management of the national forests within their state or area. Congress could give fixed but declining block grants during a transition period to the forestry agencies that apply and allow them to retain any revenues generated. The program should be allowed to run for several years so state and county foresters could counteract the effects of federal mismanagement. At the end of the trial, states and counties that have improved a forest’s economic and environmental performance could be granted the forests outright and federal payments ended. If forests have not improved, they could be returned to federal control and new management experiments implemented.

This proposal should improve the environmental and economic performance of all public forests. Why? Because Forest Service managers — faced with a loss of revenues and authority — would have to improve performance

“State forests in Montana are more productive than federal forests.”

FIGURE III
Timber Growth in Montana’s Public Forests
(productive potential)



Source: Donald R. Leal, “Turning a Profit on Public Forests,” Political Economy Research Center, Policy Series No. PS-4, September 1995.

* This does not include the Gallatin National Forest, an old-growth forest, which actually had a negative annual growth rate.

to maintain control of federal forests. Underperforming state and county foresters would have an incentive to improve their performance in order to gain the opportunity to manage federal forests and thus benefit from greater authority and more revenue.

Some states have shown that the public can have the best of both worlds: public lands that are profitable and protected. If Congress allowed states to manage the federal lands within their borders, wildlife and U.S. taxpayers would benefit.

Applying Ownership to Ocean Fisheries

Marine resource management is plagued by faulty institutions that create incentives for overexploitation. These incentives should be eliminated and replaced with incentives for conservation. This can be done by extending the Bush administration’s concept of ownership to the ocean fisheries. But it will require three major policy changes:

- Ending subsidies and tax breaks that encourage overinvestment in commercial fisheries.

- Replacing the current command-and-control regulatory approach with a system of property rights.
- Encouraging cooperating countries to adopt similar property-based policies.

Some of these steps have already been taken with respect to some fisheries, with successful results.

Step One: End Subsidies and Tax Breaks. The first and arguably easiest step is to end subsidies to fishermen to purchase boats and other equipment. In addition, the government should end price supports that artificially increase the market value of fish, stop providing rebates on fuel and equipment, and stop giving money to ports for the construction of docks and other harbor facilities. To avoid the shock to the industry of removing these supports suddenly, they could be gradually phased-out over, say, five years. But it is important to bear in mind that a large percentage of the current fishing community would not be in business at all if not for federal support, because they would not be able to make a profit on the dwindling fish stocks.

Removing subsidies will help make fishing an economically healthier industry. It would eliminate the incentive of inefficient businesses to keep building boats and hiring deck hands, and give them an incentive to operate more efficiently or look for employment elsewhere. It would help already efficient fishermen by reducing the number of less efficient competitors and by allowing them to expand their operations.

Step Two: Create Property Rights. Even if subsidies are removed, the remaining fishermen will still have incentives to “race to fish” as long as they are competing for access to a resource they cannot own. Thus, the larger regulatory system must also be reformed. Applying the ownership ideal, the government should (to the degree possible) treat fish in the same way it treats livestock — as private property.

Under the property rights approach, resource users homestead, purchase or are assigned ownership rights to the specific resource. The rationale behind property rights in wildlife is that, unlike regulation, it creates incentives to conserve the wildlife for long-term exploitation and profit. As owners, fishermen will reap the benefits of wise use and bear the costs of overuse. Also, resources owned by individuals have protectors and defenders because owners have a self-interest in maximizing the value of their property.

Privatization of marine resources has worked where it has been tried. Indeed, even as government-operated fisheries continue to decline, privately-owned fisheries in the United States and other countries have prospered.

There is not a uniform system for applying property rights to all marine resources, but four approaches have been tried around the world so

“Eliminating fishing industry subsidies would reduce over-fishing.”

Individual Transferable Quotas

Individual transferable quotas (ITQs) are a way to correct the negative effects of America's command-and-control fishery policies. ITQs prevent overfishing by setting a limit, or total allowable catch (TAC), on the number of fish any single fisherman can harvest. Fishermen no longer have an incentive to "race to fish" because they are guaranteed a share of the TAC. Because fishermen can buy and sell their quotas in a competitive market, the least efficient fishing vessels will find it more profitable to sell their quotas rather than to fill them through fishing. This in turn reduces excess capacity and increases the efficiency of vessels operating in the fishery.

The ITQ system was first introduced in the 1960s when several countries began to look for ways to restore national lobster fisheries after decades of overfishing. Governments established a limit on the total number of traps and licenses that were issued to existing fishermen. New fishermen could only buy a license from one of the original fishermen. In this way, a system of property rights was established whereby each fisher owned a percentage of the traps used, without carving up plots on the ocean floor. Since the 1960s, more than 15 countries have established ITQs in ocean fisheries. They are used to manage 60 species, including four fisheries in the United States: Atlantic blue fin tuna, mid-Atlantic surf clam, Alaskan halibut and sablefish, and South Atlantic wreckfish.

New Zealand Fisheries. Kiwis have established the most successful ITQ system.¹ For several decades, New Zealand used a U.S.-style regulated open-access policy, with a combination of command-and-control regulations and subsidies. By the early 1980s, fish populations were depleted. For example, by 1983, catches of the country's most important commercial species — red snapper — had fallen 43 percent. The country introduced an ITQ system in 1986, and as a result, the fishing industry has come back from the brink of near collapse, breeding fish stocks are being maintained and the entire management system is 100 percent self-financing. The ITQ system was expanded to include 33 species.

*Canadian Sea Scallop Fisheries.*² ITQs have also worked well for Canada's Atlantic sea scallop industry. For decades, sea scallops were regulated by a combination of fishing quotas, seasonal restrictions and equipment regulations which resulted in too many boats chasing too few scallops. By the mid-1980s the sea scallop fishery was at about 50 percent of historic natural population levels.

In response, the Canadian government introduced a system somewhat similar to the lobster fisheries, issuing licenses to existing fishermen and restricting further entry. However, the government encouraged fishermen to consolidate their efforts by forming joint fishing enterprises. The system is called an "enterprise allocation (EA)" system — whereby portions of the TAC are given both to individual vessels and to companies, which can fill their quota in whatever way they choose. After two years, the government became even less involved in managing the fishery. Although the government continues to set the TAC, it allows companies and individuals to decide among themselves how the quota is broken up.

The success of the enterprise allocation system can be illustrated by comparing it to U.S. sea scallop fisheries during the same period. Like Canada, U.S. scallop fisheries were at about 50 percent of their natural levels by the mid-1980s. However, while Canada adopted property rights, the United

States turned to tighter regulations on fishing equipment. In Canada, the annual catch has risen fourfold, even as the size of the fishing fleet has dropped from 67 to 28 vessels and the population of scallops has increased to between 80 percent and 100 percent of its natural levels. In the United States, the annual catch has plummeted; there are now 200 vessels in the fishing fleet, and the scallop population is at about 20 percent of its natural levels.

¹ This description of the New Zealand case comes from multiple sources. See Donald R. Leal, “Homesteading the Oceans: The Case for Property Rights in U.S. Fisheries,” Political Economy Research Center, Policy Series PS-19, August 2000; Michael de Alessi, “Fishing for Solutions,” Institute of Economic Affairs, Studies on the Environment No. 11, July 1, 1998; Michael de Alessi, “Fishing for Solutions,” in Ronald Bailey, ed., *Earth Report 2000: Revisiting the True State of the Planet* (New York, N.Y.: McGraw-Hill, 2000), pages 85-114; and Kent Jeffreys, “Rescuing the Oceans,” in Ronald Bailey, ed., *The True State of the Planet* (New York, N.Y.: Free Press, May 1995), pages 295-338.

² Robert Repetto, “The Atlantic Sea Scallop Fishery in the U.S. and Canada: A Natural Experiment in Fisheries Management Regimes,” Yale School of Forestry and Environmental Studies, Discussion Paper, April 15, 2001.

far. These would serve as a good starting point for managing many marine resources:

- Allowing ownership of shore land that is covered with water at high tide as a way of managing clams, mussels and oysters.
- Allowing ownership of parcels of the ocean floor, so that individuals can create artificial reefs.
- Allowing individuals to “fence off” areas of the ocean as a way of managing migratory fish.
- Creating tradable rights, such as individual transferable quotas (ITQs), that entitle fishermen to a certain portion of the catch. [See the sidebar “Individual Transferable Quotas.”]

In each case, the goal is not to apply an inflexible, predetermined management technique to all types of resources, but to experiment with property rights and find techniques best suited to individual resources.

In the United States, property rights are used for four fisheries: Atlantic blue fin tuna, mid-Atlantic surf clam, Alaskan halibut and sablefish, and South Atlantic wreckfish. All four of the federal fisheries that have been privatized now have smaller fishing fleets, higher incomes for fishermen and larger, healthier fish stocks.⁸²

Since the early 1980s, 17 countries (including the United States) have introduced property rights for managing some of their fisheries, and in each case the condition of the fish stocks and the profits of the fishers have improved significantly. For example:

- In Iceland’s herring fisheries, the number of fishing vessels fell from 200 in 1980 to 30 by 1995; catches have fallen to sustainable levels, even as their value has risen dramatically.⁸³

“Individual rights to shares of the fish catch could be traded.”

- In 1986 New Zealand introduced property rights to manage 30 species of fish, including blue fin tuna, abalone and lobster, each of which has recovered from near collapse.⁸⁴
- In 1989, Australia's blue fin tuna fisheries were near collapse; but today, even though annual catches are 60 percent smaller, the incomes of fishermen have increased dramatically, the tuna fishery is now the most profitable in the Pacific⁸⁵ and property rights are now used to manage 15 species.⁸⁶

Evidence from these areas indicates that when fishermen no longer have a perverse incentive to deplete fish stocks, populations should rebound. Additionally, property rights holders will have the incentive to reduce the catch of sexually immature fish to ensure future populations. They will also reduce by-catch, meaning fish caught unintentionally, since catching and disposing of noncommercial fish wastes time and resources and can detrimentally affect the ecosystem. And, where possible, fishers will enhance the marine environment to increase fish stocks.

For fish species that have been successfully privatized in other countries, the United States should adopt similar methods in its own waters. For fish that have not been privatized elsewhere, the United States should experiment to find property rights systems that are suited to each species' habitat, migratory patterns and so forth. In every case, U.S. fisheries policy should be guided by experimentation and innovation.

Step Three: Expand Property Rights to Foreign Fisheries. The problems facing marine resources are not limited to American fisheries. Unlike herds of cattle or flocks of chickens, schools of fish move in and out of the jurisdictions of different countries. The population levels in various fisheries are interconnected. This means effectively managing fish with property rights in one locale will not always work unless other countries follow suit. Otherwise, some fish species will thrive in American waters, only to be overfished when they migrate into foreign fishing grounds.

For this system to work, subsidies to all fishers everywhere must be abolished and fish must have protectors and defenders wherever they may go. This can be accomplished through both bilateral agreements with individual countries or through multilateral international conventions. The prospects for international cooperation on this score are good. In terms of subsidies, there is already an international movement to reduce the \$20 billion spent on subsidies worldwide.⁸⁷

Owning the Oceans' Other Resources. Individuals are largely prohibited from acquiring rights to other ocean resources and acting to protect those rights. Under the current system, for example, if an individual submerges an oil rig and creates a coral reef, he cannot reap the economic

"Privatized fisheries are managed for sustainable profitability."

benefits by charging visitors for snorkeling, scuba diving and fishing. He would also not be able to prevent human activities that are harmful to the reef or press claims against ocean liners and oil tankers that pollute the surrounding waters.

There are three steps the government could take that would allow people to develop rights in marine resources. First, as with fisheries, the government should end subsidies and other programs that encourage overfishing, overfarming and overdevelopment on the coasts. Second, the government should end attempts to regulate the use of oceans by private individuals, other than clear cases of causing physical harm. Third, with the executive and legislative branches of government uninvolved, the courts should have jurisdiction to hear cases involving disputes over the use of ocean resources.

These three steps would allow fishing, recreational and other private groups to establish property rights in marine resources that they could then defend against polluters and other unwelcome exploiters. In time, a variety of property rights regimes would arise unique to the conditions of the resources; that is, the system of rights for migratory species could be different from the rights that develop for stationary marine resources.

Property rights in the ocean can evolve where they pose significant advantages over the system of an open-commons — just as they did on land. As courts rule on disputes between rights claimants, boundaries to property rights will be developed and defined. Over time, multiple, legally consistent rulings will establish precedent, giving rights claimants certainty in their possessions.

“Property owners are responsible for the use of their resources.”

Conclusion

President Bush’s innovative concept of the ownership society is indebted to Western intellectuals. Great thinkers from Aristotle to Locke to the American founders recognized that secure individual property rights are an effective means of promoting both individual happiness and social welfare, and of maintaining political liberty. However, they did not recognize that property rights could also be used effectively to protect the environment.

People typically use their property to increase their well-being, which, as Adam Smith argued, redounds to the benefit of society. But property use comes with responsibilities. First, property owners bear the costs of the bad decisions they make with their property if their choices result in economic losses or in the destruction of the property itself. Secondly, they have the responsibility to use their property in ways that do not violate the rights of others — and should be penalized when they do.

Government ownership and management of natural resources severs the link between the decisions of those using the resources and the negative

consequences of their choices. It leads to a variety of economic ills, but also results in environmental destruction. Applying the concept of the ownership society would reduce incentives to destroy the environment. Indeed, it could create positive incentives for entrepreneurs to provide or expand environmental amenities on privately owned land, including former federally owned land, and to protect and enhance the world's fisheries.

NOTE: Nothing written here should be construed as necessarily reflecting the views of the National Center for Policy Analysis or as an attempt to aid or hinder the passage of any bill before Congress.

Notes

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⁴ John Baden, “Destroying the Environment: Government Mismanagement of Our Natural Resources,” National Center for Policy Analysis, Policy Report No. 124, 1986.

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¹⁰ For instance, the population of deer in the Kaibab Plateau region of the Grand Canyon exploded from approximately 15,000 in 1918 to as many as 100,000 by 1923. In 1924, 60 percent of the deer died of starvation. See John Baden, “Destroying the Environment: Government Mismanagement of our Natural Resources,” National Center for Policy Analysis, Policy Report No. 124, 1986.

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¹³ Dan Berman, “NPS Urges Congress to Avoid Changing the Organic Act,” *Greenwire*, December 14, 2005.

¹⁴ Defenders of Wildlife, “Wildlife: Wolves,” Web page, undated; available at <http://www.defenders.org/wildlife/new/wolves.html>.

¹⁵ Dan Berman, “NPS Urges Congress to Avoid Changing the Organic Act,” *Greenwire*, December 14, 2005.

¹⁶ *Ibid.*

¹⁷ *Ibid.*

¹⁸ At first, national forests were interchangeably called forest reserves or timber reserves.

¹⁹ “Land Areas Report: Table 1 – National and Regional Areas Summary,” U.S. Forest Service, September 30, 2005; available at <http://www.fs.fed.us/land/staff/lar/LAR05/table1.htm>.

²⁰ This mandate was made clear during the debate in Congress that established the Forest Service; the agency was placed within the Department of Agriculture (as opposed to the Department of Interior). According to Agriculture Secretary James Wilson, writing in a letter to the first Chief of the Forest Service, Gifford Pinchot: “The permanence of the resources of the reserves is therefore indispensable to continued prosperity, and the policy of this department for their protection and use will invariably be guided by this fact, always bearing in mind that the conservative use of these resources in no way conflicts with their permanent value. You will see to it that the water, wood, and forage of the reserves are conserved and wisely used for the benefit of the

home builder first of all, upon whom depends the best permanent use of lands and resources alike.” See “James Wilson to The Forester, Forest Service, February 1, 1905,” letter, U.S. Forest Service Headquarters History Collection; available at http://www.lib.duke.edu/forest/Research/usfscoll/policy/Agency_Organization/NF_System/Wilson_letter.pdf.

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³⁷ Thomas Bonnicksen, “Dooming Woods and Wildlife,” *Washington Times*, September 17, 2006.

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⁴² Ibid.

⁴³ Ibid.

⁴⁴ Jeff Edgens, “Banning Roads, Burning Forests.”

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About the NCPA

The NCPA was established in 1983 as a nonprofit, nonpartisan public policy research institute. Its mission is to seek innovative private sector solutions to public policy problems.

The center is probably best known for developing the concept of Medical Savings Accounts (MSAs), now known as Health Savings Accounts (HSAs). The *Wall Street Journal* and *National Journal* called NCPA President John C. Goodman “the father of Medical Savings Accounts.” Sen. Phil Gramm said MSAs are “the only original idea in health policy in more than a decade.” Congress approved a pilot MSA program for small businesses and the self-employed in 1996 and voted in 1997 to allow Medicare beneficiaries to have MSAs. A June 2002 IRS ruling frees the private sector to have flexible medical savings accounts and even personal and portable insurance. A series of NCPA publications and briefings for members of Congress and the White House staff helped lead to this important ruling. In 2003, as part of Medicare reform, Congress and the President made HSAs available to all non-seniors, potentially revolutionizing the entire health care industry.

The NCPA also outlined the concept of using tax credits to encourage private health insurance. The NCPA helped formulate a bipartisan proposal in both the Senate and the House, and Dr. Goodman testified before the House Ways and Means Committee on its benefits. Dr. Goodman also helped develop a similar plan for then presidential candidate George W. Bush.

The NCPA shaped the pro-growth approach to tax policy during the 1990s. A package of tax cuts, designed by the NCPA and the U.S. Chamber of Commerce in 1991, became the core of the Contract With America in 1994. Three of the five proposals (capital gains tax cut, Roth IRA and eliminating the Social Security earnings penalty) became law. A fourth proposal — rolling back the tax on Social Security benefits — passed the House of Representatives in summer 2002.

The NCPA’s proposal for an across-the-board tax cut became the focal point of the pro-growth approach to tax cuts and the centerpiece of President Bush’s tax cut proposal. The repeal by Congress of the death tax and marriage penalty in the 2001 tax cut bill reflects the continued work of the NCPA.

Entitlement reform is another important area. With a grant from the NCPA, economists at Texas A&M University developed a model to evaluate the future of Social Security and Medicare. This work is under the direction of Texas A&M Professor Thomas R. Saving, who was appointed a Social Security and Medicare Trustee. Our online Social Security calculator, found on the NCPA’s Social Security reform Internet site (www.TeamNCPA.org) allows visitors to discover their expected taxes and benefits and how much they would have accumulated had their taxes been invested privately.

Team NCPA is an innovative national volunteer network to educate average Americans about the problems with the current Social Security system and the benefits of personal retirement accounts.

In the 1980s, the NCPA was the first public policy institute to publish a report card on public schools, based on results of student achievement exams. We also measured the efficiency of Texas school districts. Subsequently, the NCPA pioneered the concept of education tax credits to promote competition and choice through the tax system. To bring the best ideas on school choice to the forefront, the NCPA and Children First America published an *Education Agenda* for the new Bush administration,

policy makers, congressional staffs and the media. This book provides policy makers with a road map for comprehensive reform. And a June 2002 Supreme Court ruling upheld a school voucher program in Cleveland, an idea the NCPA has endorsed and promoted for years.

The NCPA's E-Team program on energy and environmental issues works closely with other think tanks to respond to misinformation and promote commonsense alternatives that promote sound science, sound economics and private property rights. A pathbreaking 2001 NCPA study showed that the costs of the Kyoto agreement to halt global warming would far exceed any benefits. The NCPA's work helped the administration realize that the treaty would be bad for America, and it has withdrawn from the treaty.

NCPA studies, ideas and experts are quoted frequently in news stories nationwide. Columns written by NCPA scholars appear regularly in national publications such as the *Wall Street Journal*, the *Washington Times*, *USA Today* and many other major-market daily newspapers, as well as on radio talk shows, television public affairs programs, and in public policy newsletters. According to media figures from Burrelle's, nearly 3 million people daily read or hear about NCPA ideas and activities somewhere in the United States.

The NCPA home page (www.ncpa.org) links visitors to the best available information, including studies produced by think tanks all over the world. Britannica.com named the ncpa.org Web site one of the best on the Internet when reviewed for quality, accuracy of content, presentation and usability.

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