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## Economic Values of Wildlife and Fisheries<sup>1</sup> —What Importance are Those Values in Decision Making?—

*Al Lovaas*

**T**hese are unusual questions for me to answer. We—or at least I—seldom think of fish and wildlife in National Park System areas in an economic sense. We usually approach natural resource situations and problems from a different perspective, in my opinion, and I'll spend most of the rest of my time trying to explain. Of course, fish and wildlife in National Parks are economically valuable, both directly and indirectly. A direct value is sport fish used for food. And fish, meat and furs taken in Alaskan areas by sport and subsistence users are locally important. But these direct values pale in comparison to indirect values. Fish and wildlife help attract millions of visitors to National Parks each year, generating many millions of dollars in expenditures. Those dollars benefit the travel and tourism industries and trickle or flood through much of the national economy. If I understand what I think I learned from the paper by the economists yesterday<sup>2</sup>, I guess those dollars changing hands represent financial values rather than economic values. But the economists also noted fish and wildlife have positive economic values by possessing the essential properties of providing satisfaction and enjoyment to consumers and of being scarce, in that consumers want more than are available. That's deep enough into economic theory for the purposes of my talk. Commercial photographers also cash in on the attractions of

fish and wildlife in national parks and area entrance fees provide Federal income.

Rephrasing the title slightly, (1) does the U.S. National Park Service treat fish and wildlife as special resources because they are economically valuable? My answer is no; (2) are those values important in decision making? My answer is yes, they are very important. If that sounds incongruous, I'll try to explain, taking each question in turn.

The U.S. National Park Service is Congressionally-mandated to provide for enjoyment of its areas while leaving them unimpaired for future generations. We try to protect total natural environments or ecosystems. Only in a few areas are we given special responsibilities for protection of individual species or features. We try to maintain ecological processes and minimize impacts brought about by the actions of people. In Alaska, we are directed by the Alaska National Interest Lands Conservation Act (ANILCA) to protect environmental integrity; and to assure continuation of biological processes unimpaired by adverse human activity. Under such mandates individual parts of the environment, such as fish and wildlife, cannot be singled out for special consideration just because they are more economically valuable than other parts.

Fairly heavy stuff! Now for some examples—consider a moose in a national park. Sighting a moose or other wildlife is a highlight for most visitors. But people don't travel thousands of miles and spend hundreds of dollars just to see a moose—even the most rabid mooseophyles among them. If they want to see a moose, they can get a much closer look at a local zoo. They come to the park hoping to see a wild, unfettered moose or other wildlife in natural, unspoiled habitat. The greater the human influence on the scene, the lesser the enjoyment and appreciation of the experience. Would the parks be as attractive without the wildlife? I'd say not nearly as much. That gives greater economic value to the wildlife, but not greater ecologic value.

For further examples of lack of special treatment for economically valuable species, I'll point out some of the things we **don't** do in national parks. We don't manage for sustained yields or multiple use; we don't plant fish to improve fishing; we don't, anymore anyway, kill predators to save Bambies; we don't manipulate habitat to produce more fish and wildlife; we don't fertilize lakes to improve fish production and, in fact, we are planning to remove an out-of-place fish ladder from an Alaskan park, which is almost heresy to some Alaskans. We don't even introduce such magnificent species as Merriam's turkeys to areas where they are not indigenous.

As an enthusiastic hunter and fisherman myself, and I especially miss turkey hunting at this time of the year, I want to explain that I do not believe there is anything intrinsically wrong with use of manipulative practices in fish and wildlife management. That is, if those practices are carried out in appropriate places, which do not include the national parks. The nation obviously needs development of natural resources. But it also needs the less than four percent of its

area which is preserved in the National Park System. That is indicated by millions of annual visitors, making overuse the greatest danger to many parks. Management goals for national park areas are different, not necessarily better or more noble, than goals for most other areas. We do at times manipulate habitat or species, not because they are economically valuable, but only to compensate for disruptions that occurred in the past or unavoidably occur now.

For another example, ANILCA allows subsistence and sport hunting, fishing, and trapping in many national parks in Alaska. But ANILCA emphasizes protection of environmental integrity by requiring maintenance of natural and/or healthy populations of fish and wildlife. It subordinates harvests and yields to that requirement.

To sum up so far, I maintain that fish and wildlife in national parks have economic values; that we do not treat fish and wildlife any differently than any other resources just because they have those values; but rather that we treat fish and wildlife like all other components of natural ecosystems.

Now, for question two. Of what importance are the economic values of fish and wildlife in decision making? I said they are very important and I will try to explain why.

Again, fish and wildlife in national parks are economically valuable because they have special attraction to visitors and other users. Those uses must be balanced against the disruptions they can cause to the natural environment.

For some examples, I'll stick to Alaska this time. Nearly all of our fish and wildlife management here is management of people. How do you manage a humpback whale? Obviously you don't. But, when the endangered whales left Glacier Bay precipitously in the late 1970s the park responded by putting tight restrictions on vessel entries, including cruise ships, and we spent quantities of dollars quickly on whale research. Some of the expenditures were spurred along by members of Congress, newspaper editors, and others of influence. The National Marine Fisheries Service helped us with the research. Our goal was preservation of an endangered species as part of the environment while determining and allowing acceptable use levels. Another example, the increasing sportfishing of rainbow trout in Katmai National Park and Preserve, much of it generated and serviced by commercial guides, led us to fund a study to evaluate the condition and use of the fishery. This study was done cooperatively with the Alaska Department of Fish and Game and the U. S. Fish and Wildlife Service. Our purpose was to determine how to preserve the fishery as a vital part of the ecosystem while allowing its use. Obviously economic activity in the area will suffer if the fishery is damaged but, while we are well aware of that, our primary responsibility is to the total environment. Another example, apprehension about effects of traffic on observability of wildlife along the Denali National Park road led us to a high-priority study which was recently published in *Arctic*. Denali wildlife attracts thousands of viewers. Traffic is restricted and most viewers are required to ride buses to reduce disturbance to the wildlife. The study results reinforced the need for the traffic

restrictions. But by far the greatest expenditures of fish and wildlife research and monitoring dollars in Alaska are on populations consumptively used for sport and subsistence. The purpose is to maintain natural and healthy populations through regulation of human activity, not to develop ways and means to improve or enhance the populations. A final example: bears and sport fishing are prime visitor attractions at Katmai. Based on research and observations, we recommended to the Alaska Board of Fisheries this year that the bag limit for salmon should be reduced at Katmai; for bear protection, not salmon protection. In the recent National Geographic Society TV special on the grizzly were scenes of fishermen and fisherbears elbowing each other for space along the banks of the Brooks. While we can't reduce the fishermen's determination to catch their limits, we can reduce the limits, and thus reduce their periods of most intensive angling concentration and competition with the bears. The result should be safer fishermen, and a more natural bear population.

As a matter of fact, immediate problems, including those with economic considerations, influence decision-making so much that other, just as important but less crisis-oriented research and management, suffer. Consequently, the National Park Service is renewing an initiative for natural resource inventory and long-term monitoring. Inventory and monitoring have been neglected through the years because of the lack of immediate payoff. By inventory we mean acquiring, managing, and analyzing information on resources; including presence, distribution, and condition of plants, animals, water, soils, air, natural features, land cover, and natural processes<sup>3</sup>. By long-term monitoring we mean systematic data collection on the condition of those resources over time, largely to detect natural and man-caused changes; to assess effects of the changes; and to direct appropriate actions<sup>3</sup>. A related effort is protection of genetic diversity. Unfortunately, funding for the short-term is much easier to get than funding for long-term. This time, however, initial funds are available and we have commitment all the way from the top through Director Mott's Twelve-Point Plan for the National Park Service. We believe this initiative holds more promise for management of natural environments than the more crisis-oriented projects which predominate today. For example, for years an unquestioned policy of complete fire suppression was a key management strategy. We would have realized the error of our ways much earlier through natural resource inventory and monitoring. Possibly similar discoveries lie in wait. We are pleased that the draft U. S. Arctic Research Plan, prepared under the Arctic Research and Policy Act, places emphasis on long-term monitoring for all Federal lands in that area.

To sum up again, and finally, fish and wildlife in national parks do not get special treatment because they are economically valuable. But, they **are** economically valuable because they are consumptively and/or nonconsumptively used. That **use** is what is important in decision-making. It can disturb natural environments and ecosystem processes by impacting the fish and wildlife components and thus it results in special treatment.

Nobody—not in the U. S. National Park Service, anyway—ever claimed that maintaining natural environments while providing for their use and enjoyment was easy, or cheap.

## Notes:

- 1 Paper prepared for a panel discussion on "Economic Values of Wildlife" at the 1987 Meeting of the Northwest Section of The Wildlife Society, Juneau, Alaska, March 30-April 2, 1987.
- 2 Loomis, J. B., G. Peterson, and C. Swanson. 1987. The conceptual foundation for valuing wildlife and fishery resources. Paper presented at the annual meeting of N. W. Section of The Wildlife Society, Juneau, AK, March 30-April 2, 1987.
- 3 Evison, B. 1987. N. P. S. memorandum to Alaska Region Superintendents: "Action Item, Create usable resource inventories for each park." March 11, 1987.

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## Reviews

**El Niño in the Galápagos Islands: The 1982-1983 Event,** edited by Gary Robinson and Eugenia M. del Pino. Published by the Charles Darwin Foundation for the Galápagos Islands, Quito, Ecuador, 1985. xxvi + 534pp. (Available, while supply lasts, for US\$12.00 plus postage, from Fundación Charles Darwin, Casilla 3891, Quito, Ecuador.) Reviewed by Lloyd L. Loope.

This book documents the extreme climatic and biological events that took place in the Galápagos Islands between October 1982 and August 1983. "El Niño" is a naturally recurring phenomenon (at 3-15 year intervals) in that part of the Pacific that involves failure of SE trade winds, warmer ocean temperatures, less upwelling of nutrient-rich cooler water, heavier than normal precipitation, and stronger than normal waves and tides. Many of us first became aware of the "El Niño" phenomenon through news reports of the 1972 event which triggered a drastic decline in the Peruvian anchovy fishery, and sent poultry prices up in the United States. The 1982-83 event was also the subject of many news reports—involving flooding on the west coast of the United States, unprecedented drought and destructive fires in Australia, and abandonment of Christmas Island by its huge seabird colonies. During January-March 1983, the period of El Niño's climax in the Galápagos, Hawaii had an unprecedented drought, which thoroughly dried moss-covered logs in Hawaii's rainforests.

The consensus of the book's authors is that the 1982-83 event was the most extreme such event in a 100-year period. In a 12-month period of 1982-83, the Darwin Station on Santa Cruz Island, which normally receives less than 10 inches of annual rainfall, received 130 inches of