

Testimony

By

Andrew A. Rosenberg, Ph.D.
Member, U.S. Commission on Ocean Policy
Professor, University of New Hampshire

before the

United States House of Representatives
Natural Resources Committee
Subcommittee Fisheries, Wildlife and Oceans

December 5th, 2007

Madam Chair and members of the Committee: Thank you for the opportunity to testify before you today concerning rebuilding U.S. fisheries. I am Andrew Rosenberg, Professor of Natural Resources in the Institute for the Study of Earth, Oceans and Space at the University of New Hampshire.

Ending overfishing and rebuilding depleted resources is an important environmental issue around the globe. While management programs in many countries, including the United States, have made substantial progress toward sustaining marine fisheries in recent years, many resources are still overexploited and depleted. The consequences of resource depletion are clearly the loss of food, recreation, economic opportunity and ecosystem degradation with long-term losses for society. These are not theoretical or projected problems but real, observed effects of overexploitation of marine resources.

In recognition of these facts, Congress enacted the rebuilding requirements of the Magnuson-Stevens Fishery Conservation and Management Act in 1996. The law sets out specific timelines for action to rebuild depleted fisheries, requirements for the rebuilding management plans and establishes accountability for implementing plans in a timely manner.

In my opinion, U.S. policy requiring rebuilding of overexploited stocks is among the strongest and most comprehensive in the world. However, there clearly are some problems with implementation of that policy. Last year, I co-authored a review of rebuilding programs for U.S. fisheries, which was subsequently published in a peer-reviewed scientific journal (Rosenberg et al. 2006. *Frontiers and Ecology and the Environment* 4(6): 303-308.). A summary of that report is attached to this testimony for your information.

Here, based on that review and my own experience, I will try to specifically address the questions posed by the Committee:

“Have rebuilding plans been established for fisheries identified as overfished and has overfishing ended in these fisheries?”

Rebuilding plans have been implemented for 67 of the 74 fish stocks around the country that were identified by NOAA as in need of rebuilding as of last year. For only about half (52%) of these 67 stocks has overfishing ended. Eighty two percent of the stocks under rebuilding plan are still in need of recovery, that is below one half of the biomass level needed to produce maximum sustainable yield (MSY) or where overfishing is still occurring. Only three stocks have recovered, but nine more are recovering and are above the threshold level of one half of the biomass needed to produce MSY. This threshold is the initial rebuilding point in the current NOAA Fisheries guidelines. The statute, of course, requires rebuilding to the biomass level capable of producing MSY. In general, the biomass level capable of producing MSY is estimated to be around half of the unfished level of biomass. While fisheries that have been overfished for a long time may be well below the MSY level, it is certainly attainable for these stocks.

“What is the likelihood that these plans will achieve their rebuilding goals within the required time frames?”

In my view, many plans will not meet rebuilding within required timeframes simply because overfishing is still occurring. It is clear to me that if a rebuilding plan allows continued overfishing, it will not meet the required timeframe in most, if not all, cases. Prof. Marc Mangel, from the University of California at Santa Cruz, showed in modeling studies that continuing to overfish during the beginning of a rebuilding program dramatically reduces the chance of successful rebuilding and requires even greater cuts than would be necessary if overfishing is ended immediately. A summary of his study is attached to this testimony for your information.

Even though the rebuilding timeframe for depleted stocks is supposed to be set at 10 years or less unless there are specific biological or environmental reasons making this infeasible, or an international agreement calls for a longer time frame, this requirement has not been well implemented. Only a third of overfished stocks have rebuilding timeframes less than or equal to 10 years, even though most could rebuild more quickly under an effective rebuilding plan. An analysis of a wide range of fish stocks published in 2005 by Safina and others (including me) in the peer-reviewed journal *Science*, showed that most stocks can rebuild well within 10 years if fishing mortality rates are reduced such that overfishing is not occurring. By pushing rebuilding plan timelines out as far as possible, which seems to be current practice, the Nation is foregoing very substantial benefits of healthier fisheries.

“How are the rebuilding targets for overfished stocks established?”

Rebuilding targets are based on best available scientific information but are set by the Councils, and therefore are ultimately based on other considerations beside the scientific information. In general, the scientific analysis is based on the best estimate of the biomass and fishing mortality rates that would produce maximum sustainable yield. There are several technical issues with these analyses including the time period for which data are available, the type and quality of the data and understanding of environmental effects on productivity. In general, it is my opinion based on experience, that rebuilding targets are almost always set at levels less than they should be in order to truly maximize yield and benefits from the resource. It is not uncommon that proposed rebuilding targets are considered by user groups to be wildly unrealistic, only to be shown when rebuilding begins to be rather low and conservative. Atlantic sea scallops is an excellent example of this. When NOAA suggested rebuilding targets for scallops in the late 1990's many in the industry complained vociferously that they were unrealistically high. It should be noted that those rebuilding targets were exceeded several years ago and the stock continued to increase to much higher levels.

“What type and quality of information and data is factored into those targets?”

Rebuilding targets are based on analysis of the life history data on particular species, the history of catches and productivity of the stock or similar stocks. The actual data used will vary from stock to stock. The analysis is an effort to find pattern and consistency in the data to understand the potential productivity of the stock. Of course there is uncertainty in the data as there is in environmental factors and the ability of the management plan to accurately control fishing mortality rates. This should be factored into the targets by accounting for the uncertainty and setting annual management measures such that there is a high probability of achieving the needed rebuilding. Because rebuilding will result in much greater benefits to the Nation, as recognized in the statute, lack of rebuilding is inherently foregoing those benefits. In other words, every year the stock is not rebuilt is costly to the Nation. Therefore, the probability of ending overfishing and rebuilding should be high even with inherent uncertainty.

In cases where the data are considered to be poor this principle still applies and even greater caution is needed. It must be remembered that most of the data, and the most uncertain portion in general, comes from the industry, both recreational and commercial. It is in the hands of fishermen to report accurately and in a timely manner. For many fisheries, there are specific requirements to submit logbooks reporting most of the catch as this requirement covers both commercial and the charter and party boat fishing and that is by far the majority of the recreational sector in many cases. Increased caution when the data is poorer should be an incentive to fishermen to improve their reporting practices to improve the data.

“How are non-fishing impacts—such as habitat loss, pollution and predator-prey relationships—factored into those targets?”

In general, non-fishing impacts are factored in through analyzing the history of stock productivity through time. Note that not all impacts are strictly unrelated to fishing (e.g. habitat loss and predator-prey relationships can be affected by fishing among other things). In some cases, particular impacts might be projected but this is the exception rather than the rule. For example, it might be possible to project, or at least hypothesize climate change impacts on certain fisheries.

In considering non-fishing impacts it is important to remember that there are two key quantities for the rebuilding plans. Clearly the biomass targets are important, that is, the biomass that is expected to produce the maximum sustainable yield. If the productivity of the environment is reduced through, for example, habitat loss, it may be that the biomass required to produce MSY will be lower. The fishing mortality rate, or exploitation rate (i.e. proportion of the stock removed each year by the fishery), that will produce MSY is equally important in the rebuilding. If there are non-fishing impacts that reduce productivity then the fishing mortality rate that will allow rebuilding to MSY will necessarily be reduced. This means in effect that factoring in habitat and other impacts implies reduced exploitation rates and lower catches to enable rebuilding of the stock.

“What factors are hindering the ability to meet rebuilding plan goals?”

The principle factor hindering the ability to meet plan goals is not reducing the exploitation rate quickly enough or far enough to begin rebuilding. The worst case of this is allowing continued overfishing in the early stages of the rebuilding plan and hoping to “catch up” to the rebuilding timeline in the later years of the plan. This is a strategy for failure. It is usually done to allow for adjustment time by users, but in my opinion, almost always results in greater restrictions and more economic and social dislocation than if exploitation is reduced quickly giving the stock a chance to rebuild as quickly as possible. The rationale for a slow reduction in exploitation rate is really just to preserve short term gains at the expense of long term benefits. For an individual business this may seem a reasonable strategy. But it is not reasonable to maintain some very short term benefits for some from a public resource, when the loss of long term benefits affects all.

In summary, the U.S. fishery rebuilding provisions are critically important for resource management. The requirements are appropriate, and the implementation should be strengthened. Recent changes to the law should strengthen the requirement to end overfishing immediately and improve accountability for successful rebuilding plans.

Madame Chair and members of the Subcommittee, thank you for the opportunity to testify today. I would be pleased to respond to questions.