

Why conservation matters and what we can do about it

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While environmental and economic needs have long been considered to be in direct opposition to one another, a new approach to environmental conservation is emerging. Called the "ecosystem" approach, it focuses not only on protecting the environment and its species, but also seeks new ways of balancing these interests with human needs. The article is drawn from a speech delivered by the author--John C. Sawhill--at the Summer Lecture Series of the College of the Atlantic, Bar Harbor, Maine, on August 2, 1994. Mr. Sawhill outlines the conservation principles that guide The Nature Conservancy and provides examples of how the ecosystem approach has led to successful outcomes for both people and the environment.

John C. Sawhill

I could begin by telling you how bad things are. After all, with problems ranging from deforestation in the tropics to declining fish stocks here in New England, there is plenty to talk about. But you have read these stories of doom and gloom before. Personally, I find the negativity that pervades so much environmental rhetoric these days more than a little tedious. Instead of talking about solutions to problems, I more often hear portentous statements about the end of life on Earth. It reminds me of the opening of Woody Allen's *Speech to Graduates*: "More than any other time in our history," Woody said, "mankind stands at a crossroads. One path leads to despair and utter hopelessness. The other, to total extinction. Let us hope that we have the wisdom to choose correctly."

When it comes to the environment, let us hope that we have the wisdom to choose neither of these alternatives. And I say this for two basic reasons. First, because the environment matters. Protecting our natural heritage involves high stakes and real consequences. And second, because there really is a better way, one that forward-looking conservationists are exploring right now. I want to elaborate on some of the new approaches to conservation that have evolved in recent years; you'll forgive me if I place a special emphasis on how The Nature Conservancy has chosen to tackle the challenges of conservation in the 1990s.

To put this all in context, however, I will start with a brief introduction to the Conservancy. Quite simply, our mission is to preserve plants, animals, and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. Obviously, this is an extremely complex task, and to describe all of the different ways we pursue our mission would require a long and tedious list. So I want to concentrate on the three basic principles that guide our work.

First, The Nature Conservancy is committed to a non-confrontational, market-oriented approach to conservation. We call this "conservation through private action." We use private-sector techniques to achieve our objectives, and, like the private sector, we rigorously measure our performance against results. Our institutional culture places a premium on entrepreneurship and

creative solutions. For evidence of this, look at our staff. Of our 1,800 employees, we have very few lobbyists patrolling Capitol Hill, but a whole lot of MBAs, lawyers, and real-estate professionals. As I like to say, we protect the environment the old-fashioned way. We buy it.

Second, we are a science-driven organization. The Nature Conservancy was founded by scientists, and good science has remained a hallmark of our organization. Among other things, we maintain the nation's most complete inventory of the locations of rare plants and animals. This inventory, called the Natural Heritage program, helps us set our protection priorities so that we concentrate our efforts on the most ecologically important sites. Although we appreciate the value of beautiful landscapes as much as anyone else, unless the place harbors rare species, we will not try to save it. To put it another way, we're in the science business, not the pretty business.

Third, The Nature Conservancy believes in partnerships. We have discovered that, in many cases, the best way to get things done is to join forces with like-minded people. We seek out mutually beneficial partnerships with a wide variety of individuals and organizations, including businesses, government, other non-profits, and academic institutions. We will work with anyone who will help us achieve our mission, from corporate giants to individual farmers and fishers. Just look at our list of national and state trustees. Can you think of any other nonprofit that has engaged the volunteer services of both General Norman Schwarzkopf and Jane Fonda?

By sticking to these three principles, the Conservancy has achieved some impressive results. In the United States alone, we have protected almost 8 million acres of wildlife habitat — an area somewhat less than half the size of Maine, but larger than either Vermont or New Hampshire. We operate out of more than 100 offices and have programs in some two dozen countries. We manage 1,500 preserves—the largest private system of nature sanctuaries in the world.

More than 80 of those preserves are right here in Maine. The Maine chapter passed a significant milepost in fall 1993. By completing two land protection projects in a single day—one in York County, the southernmost county in the state, and one in Aroostook, the northernmost—the Conservancy passed the 100,000-acre mark in land protected in Maine.

The Aroostook County project delivered the 1,800-acre Salmon Brook Lake Bog to the people of Maine through the Land for Maine's Future Board. In York County, we doubled the size of our newest preserve in Maine, the Waterboro Barrens, by purchasing a second 1,000-acre parcel. This preserve now protects more than 2,100 acres of boreal pine barrens, a worthy companion to the federally-protected New Jersey Pine Barrens.

This should indicate what The Nature Conservancy does and how we do it, both nationally and here in Maine. But what I have not addressed is the broader question of why our mission is important. Why should we protect wildlife habitat and save rare species? Why does biodiversity matter? In short, why care?

For many of us, the answers to these questions may seem self-evident. Many, perhaps most, of my readers share a deep aesthetic appreciation for nature—a love of the beauty of pristine landscapes. Others of us literally need nature to restore our spirits. E.O. Wilson of Harvard, a

member of the Conservancy's national Board of Governors, calls this "biophilia" and has written a fascinating book on the subject. Nonetheless, I think that these are relevant questions that require sound responses, especially in the current political and economic climate. Conservationists must be able to present a compelling argument about preserving natural areas and biodiversity, lest this priority become lost in a welter of other issues.

Beyond our gut reaction that conservation is right, what else can we say? There are a myriad of sound economic and utilitarian arguments for protecting the biodiversity and the natural areas that support life. Examples abound of rare plants that have led to breakthroughs in medicine or about strains of blight-resistant crops that have averted agricultural catastrophe. At the same time, I have read a number of persuasive studies that link environmental quality to economic health. One in particular, by an MIT economist, found that economic growth in states with strong environmental policies was double that of states with weak environmental controls.

Then we can always look at the reverse—at what has happened in places where environmental protection and resource conservation have been deliberately sacrificed for other goals. A very sad and graphic portrayal of the consequences of such a policy can be found in a recent National Geographic, which features a harrowing story about Russia's environmental problems. Read the story and look at the pictures and you get a whole new perspective on conservation. Suddenly those expensive clean air and water regulations that Americans grumble about start to make a great deal of sense.

For instance, you would find that in one major Russian industrial center, a full third of the population suffers from chronic respiratory ailments such as asthma and bronchitis. You would find that 15 percent of the entire budget for Ukraine is spent on the aftermath of the Chernobyl disaster alone. And according to one estimate I have read, as much as 20 percent of the entire gross domestic product of the former Soviet Union is spent dealing with the public health and environmental consequences wrought by 70 years of neglect.

But the most compelling argument for conservation is not a matter of aesthetics, or economics, or history. Instead, it is plain old self-interest. In short, the environment lies at the very foundation of human existence. The environment is our global life-support system and provides our food, water, air, and natural resources—the basic necessities of life. And the so-called web of life is more fragile than you might imagine. Indeed, the elimination of just one element can have a profound effect on the rest of the system, and the more we unravel the basic ecological balance of the planet, the greater the danger. Frankly, a world that can't support plants and animals won't be able to support us for very long either.

A classic case of this dynamic in action concerns the Pacific sea otter, which lives off the California coast. Now, otters are like a poster child for the environmental movement. They are cute and cuddly and a guaranteed revenue-generator for direct mail. They are doing pretty well these days, but less than 100 years ago, otters were in serious trouble.

Around the turn of the century, otters were hunted to the brink of extinction for their pelts. There were only about 1,000 left when they were protected from hunting. But as the otter population declined, people began to notice some curious changes in the Pacific coastal ecosystem.

Populations of eagles, harbor seals, and fish began to decline dramatically as well. The fishing industry went into a tailspin.

So what happened? The answer lies in the rich beds of kelp that grow off the coast. Kelp forms the bottom rung in a very complex food chain. It nourishes the marine life that feed the fish that are eaten by eagles and seals. As it turned out, the kelp beds were being cut loose from the ocean floor by sea urchins, whose primary predator was—you guessed it—the sea otter. When the otter was protected, the urchin population dropped, the kelp flourished, the eagles and seals returned, and the fishing industry rebounded.

Despite this kind of evidence of the close linkages between people, habitats, and species, it has only been relatively recently that the environmental community has tried to address these linkages in terms of on-the-ground protection activities. At The Nature Conservancy, for example, we have undergone a dramatic evolution in our conservation strategies as we have learned more about the delicate balance between ecosystems and biodiversity.

Our experience mirrors similar shifts in approach throughout the conservation world. Let me expand on this point by going backwards for a minute. For four decades, the Conservancy focused almost exclusively on setting aside critical habitat for endangered species. In practice, that meant buying the specific piece of wetlands or forest or prairie that supported a particular species or natural community. Like a modern-day Noah, the Conservancy was intent on building an ark—or, more accurately, building a lot of little arks.

This strategy of acquiring and setting aside lifeboats for biodiversity worked well, and we protected many nationally and even globally significant places. But in recent years, many of our lifeboats have sprung leaks. What goes on outside our nature preserves can have profound effects on the balance of life inside. Consulting with our conservation colleagues, from both the public and nonprofit sectors, as well as the scientific community, it became clear that this "inside-outside" problem with protected areas has reached global proportions.

Let me illustrate with something from our experience. In 1983, the Conservancy bought a place called Pendleton Island, in Virginia's Clinch River. The shoals just off the island supported an amazingly diverse population of freshwater mussels—something like 45 different species, including three on the federal endangered species list. I realize that for most of us mussels do not evoke the same emotional reaction as, say, an otter or bald eagle or panda. But freshwater mussels happen to be the most endangered family of species in North America. More than ten percent have gone extinct in this century, and three quarters of the rest are either rare or imperiled. And that means trouble.

Mussels are filter feeders and are very sensitive to changes in water quality. Anything toxic in the water column, even in relatively small quantities, can wipe out whole populations of mussels. In that way, mussels are like the canary in the coal mine for freshwater rivers-- a classic indicator species.

At the Clinch River, The Nature Conservancy has gotten a taste of what can happen. Since acquiring Pendleton Island, 10 of the 45 mussel species we'd been trying to protect have

disappeared. Three more are thought to be extinct. And another 14 have been added to the endangered list.

As you can imagine, we found this trend extremely disturbing. We had invested a lot of money in Pendleton Island to save mussels, but it was not getting the job done. Belatedly, we realized that we were at the mercy of activities happening far upstream from our holdings. A chemical spill or farm run-off originating 50 miles upstream was just as effective in killing mussels as if someone had ripped out the beds with a backhoe. But what could we do about it?

Enough experiences like this have led conservationists around the world to embrace what has been called an "ecosystem approach" to conservation. Instead of concentrating on the lifeboats of biodiversity, conservationists are trying to work in the broader sea—the larger ecosystems, landscapes, and watersheds that support these lifeboats. Think of it this way: How can simply protecting parcels of land, no matter how big, ensure the long-term survival of aquatic species, such as mussels; migratory birds or animals with wide ranges; or species that depend on natural processes such as regular wildfires or flooding?

I should add that a basic tenet of the ecosystem approach is not to create larger protected areas, but rather to integrate outside influences, natural processes, and human economic activity into conservation planning. For instance, at Pendleton Island, the ecosystem approach might mean working with timber companies in the watershed to leave forested buffer strips along the riverbanks, or with local municipalities to improve sewage treatment. Or it might entail something as simple as reaching out to local farmers to encourage them to fence streambanks.

This raises another interesting point. We have found that often the solutions are not always especially expensive, complicated, or controversial. Rather, it's just a matter of taking the initiative. And in many cases solutions may even have multiple benefits. For instance, streambank fencing not only benefits Clinch River mussels by reducing upstream erosion and water contamination, but also benefits farm operations by reducing incidents of water-borne diseases in cows and improving the quality and condition of land bordering the river.

In fact, the ecosystem approach is not only about protecting species. Equally important, it seeks to find new ways of balancing competing economic and environmental interests. The reason for this is simple. People live and work in these ecosystems and often have done so for hundreds of years. Any conservation strategy that does not address the legitimate economic aspirations of the local residents will surely fail. On the other hand, if we can demonstrate that people and nature can live in harmony—if we show that environmental protection and economic development are not mutually exclusive—then we will have made substantive progress toward conserving our natural resources for ourselves and for future generations.

These general principles have gained wide acceptance in conservation circles, as epitomized by the work of the United Nations' "Man and the Biosphere" program and the groundbreaking conceptual work of the Brundtland Commission on sustainable development. And around the world, although primarily in developing countries, various public and private agencies have launched pilot projects and programs to test the practical limits of these theories.

The Conservancy believes that it has something to offer this process. In 1991 we embarked on an ambitious new program to translate the principles of the ecosystem approach into action. Called the "Last Great Places" campaign, the program seeks to protect 75 large-scale, species-rich ecosystems across the United States as well as in Latin America, the Caribbean, and the Pacific Rim. At each of these sites, we seek to create working models of compatible development—that is, to integrate economic, environmental, and community interests.

Let me give you some quick examples of what our "Last Great Places" program means in practice. The Conservancy's flagship conservation project is the Virginia Coast Reserve. About 25 years ago, The Nature Conservancy acquired the first of a chain of undeveloped barrier islands just off the coast of Virginia. Over time, we have protected 14 islands along with strategic holdings on the mainland, encompassing some 50,000 acres. Today this area represents the longest stretch of undeveloped coastline on the Atlantic seaboard.

Over the years, the Conservancy has come to recognize that uncontrolled, poorly planned development on the mainland could destroy the ecological integrity of the islands in which we had invested so much. And the pressures for such development have been mounting. This area is one of the poorest in the state of Virginia, a place where a quarter of the homes are without running water. The challenge was clear: how could we preserve the shore's natural values while addressing the needs of the local community?

On the ecological front, we continue to carry out our traditional work of acquiring key parcels to set aside as nature sanctuaries. And we are proceeding with scientific surveys of existing sites to better understand how the ecosystem works so we can better protect it.

On the economic front, the Conservancy and others are working to encourage environmentally sound development such as low-density housing and "clean" industries. Just a few months ago, the Conservancy took the unprecedented step of forming a separate, for-profit corporation to develop and market local products such as seafood, produce, and rural crafts.

Finally, to integrate the community into our efforts, we are reaching out in partnership to the individuals who live and work in the area. For instance, we are working with local planners to ensure that new wastewater treatment facilities do not degrade the area's outstanding water quality. We are trying to help local farmers reduce unnecessary agricultural runoff and we are working with local fishers to minimize overfishing pressures. Our objective is to find solutions that allow local industries to continue their operations at profit while still protecting the shore.

What sets the Last Great Places initiative apart is the belief that people are as much a part of ecological communities as the plant and animal species. It is also defined by creative partnerships, and these are often the key to overcoming ideological obstacles such as the perception that environmental goals are in conflict with economic ones. For example, in Indiana, The Nature Conservancy is trying an innovative strategy to protect a place called Fish Creek from the dangers of agricultural run-off. In this watershed we subsidize farmers who want to purchase expensive "no-till" farming equipment, to the tune of 15 percent of the purchase price. Why? Because no-till farming techniques help reduce erosion and chemical inputs, which in turn advance our ecological goals. At the same time, this program has helped the Conservancy

solidify a strong base of community support. And the farmers have seen immediate benefits, both ecologically and economically.

Conservationists are currently engaged in hundreds of similar pilot projects designed to illustrate how different economic activities—farming, fishing, ranching, logging, mining, oil drilling, and a host of others—can be carried out in a manner that benefits both people and the environment. Here in Maine, a sustainable communities project is well under way. People from a variety of backgrounds have been working together to share their visions for protecting Cobscook Bay's natural and economic resources. They have made real progress, from what I understand, and are now ready to take concrete action: a proposed clam flat restoration project may well be a model for the entire area. The Nature Conservancy has been offering all the help we can, because we believe that in Cobscook Bay the health of that ecosystem and the local economy are inextricably intertwined.

The types of activities that flow from the ecosystem approach are already happening, in places both close to home and far away. And The Conservancy is not alone. The current administration, particularly Interior Secretary Bruce Babbitt, is enthusiastically promoting the ecosystem approach as a way of averting the kind of "train wrecks" over endangered species that we have seen with the spotted owl in the Pacific Northwest. In the developing world, both government funders and multilateral institutions are reforming their criteria so that development projects pay attention to human and environmental costs.

All this I find encouraging, because the ecosystem approach represents the best hope for the future of our natural heritage. It makes sense, not only to ecologists and biologists, but also to farmers, fishers, ranchers, and everyone else whose livelihood ties them to the land. And it provides what previous conservation efforts have not: A vision of a world in which environmental imperatives and human needs meet in healthy balance.

Will it work over the long term? To be honest, the jury is still out. But if anything, this should inspire us to push ahead—not for the sake of novelty, but to test the limits of our knowledge and ability. These are truly new, even radical concepts, and they are well worth the effort. We know from bitter experience that none of the other ways we have tried to protect biodiversity have ensured the long-term survival of species; it is time to try a new way.

I come back to the crossroads that Woody Allen spoofed so wonderfully. As a society, we really do have some stark choices when it comes to protecting the environment. As Woody would say, one path—the path of business as usual—leads to total extinction. But the other, embodied by the ecosystem approach, offers hope and possibility. In the final analysis, how difficult is that choice?

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