Testimony of Susan Hanna
Professor of Marine Economics
Coastal Oregon Marine Experiment Station
Oregon Sea Grant
Oregon State University

to the
U.S. Commission on Ocean Policy
Science and Policy Interface in Fisheries Management Panel

Economic Investments to Improve Fisheries Management

Seattle, Washington
June 14, 2002

Admiral Watkins and members of the Commission, thank you for the opportunity to speak to you today about fishery management, in particular about areas in which economic investments will improve the interface of science and policy in fishery management.

I have been both an observer and participant in fishery management at the regional and national levels as a member of the Scientific and Statistical Committee of the Pacific Fishery Management Council, the National Marine Fisheries Service's Marine Fisheries Advisory Committee, and NOAAs Science Advisory Board, and as a researcher supported by Oregon Sea Grant. My perspective on fishery management is shaped by the framework of economic theory and by practical experience in fishery management implementation.

ECONOMIC ISSUES

I will begin with the assertion that in the 25 years since the Fishery Conservation and Management Act was first implemented, we have paid little systematic attention to economics in fishery management. The science and policy interface is not well informed by the science of economics. We invest increasing amounts of money in improving the biological data for stock assessments because we are trying to achieve levels of certainty that would allow more intensive use, while we pay scant attention to the economic conditions that are driving the demand for more intensive use or to the tools that would help reduce the demand for intensive use.

The idea that we pay little attention to economics may be counterintuitive, since economics is often highlighted as the reason we pay too little attention to conservation. Economic pressures are blamed for management's failure to be appropriately cautionary or as the reason overfishing occurs. To a very limited extent this blame is

appropriately placed. Economic pressures facing the fishing industry – both commercial and recreational sectors – do place fishery managers in a position to attend to immediate needs of fishery constituents at the expense of long-term planning. But these short-term economic pressures are only symptoms of the underlying economic problem that we largely ignore.

The underlying economic problem is our failure to manage for long-term economic productivity of fisheries. We have not fully appreciated the wealth-producing potential of fisheries as public assets. We have not understood the important connection between profitability and stewardship; that incentives to conserve and to participate effectively in management depend on economic well-being.

Lacking this understanding, we have continued to manage fisheries under inappropriate incentives, we have under-funded social science data and research, and we have allowed management to develop along complicated and costly paths.

The History

It is helpful to look back at the path to this economic condition. In the late 1960s, the problem facing U.S. fisheries was how to rehabilitate the domestic fishing industry and promote fishery expansion. The U.S. fishing fleet was in disrepair and could not compete successfully world seafood markets. Seafood imports were rising, and high levels of foreign fishing off our east and west coasts created public concern. There was a national consensus on the urgent need to renovate and expand American fisheries. The 1969 Stratton Commission reinforced this view.

Passage of the 1976 Fishery Conservation and Management Act (FCMA) reflected public support for foreign exclusion and domestic expansion. The FCMA eliminated the problem of foreign fleets but did little to resolve the problem of open access fishing by domestic fleets. In the 25 years since FCMA implementation, American fishery management has been characterized by a race for fish, an over-investment in fishing capital and shortened time horizons.

The race for fish has rational origins but irrational results. When access to fisheries is open, ownership of fish is possible only at capture. Fishermen compete by investing in bigger and better fishing vessels. Seafood processors expand their plants to accommodate the increased volumes of fish being landed. The result is over-investment in fishing and processing capacity. Capacity built up during the expansionary race for fish cannot be sustained over the long term.

Once a fishery has more capacity that then resource can support at profitable levels, economic productivity is lost. Overcapacity forces managers to focus on short-term allocation problems at the expense of long-term strategies for sustainability. Assurance about the future declines, and conflict among competing interests increases. Management costs rise. Many U.S. fisheries reached this condition by the early 1980s.

By the 1990s pressures for change were increasing. The 1996 Sustainable Fisheries Act (SFA) sent a powerful signal of the public's desire for sustainable fisheries. It added several important strictures to federal fishery management: eliminate overfishing; rebuild overfished stocks; minimize bycatch, document and protect essential fish habitat; and account for the effects of fishery regulations on fishing communities.

But the SFA did little to address the fundamental economic problems that continue to plague fisheries. Many fisheries are managed under regulations that still promote a race for fish. Our fisheries are almost universally overcapitalized. Incentives are out of line with long-term sustainability. Economic data and analysis are inadequate. Management costs are high.

We have continued to manage as if we can avoid the fundamental economics problems by continuing to increase investments in improving the biological basis of management. But if we want to achieve sustainability in fisheries, whether we define that as ecological or economic sustainability, we must make investments in fixing the fundamental economic problems.

RECOMMENDATIONS

We must build long-term economic productivity of fisheries by introducing property rights, appropriately fund economics data and analysis, and improve the cost-effectiveness of management.

1. Introduce Property Rights

People are, for the most part, rational in what they do. They respond to the incentives that face them, often rationally as individuals, but with irrational collective results. Many of the incentives embedded in fishery management send economic signals that are out of line with long-term sustainability.

Lacking property rights in most fisheries, people are faced with uncertainty about their tenure in the fishery. This uncertainty provides an incentive to emphasize short-term gains to the detriment of long-term planning. Without the assurance that property rights provide, people compete through the race for fish. The rational individual response is to invest in capacity that provides a competitive position in the race for fish. The problem is that these individual rational investment decisions sum to a capacity outcome that cannot be sustained.

Lacking property rights in fisheries, a lot of management time is devoted to designing regulations that are fair to diverse groups and that sanction those who fail to comply. The difficulty of influencing human behavior through the use of targeted incentives is a continuing problem in fishery management. A different approach would be to encourage the development of property rights and responsibilities that promote long-term perspectives, define responsibilities associated with rights, and reward desired behavior.

The existence of property rights would allow the focus to shift toward performance-based regulation, where the right to fish depends on certification of meeting specified conditions.

2. Fund Economics Data and Research

A truism of fishery management is that we are managing people, not fish. Indeed, a look at the meeting agenda of any regional fishery management council will confirm that a large proportion of council meeting time is devoted to human issues – to allocating allowable catches among competing interests.

The idea behind the council system is to that people with working knowledge of regional fisheries can make the most informed decisions about those fisheries. The effectiveness of the council decision-making rests in large part on the quality of the information describing and predicting the people they manage. But our investment in data and research to understand the human components of fisheries is not at a level that would help a council be as effective as possible. It does not provide in-depth description and prediction on an ongoing basis.

The National Marine Fisheries Service (NMFS), the principal fisheries research agency, is an agency strongly dominated by biologists. For every one economist or social scientist in the agency, there are 26 biologists or ecologists. NMFS has long recognized the deficiency in its economics staffing and has developed an ambitious plan to increase the number of economists and social scientists and to enhance economics and social science data, but this effort is progressing slowly. Systematic inadequacies in economic data collection, many of which are the result of legal prohibition as well as low levels of funding, hinder analysts. The scientific validity of analysis suffers, and councils are often in a position of learning about the human end of fisheries through anecdotes or public testimony.

I am currently chairing a review panel charged with examining the types and level of social science research funded by NOAA, and making recommendations about the social science research and education needed to help NOAA achieve its mission. One of the panel's preliminary findings is that overall, NOAAs investment in social science is inadequate, and this inadequacy hinders NOAA line offices in meeting their missions. Our finding of inadequate levels of social science data and research applies even to the National Marine Fisheries Service, the NOAA line office with the largest social science effort because of its responsibility under various statutes to assess the impact of regulations on people.

There is a need to increase the amount of all kinds of basic science in fisheries. It won't be enough to invest only in improving the quality of biological data. Consider Pacific groundfish as an example: the groundfish management plan includes 82 species. The question is where fishery management will get the greatest return on investment: in expanding our understanding of each of these species or in developing tools to reduce

exploitation pressure on them? Investments in economics data and research that lead to lower levels of demand for harvest will reduce the fineness of resolution we require of biological assessments.

3. Improve Management Cost-Effectiveness

Ideally, fishery management should generate more benefits than costs. But in failing to address the race for fish and the problem of overcapacity, management has become increasingly complicated and rigid. Productivity losses have required more complicated regulations, expanded requirements for information, and created more conflicts among user groups. In turn, these factors have increased management costs while undermining its legitimacy and decreasing its effectiveness.

The increasing intensity of fishery use creates a large regulatory burden that strains the personnel resources of management and requires management to focus on short-term regulatory needs. The short-term focus prevents the development of experiments that would increase management's adaptability. New regulatory requirements such as those added by the SFA are increasingly proscriptive and limit the flexibility with which management can meet its objectives.

Fishery managers spend a lot of time trying to figure out how a regulation will affect different sectors in the fishery and whether it will be effective in achieving the desired results. This process often looks very much like the old Soviet-style central planning, with much the same effect. Deciding how to get the desired result takes more and more time as managers struggle to allocate scarce resources among increasingly desperate interests.

Despite the amount of time spent developing regulations, very little time is spent assessing the performance of regulations once implemented. The objectives of fishery management plans are usually vague and immeasurable. As a result, broad-scale monitoring and evaluation of progress toward those objectives is absent.

The absence of property rights and the moratorium on market-based regulatory instruments like individual tradable quotas (ITQs) have kept managers engaged in expensive allocation processes. Managers have little time to experiment with new technologies that have the potential to enhance ecosystem monitoring, data entry and ecosystem-based management. By spending more and more time on allocation, we are increasing the cost of management and decreasing its effectiveness.

Actions in five important areas would make management more cost-effective:

- Decrease fishing pressure: invest to reduce capacity to a level that is profitable at much lower yields.
- Specify property rights: provide consistent expectations about rights and responsibilities of fishery participants.

- Reduce time spent in allocation: allow market-based tools like individual tradable quotas
- Specify measurable objectives: provide long-term performance targets
- Monitor and evaluate management performance: develop measurable economic and biological performance indicators

CONCLUSION

I return to the need to promote long-term economic productivity to achieve sustainable fisheries. Through oversight and neglect, we have diminished our valuable public fishery assets. We are guilty of treating the economic components of fisheries as things that take care of themselves. We are even guilty, sometimes, of representing the poverty of many commercial fisheries as romantic, using imagery of rugged individualists pitting themselves against the elements to subsist.

Commercial fishermen do pit themselves against the elements. It is still the most dangerous profession in the world. But poverty in fisheries is not romantic. Fisheries that are not economically profitable are fisheries in which people cannot afford to maintain equipment in safe condition, cannot afford to tie up in bad weather, and cannot afford to invest in long-term sustainability.

This is not the way to generate value from our public fishery assets. We need to have profitable fisheries to have sustainable fisheries. We need public support and investment to achieve that goal.

Twenty-nine years ago, facing different but equally serious challenges in American fisheries, the Congress unanimously resolved to afford the fishing industry all support necessary to strengthen it. The 1973 Eastland Resolution and its subsequent actions represented a strong public investment in fisheries.

It is time for a similar pubic investment in fisheries to achieve long-term economic profitability. We need property rights that will provide the assurance of tenure in the fishery and offer incentives for sustainable use. We need to invest in the collection and analysis of economic data so that we understand the people we are regulating and the economics of their industries. We need to allow the use of market-based instruments to reduce capacity and reduce the time managers spend on allocation issues.

Investment in property rights will provide economic security and predictability to fishery participants. Investment in economic data and analysis will improve the scientific rigor of management decisions. Investment in management changes that reduce costs will enhance the efficiency of management. Investment in these three categories will substantially improve the effectiveness of the interface between science and policy. These investments will pay off handsomely in the form of stabilized fisheries that generate wealth to their public owners in the present and for the indefinite future.