

FISH AND WILDLIFE VALUES: NEW CLOUT FOR A CONSERVATION ETHIC

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ABSTRACT.

A three part strategy is proposed as a way to put fish and wildlife into the forefront of resource management. First, define the conservation ethic as being composed of two parts: a commitment to the continued biological existence of all species, and a recognition that above and beyond that commitment, fish and wildlife resources have economic values to society. The commitment to continued biological existence of all species and communities provides a land ethic foundation for responsible resource stewardship. Least cost and economic efficiency, should be used respectively for decisions that implement the biological existence and resource value parts of the conservation ethic. Second, identify the true economic values of fish and wildlife resources and capture as much of them as possible as a revenue benefit for the land manager. Beyond diversity and viable population standards which ensure biological existence and the land ethic, let market forces shape the mix of benefits to be produced. Third, recognize that we are in part a business that provides fish and wildlife recreation goods and services. Market our product champions, build program excellence around them, and employ rigorous, objective-driven planning to actively meet clearly defined goals.

INTRODUCTION

The values of fish and wildlife to the American people are steadily rising. Evidence of this includes Federal and State legislation, such as the Endangered Species Act of 1973, the National Forest Management Act of 1976, the Fish and Wildlife Conservation Act of 1980, and numerous similar State laws, non-game tax check-offs, the fish and wildlife motifs in art, home decoration, and apparel, and access fees for hunting and fishing. It may soon include access fees for non-consumptive recreational uses as well.

Better accounting for these values could propel fish and wildlife into the forefront as primary resources to consider when managing wildlands. We will, however, need an aggressive strategy to make that happen. In this paper we highlight three things we think can help put fish and wildlife in the lead by the 1990's: 1) expanding education about the conservation ethic, 2) identifying and capturing the total values of fish and wildlife, and 3) marketing and objective-driven planning for fish and wildlife.

THE CONSERVATION ETHIC AND FISH AND WILDLIFE VALUES

Society is increasingly committed to a conservation ethic that encompasses two parts: a land ethic, and a resource sustained yield ethic. This commitment has grown steadily since the late 1800's. Aldo Leopold (1966) stressed the land ethic part as the explicit recognition that man is the steward as well as member of a land community of inter-dependent parts. Gifford Pinchot, among others, emphasized the resource-sustained yield part as the greatest good for the greatest number over the long run. Conservation is the combination of a land ethic and sustained yield resource production. It clearly aims for a state of harmony between people and the land community.

In recent years society has codified the conservation ethic in a set of legal mandates and operating constraints with respect to our relationships with lands, plants, and animals; the National Environmental Policy Act of 1969, and the Endangered Species Act of 1973 are perhaps the best examples. Existing laws and regulations may, or may not, be sufficient to ensure that plant and animal species and communities have a "right to continued existence, and, at least in spots, their continued existence in a natural state" (Leopold 1966). But they certainly get us closer than we were in the 1960's. One thing is clear. Just as we must continually instill, reinforce, and interpret our moral ethics and constitutional rights and obligations to each generation, so also must we treat our conservation ethic.

Conservation is a concept whose meaning is shaded by personal biases; it means something different to nearly everyone. There are, however, recognizable limits to its meanings. Few view it as unbridled exploitation, and few view it as laissez-faire preservation. But society is still fine-tuning the area between these extremes that represents wise use, sustained yield, full diversity, and future options. It is a large and dynamic arena. Were it not so, we would long ago have solved problems such as how much old growth forest we need for viable wildlife populations and ecosystem diversity. But today, we have a new window on the conservation concept.

We are at a point where fish and wildlife values can help us better define the conservation ethic. The remainder of the paper presents a "strawman" on which to focus discussion on how to ensure that resource management decisions account for the true values of fish and wildlife. Better accounting for these values is needed so that we may continue the conservation experiment. Failure to do so will likely result in increased polarization of policies toward the exploitation and preservation extremes.

There are two broad categories of values for fish and wildlife: biological existence values and economic resource values. Biological existence values derive from religious and ethical roots. Ehrenfeld (1976) suggested that biological existence values derive from the "Noah Principle", named after the first person to show a commitment to care for every living thing. Allen (1974) invoked, "strong theoretical grounds for believing that most of the species on this planet are here for a better reason than that they are poor galactic map-readers". And, of course, Leopold's (1966) "right to continued existence" is a belief, not a hard scientific fact.

Reid (1983) argued persuasively that we must implement the conservation ethic through the rational application of economics. We wholeheartedly agree with Reid's point, but believe it is inappropriate that dollar values alone justify the continued existence of our fellow occupants of this biosphere. America's legislative commitment to a conservation ethic implies that society has given all species a right to continued existence. As we develop lands and waters to provide needed resources, our stewardship obligation means we will preserve their right to continued biological existence. The crucial issue is not how much full diversity is worth; rather, how to maintain a high probability of continued biological existence at the lowest costs in foregone opportunities for other uses of lands and waters.

Because dollars are not an appropriate measure for biological existence values, the proper economic analysis framework for them is least cost, or cost effectiveness, rather than benefit/cost, or economic efficiency. The analytical task is twofold: 1) to identify the minimal conditions that will have a high likelihood of ensuring full diversity and continued biological existence for all species, and 2) to find the least cost alternatives that will provide those conditions.

The minimal conditions for continued biological existence are, quite properly, constraints on our options. They translate the land ethic part of conservation into standards for diversity and viability of plant and animal species and communities. Hence, these standards, when successfully used in land management, provide a land ethic foundation upon which society can proceed to develop resources and allocate their uses according to rational economic principles. For example, if the minimum standards constrain only 10% of the management options at least cost, then the remaining 90% of options should be shaped entirely by the relative economic values of the different resources that can be provided. That brings us to the issue of economic resource values (as opposed to the aforementioned biological existence values) of fish and wildlife.

Beyond the biological diversity foundation, fish and wildlife economic resource values have several components: 1) the economic value of pursuit for ownership (consumptive recreation), 2) the economic value of pursuit for observation (non-consumptive recreation), and 3) the economic value of knowing the resources exist. The economic value of knowing that the resources exist, can be used in the future, or passed on to future generations for their use is considered by economists to be existence, option, and bequest values respectively. Economic existence values differ from biological existence values. The economic existence value reflects the satisfaction derived by individuals from knowing that a species lives and thrives.

We can, and do, assign dollars to economic resource values. And, it is entirely appropriate to apply those dollar values to decisions regarding the relative emphasis of resources to be produced. The commitment to diversity and viable populations secures the land ethic part of the conservation ethic. Economic resource values, and issues like who pays and who gains, and returns to the investor or land owner, should shape the wise use and sustained yield parts. One key to the success of putting fish and wildlife in better balance with other resources is to emphasize their economic resource values.

USING THE ECONOMIC VALUES OF FISH AND WILDLIFE RESOURCES

The empirical knowledge of fish and wildlife economic resource values is growing rapidly. Early works on hunting and fishing (consumptive recreation) values are now augmented by studies on non-consumptive use values. Studies such as Kellert and Westervelt (1982) and Lyons (1982) clearly showed changing attitudes and increasing values for non-consumptive recreation and existence, option, and bequest knowledge. Halls (1975) and Teer et al. (1983) among others, showed that users will pay for consumptive recreation uses of fish and wildlife, and that those additional expenditures can be sufficient to shift management in favor of fish and wildlife. Thomas (in press) showed that a minimal access fee for hunting big game on western national forests could easily generate more revenues to federal, state, county, and local forest coffers than currently result from livestock grazing or other special uses. Bob Turner (pers. comm.) suggests that user fees for nonconsumptive uses would help steer decisions in their favor.

Let's look at just one local example of the "power" of using economic resource values. The Dye Creek Ranch in northern California, is a 50,000 acre cattle ranch in the western Sierra Nevada foothills. Since 1973 it has averaged \$30,000 net return annually from its hunting and fishing recreation program. That is clear profit of \$0.60 per acre per year. Although this may not be a large return on equity or investment, it is not a loss. Many ranch owners continually face losses on straight livestock operations. Users will pay for fish and wildlife recreation, and those revenues can be a powerful force in favoring habitat and population management goals. We suggest fish and wildlife managers capitalize on those facts.

We have two tasks here: 1) to properly identify the total economic values of fish and wildlife resources (over and above the biological existence value), and 2) to capture those economic values in a way that influences resource decisions. The total economic value of fish and wildlife resources is the sum of expenditures for use plus the willingness to pay beyond expenditures, plus the existence, option, and bequest values. Values like the latter four are called consumer surplus by economists, and are the appropriate values to use in

economic efficiency analyses. They account for value to individuals and society that is not reflected in actual fees and expenses, and they reflect the net economic contribution to society by these resources. Theoretically, if willingness to pay was determined in a free competitive market, consumer surplus would be zero. In a similar vein, if only expenditures (e.g., travel, food, and equipment costs) are used to measure total value of fish and wildlife uses the true economic value is not being identified (Loomis et al. in press). Expenditures represent financial efficiency, which assesses local community impacts. Consumer surplus represents economic efficiency, which assesses the net contribution to the nation as a whole.

The fact that fish and wildlife economic resource values exist and can be identified is necessary, but not sufficient to influence resource decisions. The values must be captured by the land owner or manager. This is occurring increasingly through access fees and leases on private lands and waters. It lags on most public lands. Individuals readily accept that they must pay for the right to turn a tree or forage into their private property, or pay for the recreational use of a campsite, boat launch, or other special feature. Studies show people will also pay land managers to produce game, fish, and non-game recreational opportunities, but to date we are not capturing that willingness in a way that is meaningful to budget planners. Everett (1979) hit the key point right on the head: it is very difficult to persuade those controlling the purse strings that the theoretical economic value of fish and wildlife is equal to, let alone exceeds, the net monetary returns for timber, forage, or minerals.

We can use all the correct methodologies to identify the true economic values of fish and wildlife, but those values will still be perceived as "soft", and subject to arbitrary modification if they appear to outweigh actual monetary returns. The bottom line, therefore, is that both private and public land managers must reap the benefits of fish and wildlife resource production before fish and wildlife goals (beyond diversity and viable populations) can effectively compete with goals for resources that return revenues. The time for fish and wildlife user fees has come.

MARKETING AND OBJECTIVE-DRIVEN PLANNING

The final point, and certainly a key to putting fish and wildlife in the forefront by the 1990's, is the need for better use of business management principles. Just having a conservation ethic will no more ensure its effective implementation than the constitution alone safeguards our basic rights. The conservation ethic alone is not enough to reverse the reactionary and often negative approach of fish and wildlife managers. We must aggressively market our philosophies and products, and use a rational, objective-driven planning process.

In the recent best seller "In Search of Excellence" Peters and Waterman (1982) described the key role of "product champions" in the success of top corporations. Examples are 3M's "Scotch Tape", Johnson and Johnson's "Band-aids", and MacDonald's "Big Mac". These companies produce other goods and services, but their image of excellence and quality centers on the champion. Biologists in different parts of the country have great product champions: peregrine falcons, salmon, elk, turkeys, pileated woodpeckers, wild trout, pronghorn, black bass, bighorn sheep, bald eagles, grizzly bears, and on and on. Whether we call them species of special interest, game, featured species, emphasis species, or management indicator species is not important. What is important is that they are the focus of our efforts to maintain the rich diversity of roughly 700 vertebrate species per state, and to produce high levels of some of them for recreational uses. Biologists must aggressively use product champions to put fish and wildlife into the lead. We need to employ a full set of product champions (e.g., management indicator species) to identify objectives that will maintain full diversity and show others how we believe lands and uses should be shaped.

Peters and Waterman (1982) also stressed the importance of a bias for action in business success. It is now well accepted that even our basic diversity obligations cannot be met with laissez-faire preservation (Frankel 1983). Too much land is being altered for too many reasons. To fulfill our conservation ethic for both biological existence of all

species and sustained yield based on economic resource values, we must actively plan and manage lands and people to meet specific objectives. To simply react is too loose; Sweeney (in press) presents an excellent example of how to actively plan for wildlife diversity and production on forested lands.

To summarize, fish and wildlife values give us new clout for our conservation ethic. To make them work we must continually educate society on the meaning and importance of conservation, capture and account for the total and full range of values of fish and wildlife, and market our product champions so they can become among the primary objectives that drive resource management decisions. Are you willing to accept the consequences of not charting this course?

LITERATURE CITED

- Allen, R. 1974. Does diversity grow cabbages? *New Scientist* 63: 528-529.
- Ehrenfeld, D. W. 1976. The conservation of non-resources. *Amer. Scientist* 64: 648-656.
- Everett, R. D. 1979. The monetary value of the recreational benefits of wildlife. *J. Envir. Manage.* 8: 203-213.
- Frankel, O.H. 1983. The place of management in conservation. In C. M. Schonewald-Cox, S. M. Chambers, B. MacBryde, and L. Thomas (eds.). *Genetics and conservation*. The Benjamin/Cummings Publ. Co., Inc. Menlo Park, CA.
- Halls, L. K. 1975. Economic feasibility of including game habitats in timber management systems. *Trans. N. Amer. Wildl. Conf.* 40: 169-175.
- Kellert, S. R. and M. O. Westervelt. 1982. Historical trends in American animal use and preception. *Trans. N. Amer. Wildl. and Natur. Resour. Conf.* 47: 649-664.
- Leopold, A. 1966. *A Sand County almanac*. Oxford Univ. Press.
- Loomis, J. B., G. Peterson, and C. Sorg. in press. A field guide to wildlife economic analyses. *Trans. N. Amer. Wildl. and Natur. Resour. Conf.* 49.
- Lyons, J. R. 1982. Nonconsumptive wildlife-associated recreation in the U. S.: identifying the other constituency. *Trans. N. Amer. Wildl. and Natur. Resour. Conf.* 47: 677-685.
- Peters, T. J. and R. H. Waterman Jr. 1982. *In search of excellence: lessons from America's best run companies*. Harper and Row, Inc.
- Reid, R. G. 1983. At issue: what's happening to the conservation ethic? *Amer. For.* 89(11): 10.
- Sweeney, J. in press. Estimating wildlife production with habitat models. *Cal-Neva Wildl. Trans.*
- Teer, J. G., G. V. Burger, and C. Y. Deknatel. 1983. Commercial hunting in the United States. *Trans. N. Amer. Wildl. and Natur. Resour. Conf.* 48: 445-456.
- Thomas, J. W. in press. Fee hunting on the public lands? -- an appraisal. *Trans. N. Amer. Wildl. and Natur. Resour. Conf.* 49.