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Testimony on

IMPROVING THE MAGNUSON STEVENS ACT

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INTRODUCTION

My name is Brian Rothschild. I am the President of the Center for Sustainable Fisheries (“CSF”). CSF is a science based organization representing individuals and groups, including fisherman and processors from Maine to North Carolina, who are devoted to fishery resource sustainability and fishing community economic development (see Supporting Document One [CSF Mission Statement]).

Reauthorizing the Magnuson Stevens Act (“MSA”) is critical to sustaining our Nation’s fisheries resources. Reauthorization needs to focus on two main principles. First, MSA implementation must be based on a balance among all ten National Standards(of MSA) rather than a preoccupation with overfishing. And second, the language of the reauthorized MSA must be based on scientific principles.

In our testimony today we want to suggest a national reauthorization discussion based on these principles. It is our feeling that such a discussion is consistent with the intent of the MSA and its predecessor

legislation, and has the potential to bring a greater potential balance and scientific justification to fisheries management.

Obviously, our goal is to improve fisheries management performance. But improved performance and accountability for performance needs to result from redefined performance standards.

SOME PERFORMANCE STATISTICS

At the present time, fisheries management performance in New England seems to focus on the narrow issue of whether or not stocks are overfished and outdated economic statistics.

Our scallop industry (the number one fishery in the country economically) is deeply troubled. Performance statistics for the groundfish fishery are not encouraging. (See Supporting Document Two [Trends in New England's Groundfish Fishery]).

Groundfish fishery statistics reflect, that despite intensive management and reductions in fishing effort, out of 20 stocks the number of stocks overfished is 13 and the number of stocks subject to overfishing is 8 (the number of overfished and stocks subject to overfishing has not changed since 2007); groundfish trips have decline about 30% (2007–2011); days absent have declined about 25% (2007–2011); crew positions have declined from 1700 to 1200 or 30% (2007–2010); vessels have declined about 30% (2007–2011); Total Allowable Catches (“TACs”) and or Annual Catch Limits (“ACLs”) have declined about 50% (2007–2012); landings/ catch has declined 30% (2007–2012); underfishing has decreased from 100k mt to about 50k mt; price per pound has increased about 50%; and gross revenue has stayed constant.

It appears taking a qualitative point of view from these very crude and somewhat out of date statistics that the overfished/overfishing condition of the stocks remains high even though fishing intensity has declined to a considerable degree. There is material job loss in the producing sector. The job loss contributes to unaccounted for welfare costs in coastal communities. This job loss in the producing sector has to generate job loss in the processing sector. Shore-side losses in fuel and repair must be correlated with the reduction of trips and vessel loss. Consumers suffer from a reduced supply of domestic fish and increased prices.

These statistics give only a partial picture of the negative perception of fisheries management. The management system generates considerable

waste. The waste includes: 1) substantial underfishing, signaled by not attaining the OFL; 2) unnecessary 25% buffers that constrain catch; 3) continuing discarding; and 4) losses in yield incurred by attempting to rebuild stocks that have zero potential to be rebuilt.

On top of this uncertainty and delays in the regulatory process are a material cost to efficient production of seafood.

A NEED TO SEPARATE MSA FROM ITS IMPLEMENTATION

We begin our analysis by pointing out that it is difficult to constructively criticize the MSA in a vacuum because the MSA as implemented by the National Oceanic and Atmospheric Administration (“NOAA” or “Agency”) reflects not the MSA by itself but a combination of the MSA and the formal (written documents such as guidelines) and informal actions undertaken by NOAA.

Analysis of this situation ultimately requires dissecting implementation into components that are driven by 1) the plain language of the MSA, 2) the guidelines and formal documentation that attempt to interpret the language of the MSA, and 3) the resulting intertwined combination of the language of the act and the implementation.

EXTENDING THE REMIT OF NS1 AND BEGINNING TO ADOPT THE PRINCIPLE OF BALANCE AMONG THE NATIONAL STANDARDS

The idea of balance among the National Standards (“NS”) can be illustrated by examining the connections among the National Standards. Let us consider an example of the intersections among the plain language of NS1, NS2, and NS8. Basically, NS1 says, “conservation and management measures shall prevent overfishing while achieving on a continuing basis optimum yield from each fishery for the United States fishing industry.” NS2 says that fishery management measures shall be based on the best science available. NS8 says that fishing management measures shall take into account the economic and social fabric of fishing communities.

The complex of NS1, NS2, and NS8 has a simple plain language interpretation that is easily understood. There is no reason as to why the Councils could not implement the complex of these NS in a simple and straightforward way. Approaching the implementation in this way would maximize the flexibility of the fisheries management councils to adapt

and innovate to the situations at hand rather than being bound by an extensive set of formulaic rules that do not necessarily make sense in specific fisheries management settings.

However, NOAA has not chosen to take this flexible approach by giving maximum discretion and flexibility to the fisheries management Councils. Rather NOAA has decided to over-write the MSA and substantially expand its remit through National Standard Guidelines (primarily focusing only on NS1). The extension of NOAA's remit is illustrated by the fact that the the few lines of NS1 in the MSA have been expanded to 35 pages of acronym-dense material in the NS1 Guidelines ("NS1G")!!

It is beyond the scope of this testimony to provide a detailed analysis of NS1G. However, it is worth illustrating a few issues that make the present language of the MSA and particularly the guidelines worthy of reconsideration. We point these out in a technical appendix, below. The technical appendix points out 1) the difficulty in obtaining simultaneously Maximum Sustainable Yield ("MSY") for each stock, 2) the potential for a negligible difference between overfished and underfished, 3) the scientific inadequacy of rebuilding, and 4) the equivocal and metaphorical nature of the overfished and overfishing standards.

ILLUSTRATING THE POTENTIAL FOR DEVELOPING A MORE BALANCED APPROACH AMONG THE NATIONAL STANDARDS

Our discussion up to this point has focused on issues associated with NS1 and NS1G. It is relatively easy to see how National Standard 2 can be blended with NS1 and NS8.

National Standard 2, however presents a different type of problem than NS1. NS2 is very clear and unambiguous: "Fisheries management measures shall be based on the best science available."

In order to put teeth into the best science dictum, several steps need to be taken: 1) Stocks need to be assessed on an annual basis; 2) Councils need to be presented with assessments using different methodologies with a discussion of the pros and cons of each methodology; 3) Assessment should concentrate on the simplest methodologies and provide justification for more complex methodologies, and; 4) Language should be developed to prevent the courts from providing more or less routine deference to the Agency.

Regarding National Standard 8, the consideration or taking into account socioeconomic information is virtually ignored by the Agency. Yet most would say, this National Standard was preeminent in the minds of the original drafters of the Fisheries Conservation Management Act (“FCMA”). Considerations associated with NS8 should place this objective in a central position along with overfishing as a goal of management.

DISCUSSION ISSUES

These discussion issues can form a partial agenda for a national debate on MSA improvement. In viewing MSA modifications that might stem from these discussion issues, the tradeoff between desirability and feasibility is always paramount. The issues of feasibility and desirability often relate to cost and political correctness. It may not be politically correct to consider changing the overfishing definition but without doing this balanced approach to implementing our National Standards and a science based fisheries management is held at stake.

DI1. Performance measures needs to be adopted and delivered in virtual real time. Needed performance statistics include socioeconomic statistics, annual stock assessments, and inclusion of waste indicators such as discards and underfishing? The adoption of real-time performance measures and annual stock assessments are a prerequisite to improving fisheries management performance.

DI2. NS1 needs to be modified in language and practice to take into account optimum yield and to provide, or be based on realistic interpretation of “overfishing.” NS1 should be rewritten to say, “conservation and management measures shall maximize yield (or an economic function of yield) subject to the constraint of keeping fishing mortality at or below a level specified by the Council.”

Economists and optimization experts will recognize this as a well-defined and well-known programming problem. Maximizing an economic function of yield satisfies NS8. Replacing overfishing with keeping fishing mortality below a particular level has the same function as setting F_{msy} except that the council would have more flexibility and discretion in setting the “overfishing” level. The added utility of this approach is that it is easily adaptable to the reality of multiple species fisheries.

DI3. NS2 needs to be amended to have a real force and effect. Good scientific practice requires that the Councils be presented with multiple

analyses and an analysis of the pros and cons of each analysis. The Science and Statistical Committees (“SSCs”) should have increased input on scientific methodologies and particularly data collection taking particular account of cost effectiveness. The role of the SSC needs to be reconsidered so that the SSC can focus more on scientific methodology and less on setting catch limits.

DI4. Scientific leadership in the agency needs to be rewarded for innovation and ensuring that indeed the best science available is used. Deference to the Agency on scientific matters needs to be reduced or eliminated. A national scientific working group needs to be established to hear complaints and appeals. A separate small agency might be considered to provide oversight and checks and balances. An analogy might be the relation between the Federal Aviation Administration (“FAA”) and the National Transportation Safety Board (“NTSB”).

DI5. NS1 science requires a detailed review. Recently, the National Academy of Science’s National Research Council (“NRC”) released a report on fisheries management and stock rebuilding plans. The NRC report focused on only a small part of the issue. Primary concerns relate to determining optimum yield in a transparent and balanced manner taking into account the present methodology for establishing ACLs, particularly proxies used to set reference points and the buffers that are contrived to prevent overfishing.

DI6. NS8 also needs to have greater force and effect. This could be obtained by making the needs of fishing communities a centerpiece of the MSA. This would be consonant with the adoption of new objectives in NS1 as indicated above.

DI7. There is a need for National Institutes. Many of the recommendations for improving MSA are scientific or technical. It seems that because they are technical, they are subject to only brief and inadequate consideration. Brief and inadequate consideration of technical issues will greatly constrain the quality of the reauthorization. The critical issues of fisheries management science need a national focus and national rather than regional programs. In order to motivate such an approach, NOAA might reorganize to form several National Institutes to give adequate attention to developing new and innovative approaches to fisheries management. Potential institutes are: 1) fish management, population dynamics, and stock assessment; 2) ocean climate fish interactions, and; 3) fisheries economics.

DI8. Revision of data collection is also needed. Emphasis needs to be developed on using fishing boats to sample fisheries and oceanographic data. Research vessels might be repurposed to collect data on climate change.

DI9. Accountability for the management process. Mechanisms need to be developed to identify and improve underperforming entities.

Finally, we need to observe again that extensive discussion on these important issues is required. Words like “flexibility” mean different things to different people. If we do not have detailed discussions we arrive at the lowest common denominator.

CSF is standing by to promote a balanced scientific based approach to an important component of our national resources.

TECHNICAL APPENDIX

First, consider the requirement to attain MSY for every stock. Our Northeast fisheries and other fisheries in the United States are multiple species fisheries. In other words they take several or many species simultaneously. So it is impossible to literally adapt to a management regime that requires MSY simultaneously for each species in the fishery. Interestingly, the situation where a fishery is required to take two species simultaneously is not sustainable, but a fishery that takes one stock at its MSY and another stock at $\frac{1}{2}$ MSY is sustainable.

Second, consider the fact that the difference between yield, or fishing mortality, or biomass between an overfished and an underfished stock can be negligible reducing to absurdity the overfishing concept as a practical tool. Let us say that we have two stocks A and B. The B_{msy} of stock A is 100 and the B_{msy} for stock B is 50. Let's say that in scenario 1, stock A biomass is 99 and stock B biomass is 49. Let's say that in scenario 2, stock A biomass is 101 and stock B biomass is 51. Then the fishery under the first scenario is doing well. But under the second scenario both stocks are overfished and would require a ten-year rebuilding program. On top of this, the yield for the underfished stock (scenario 1) is materially no different than the yield for the overfished stock (scenario 2) (recognizing this point is justification for the mixed stock exception).

Third, we have (in the language of the law) the dictum that if stocks are overfished, then they need to be rebuilt in a period not to exceed ten years (the speciousness of this requirement was demonstrated in great detail in a NRC report that we have analyzed (see Supporting Document Three [Evaluating the Effectiveness of Fish Stock Rebuilding Plans in the United States]). The problem with this concept is the ten years are arbitrary and then the cause of the stock depression may have nothing to do with fishing so a cessation of fishing will have economic consequence but probably no effect on the fish stock. Perhaps the most ironic aspect of this is that the recent NRC report displayed the lack of science (contrary to NS2) in a ten year rebuilding schedule, while virtually omitting a discussion of the effects of the ocean environment or the fact that it is not certain whether an overfished stock is in reality overfished.

Fourth, as a capstone to all of this, the terms overfishing and overfished, the centerpiece of the language of the law, is scientifically equivocal. For the term overfishing or overfished to be used as scientific concepts it has

to have a precise meaning similar to the temperature of boiling water being fixed at 100°C. Regarding the basis for overfishing determinations, the theoretical models used to define overfishing, 1) do not correspond with data, 2) a declaration of overfishing requires that the defining models exhibit maxima, however, these maxima do not generally exist, 3) there is no unique definition of overfishing (growth overfishing and stock overfishing), 4) theories follow equilibrium settings but real stock are almost never in equilibrium, and 5) theories of overfishing ignore the ocean environment and species- to- species interactions, both of which are critical sources of variation.