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“A science-based nonprofit organization devoted to the conservation of our fisheries resources and the economic development of our fishing communities.”

Rewriting the Magnuson-Stevens Act

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I. INTRODUCTION

The Magnuson-Stevens Act (“MSA” or “Act”) is up for reauthorization in 2014 and the opportunity to fix what is broken and improve what has not worked well should not be missed. At many governmental hearings and public meetings, it is said that all we need to improve the MSA is “flexibility.” Words like “flexibility” mean different things to different people, and such a cursory debate will not produce a functioning law for the complex issues we face in this early part of the 21st century.

While various interests may recommend different means of improvement, there is widespread agreement that in certain key areas the MSA as interpreted and implemented falls short of our nation’s needs. These include an inability both to develop accurate and timely science regarding fish and people, and to use that science to benefit both when and where it is needed. Major issues are laid out in this paper, which is intended as an introduction to a series examining in more detail suggested modifications to the MSA. Identification of the major issues come from working in the field of fisheries management science and hearing over time the concerns of fishermen, fisheries scientists, community leaders, lawyers and many others.

These major issues can be addressed by focusing on two main principles. First, the MSA’s language must be rewritten to strengthen the scientific basis for all conservation and management measures, including not only the biological or fishery-related sciences, but the much-neglected socio-economic or people-related sciences. Second, all 10 National Standards must be balanced to reflect an appropriate symbiotic focus, rather than one that has narrowed over the years to a preoccupation with only one concern: “overfishing.” Rewriting the National Standards to ensure these goals are consistent with the intent of the MSA and its predecessor legislation has the potential to bring greater balance and scientific justification to fisheries management.

Mere reauthorization without thoughtful changes to achieve these goals will fail to achieve balance in fisheries management, and endanger the sustainment of our nation’s fisheries resources. Thoughtful change requires that the MSA be rewritten.

II. ORIGINAL INTENT OF MSA VERSUS MSA AS IMPLEMENTED TODAY

The MSA was originally passed as a means to protect U.S. fishing resources exclusively for the United States’ fishing industry. Congress’ intent was to create a fisheries management system that allows Regional Councils made up of local and regional fisheries experts to exercise primary responsibility for managing the resource. The Secretary of Commerce (“Secretary”) was charged with overseeing this management to ensure that the MSA’s provisions, including the 10 National Standards, are followed by the National Marine Fisheries Management Service (“NMFS”). However, the Act has proven to be very different in practice from what is written, with perhaps the most serious gaps appearing in the difference between the intentions and expectations of the Act and the practice in reality. These differences have led to much controversy and dramatic tension throughout the United States between the regulators and the fishing industry.

Some of the controversy stems from: the government’s interpretation and equivocation of MSA provisions and statutorily defined terms; the use of sometimes outdated survey data and stock assessments to set Annual Catch Limits (“ACLs”); the accuracy of survey data due to the frequency and methods by which that survey data is collected and assessed; the allocation of resources in the industry; and a management system that is based on single-species rather than multi-species management when appropriate. At the core of and particularly concerning gaps between the MSA’s mandates and actual practice is the failure to realize the critical requirement in National Standard 2 that all management be

based on the “best available scientific information” (MSA § 302(h)(1)). The Agency has often taken the position that the best data can only come from its own staff. Failure to fully implement this part of the law is the source of many other issues, such as controversy over what is the “best available science,” what studies should be included in deciding which is “the best,” and who has the final say over what is “the best.” This narrow interpretation of the “best available science” has led in many cases to the acceptance of something far less than the “best” science. Another critical departure from congressional intent is a doctrinaire emphasis on sustainability of fishery resource over fishery communities and families. As under current law the Agency is deemed the sole arbiter of these questions, scientific research and ideas have been unfortunately restricted to the views promulgated by the governmental bureaucracy. In many ports throughout the United States, the end result of the current MSA and fisheries management system is an underperforming system, and the destruction of the fishing industry and the communities they support. Litigation from both conservation groups and the fishing industry cannot fully correct these problems and leads to a constant chaotic discourse among stakeholders. Improvements to -- and thus rewriting -- the MSA is necessary.

III. THE DEVELOPMENT OF TODAY’S MSA

There have been several amendments to the MSA, with those of 1996 and 2007 making the most significant changes. The 1996 reauthorization resulted in a fundamental shift from the Act’s primary domestic purpose being promotion of economic development of the fishing industry to: conservation of fishing resources, reducing bycatch, and protecting essential habitat; the addition of the terms “overfishing” and “optimal yield;” and defining optimum as meaning “as reduced by” maximum sustainable yield (“MSY”) rather than “as modified by.” While regulation aimed at conservation is necessary to ensure the continued availability of this valuable resource, the dangers of rigid government regulations and the unintended or unforeseen adverse consequences of government regulation multiply whenever regulations increase in number, complexity, scope, and enforcement. The current system exemplifies this maxim.

The 2006 reauthorization, and current version of the Act, mandates that the Council utilize ACLs to manage the fisheries and supports a market-based management system through the utilization of catch-shares. The reauthorization of 2006 also called for unscientific, hard deadlines to end “overfishing” and emphasized utilizing Ecosystem-Based Fisheries Management (“EBFM”). The insertion of such terms as “immediately”(16. U.S.C. § 1854(e)(3)(A)); the inclusion of rigid, arbitrary deadlines with no scientific basis whatsoever for rebuilding stocks that have been determined to be “overfished”; and the new requirement that Regional Councils not be allowed to set catch levels above those recommended by a Science and Statistical Committee (“SSC”)(MSA § 302(g)(1)(A)), which sometimes includes employees or staff of the Agency, are just a few of the 2006 changes that were well-intended, but have in practice hobbled our ability to manage fisheries in a way that is based on the “best available science,” and that is responsive to changing conditions.

Fisheries management performance must be improved upon. Improved performance and accountability for performance means that performance standards must be redefined. Mere reauthorization is unlikely to achieve the much-needed balance in fisheries management. A reauthorization that incorporates thoughtful amendments is critical to sustaining our nation’s fisheries resources

IV. PERFORMANCE STATISTICS

The MSA’s effectiveness and results have varied among different regions, but there are also many similarities, including problems in the consideration of performance statistics. The New England region serves as a good example to demonstrate this.

Currently, fisheries management performance in New England focuses on the narrow issue of whether stocks are “overfished” and the use of outdated economic statistics. The resulting performance statistics for the New England groundfish fishery are not encouraging. Despite intensive management and reductions in fishing effort, 13 out of 20 stocks are overfished and eight are subject to “overfishing” (the number overfished and subject to “overfishing” has not changed since 2007). Additionally, between 2007 and 2011, groundfish trips have declined about 30 percent, days absent have declined by about 25 percent, and number of vessels has declined about 30 percent. From 2007 through 2010, crew positions also declined from 1,700 to 1,200 positions, or by approximately 30 percent. Also, between 2007 and 2012, Total Allowable Catches (TACs) and/or ACLs declined by about 50 percent and landings/catch declined by 30 percent. Finally, price per pound has increased about 50 percent, and as a result gross revenue has stayed constant.

It is plain from these statistics that the so-called “overfished” condition of the stocks remains high, even though fishing intensity has declined by a considerable degree. There is a material job loss in the producing sector, which presumably generates job loss in the processing sector, and spreads throughout the fishing economy and the port itself. The overall job loss and the uncertainty and delays in the regulatory process contribute to the loss of fishing industry infrastructure in port communities and unaccounted for welfare costs in coastal communities. Other indicators of the adverse impacts to the nation are shore-side losses in fuel and repair (correlated with the reduction of trips and vessel loss), and a decreased supply of fish and increased prices for consumers. Indeed, the situation is so dire that the government has declared the New England groundfish fishery to be a “disaster,” and we now import over 90 percent of our seafood from countries that, in many instances, have little or no quality inspection guidelines or conservation measures in place.

These performance statistics give only a partial picture of the poor state of fisheries management and bring to light the considerable waste created under it. The waste includes: substantial underfishing, signaled by not attaining the OFL; unnecessary 25 percent buffers that constrain catch; continuing irrational, unnecessary and disgraceful discarding; and losses in yield incurred by attempting to rebuild stocks that have zero potential to be rebuilt. The waste caused by underfishing, discarding, etc., can amount to 10 of millions of dollars lost each year.

V. A NEED TO SEPARATE MSA FROM ITS IMPLEMENTATION

It is difficult to constructively criticize the MSA in a vacuum because, as implemented by the National Oceanic and Atmospheric Administration (“NOAA” or “Agency”) it reflects not the MSA by itself but a combination of the Act and both formal (i.e. Fishery Management Plans) and informal actions and rulemaking undertaken by NOAA.

The MSA has several purposes, including:

to take immediate action to conserve and manage the fishery resources[,] ... to promote domestic commercial and recreational fishing under sound conservation and management principles, including the promotion of catch-and-release programs in recreational fishing[,] ... to provide for the preparation and implementation, in accordance with national standards, of fishery management plans which will achieve and maintain ... optimum yield ...[, and] to establish Regional Fishery Management Councils to exercise sound judgment in the stewardship of fishery resources through the preparation, monitoring and revision of such plans under circumstances ... which take into account the social and economic needs of the States. (MSA § 2 (b)(1),(3)-(5))

To carry out the purposes of the Act, Congress mandated that:

“[a]ny fishery management plan prepared, and any regulation promulgated to implement any such plan, pursuant to this title shall be consistent with 10 National Standards, as laid out in the Act.” (MSA § 301(a)).

By merely reading the MSA, it would seem that National Standards 1 and 8 must be balanced with each other. However, NOAA in its implementation has not interpreted the Act in this way. Instead, NOAA, in its National Standard Guidelines has interpreted that they were laid out by hierarchy, with Standard 1 being the most important and superseding all others. Under the case law that has developed pursuant to the principles of administrative law that allows great deference to an agency that is presumed to be the “expert,” there is no check on this interpretation unless the MSA is modified by Congress to clarify this balance.

As a practical matter, there are two National Standards that create most of the controversy in fisheries management: Standards 1 and 8. However, much of this controversy would be eliminated or mitigated if they were more properly balanced and combined, and if National Standard 2, which requires that all conservation and management measures be based on “the best available scientific information,” was strengthened to clarify that, yes, indeed, all conservation and management measures MUST truly be based on the “best available scientific information.”

A. Restoring the Principle of National Standards Balance

A plain reading of National Standards 1 and 8 reveals that they are complementary and interrelated.

Standard 1 reads:

Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry. MSA § 301(a)(1).

And Standard 8 reads:

Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of paragraph (2), in order to (A) provide for the sustained participation of such communities and (B) to the extent practicable, minimize adverse economic impacts on such communities. MSA § 301(h).

Taking into consideration that every National Standard must achieve two things -- conservation and management -- it should necessarily follow that every standard has equal weight and all must be balanced to achieve both conservation and management. NOAA, however, has, primarily through the National Standard Guidelines and informal rulemaking, chosen to interpret and implement the National Standards in a way that in practice places conservation for conservation’s sake above all other goals, despite this interpretation and implementation being in direct conflict with the MSA and congressional intent. Conservation includes protecting the various species and habitats of the ocean environment. However, conservation for conservation’s sake alone does not serve the MSA’s goals of feeding the nation and promoting its fishing industries and communities. The MSA was never intended to protect fish merely so that they may die of old age in great rotting piles on the ocean floor. Management includes deciding how to use the fisheries resources to achieve several goals, including economic growth and stability for those who depend on the resources for their livelihood, in order to benefit the nation.

Management for any other purpose has become an afterthought; a box to check to show that it was “considered,” without being given any substantive weight. Worse, there is no incentive to get the number of fish necessary to meet these conservation goals “right.” In fact, there is strong incentive to apply excessive “buffers” to artificially reduce the allowable catch and overstate the number of fish needed to remain in the ocean. Why? Because the courts have required that these numbers must provide at least a 50% chance of meeting whatever conservation goal an SSC may choose. See *NRDC v. Daley*, 209 F.3d 747, 754 (D.C. Cir. 2000) (Court ruled that ‘to assure’ the achievement of the target F, to ‘prevent overfishing,’ and to ‘be consistent with’ the fishery management plan, the TAL must have at least a 50% chance of attaining a chosen conservation goal. *Citing*, MSA § 302).

As a result, courts will overrule the agency when the agency sets a number that has less than a 50% probability of meeting a conservation goal. However, the judicial system does not apply a similar rule to situations where the agency sets a conservation goal that has a less than 50% chance of being accurate. As the agency seeks to avoid being overruled in any court challenge, it will err in favor of conserving fish without regard to accuracy. This is why we see layers of excessive buffers that are cumulative and that unnecessarily reduce the number of fish allowed to be harvested. The layers of unduly ample buffers may be unnecessary and inaccurate. However, there is no penalty for erring in favor of conservation. If a 50% chance of being certain to achieve the selected conservation goal is acceptable, then under the current regime, choosing the conservation measure that is 90% certain to achieve that goal is even better.

In a system where socioeconomic harm is rarely adequately identified, and not even allowed to be considered unless two proposed alternatives have the same chance of meeting the chosen conservation goals, socioeconomic considerations will rarely, if ever, be considered a strong enough reason to reject a measure with a greater likelihood of certainty in meeting the conservation goal, regardless of the socioeconomic impacts. See *Lovgren et al v. Locke et al*, 701 F.3d 5, 35 (1st Cir. 2012) *citing*, *NRDC v. Daley* at 753 and stating further that adverse economic impacts on communities are subordinate to the MSA's overarching conservation goals.). Accuracy is unlikely to be achieved, as accuracy is not the goal and is not rewarded. These incentives must be viewed in light of the fact that as this paper details, the SSC often uses data that is too little, too late, and not entirely relevant in identifying and choosing conservation goals. In short, there is no check on the system for erring in favor of conservation, regardless of accuracy, and no incentive to obtain and use accurate and timely data.

Standard 8's relationship to Standard 1 has become one where socio-economic considerations are an afterthought. Yet, most would say, this National Standard was pre-eminent in the minds of the original drafters of the Fisheries Conservation Management Act (“FCMA”). Considerations associated with Standard 8 should place this objective in a central position, along with conservation, as a goal of management. The Agency has interpreted Standard 8 to mean that as long as the Council merely “considers” or “looks at” what the socio-economic impacts are, the Standard is satisfied. NOAA's implementation has placed an extremely low burden on the Council, and has drastically decreased the importance of Standard 8 and the real-life economic consequences that management decisions have on the local fishing industry and communities. The end result is that the adverse economic impact and hardship an ACL might create is of no real concern to the Agency and no cause for any action, regardless of how devastating.

There is no reason why the Agency could not implement the National Standards in a simple and straightforward manner. Rather than being bound by an extensive set of formulaic rules that do not necessarily make sense in specific fisheries management settings, a balancing and simple plain-language approach will maximize the flexibility and allow the Council to adapt and innovate FMPs on a case-by-case basis.

B. Enforcing the Mandate of National Standard 2

National Standard 2 forms the basis and backbone of Standards 1 and 8. Standard 2 is very clear and unambiguous:

“Conservation and management measures shall be based upon the best available scientific information available.” MSA § 301(a)(2).

Despite this seemingly clear mandate, there is much controversy over what the “best available science” is and who should decide what assessments should be used.

In the MSA, Congress did not define the location or from whom the “best available science” would come. The MSA does state that the Council’s ACLs:

“may not exceed the fishing level recommendations of its scientific and statistical committee or [a specific] peer review process.” MSA § 302(h)(6).

In its implementation, the Agency has interpreted that the best data would only come from their own internal data collection and analysis. Under dispute are not only the frequency of survey data collection, but also whether the assessment methods used are the best available. The Agency rarely, if ever, considers presenting or recommending data from other sources. The end result is that in setting ACLs the Council almost never considers any assessments outside of science center reports.

Congressional intent was to have the SSC and multiple other scientists present their studies and recommendations to the Council, and the Council then determines which scientific study is the best and sets ACLs based on the most reliable science. The MSA does not state that in order for an FMP to be consistent with the National Standards that the SSC report is the only fishing level recommendations that an ACL can be based on. There are instances where a Council member will point out that there is another peer-reviewed assessment that conflicts with the outcome of the SSC report. However, due to the Agency having interpreted National Standard 2’s “best available scientific information” to unequivocally mean only the SSC’s own data and analysis, if the Council were to approve an FMP that is based on a peer-reviewed assessment, it is almost certain that the Secretary would deny the FMP and reason that it is not consistent with Standard 2. Interestingly, Standard 2 limiting science to the “best available” puts a low ceiling on the scientific data available. The end result is that rather than being presented with various methodologies and the pros and cons of each, the Council only considers information from one source: research centers vetted by the SSC, including some government scientists. The result: Decisions are often based on less than the best science. To correct this, the MSA Section 302(h)(6) could be rewritten to state:

develop annual catch limits for each of its managed fisheries that are in accordance with the review process and requirements of the National Standards.

Another issue with Standard 2 is the limiting and narrowly defined interpretation of “science.” In its implementation, the word “science” in the MSA has been interpreted as meaning primarily biological information. The economic and social science information about the impacts on fishermen and fishing communities has gone by the wayside and has not been significantly studied. If the purpose of the SSC is to provide all relevant scientific evidence to the Councils to aid them in making their decisions, then how could the Councils possibly make sound and just decisions based on all the relevant facts about a fishery’s total value -- as Congress intended -- without all the information?

The Standard 2 science requirement demands a detailed review. Recently, the National Academy of Science’s National Research Council (“NRC”) released a report on fisheries management and stock

rebuilding plans that focused on 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.” In a positive action, the New England Fishery Management Council created the Risk Policy Advisory Panel to begin to improve upon the economic and social science measurements. This is a step in the right direction.

VI. DISCUSSION: REWRITING THE MSA

In viewing MSA modifications, the trade-off between desirability and feasibility is always paramount, with debate often relating to cost and political correctness. It may not be politically correct to consider changing the “overfishing” definition, but without doing so, the ability to achieve a balanced approach in implementing our National Standards and science-based fisheries management is unrealistic. The following discussion issues should be used as a partial agenda and starting point for a national debate on MSA improvement.

A. National Standards 1, 8, and 10 Must be Combined, Amended, and Balanced

Congress must assert that National Standard 10 is superior to all other concepts in the fishery management system. Human safety in the fishing industry cannot be compromised. Congress reasonably intended National Standard 10’s mandate to “promote the safety of human life at sea” to be the most important of the 10 Standards. MSA § 301(a)(10). Surely no one can argue that ensuring the safety of our nation’s fishermen, who risk their lives to provide healthy food, is not of the utmost importance. Rewriting the MSA to incorporate human safety into National Standard 1 is necessary to ensure that safety is superior to both conservation of the resource and socio-economics when developing and implementing FMPs.

In order to properly balance National Standards 1 and 8 and clearly indicate Congress’ intent to factor in socio-economic impacts when setting ACLs, Congress must combine those two standards into a single National Standard. By combining them, Standard 8 will have greater force and effect and result in the needs of the fishing community being a centerpiece of the MSA. In order to effectively combine the two, the adoption of new objectives is necessary.

Standard 1 needs to be modified in language and practice to take into account optimum yield and to provide, or to be based on, a realistic interpretation of “overfishing.” The term “overfishing” is a misleading and discriminatory term that has been misconstrued, evident by its pejorative nature and its scientific imprecision. The origin of the pejorative aspect of “overfishing” relates to the false assumption that all declines in fish stocks owe to fishing, when in fact there are other causes such as climate change and pollution impacts. However, over the years the term has been narrowly and incorrectly construed to relate depleted populations solely to the effects of fishing. This in turn makes the term discriminatory in nature because it implies that if a stock is not healthy, fishermen are to blame. To accurately reflect all the factors that affect a fishery, the term “overfishing” should be replaced with a cause-neutral term such as “stock decline.”

From the point of view of scientific precision, the term “overfishing” is scientifically equivocal and ambiguous. For the term “overfishing” to be used as a scientific concept, it has to have a precise meaning similar to the temperature of boiling water being fixed at 100 degrees Celsius. The theoretical models used to define “overfishing” do not correspond with data and would require that the defining models exhibit maxima to make an “overfishing” declaration; however, these maxima do not generally exist. Additionally, there is no unique definition of “overfishing.” “Overfishing” can mean both growth overfishing and stock overfishing, but in both instances, the individual using the term is using it in two

different ways. Furthermore, theories not following equilibrium settings but real stock are almost never in equilibrium. Lastly, theories of “overfishing” ignore the ocean environment and species-to-species interactions, both of which are critical sources of variation.

First, consider the requirement to attain MSY for every stock. Many fisheries in the United States are multiple-species fisheries. In other words they consist of several or many species simultaneously. It is impossible to adapt to a management regime that requires MSY simultaneously for each species in the fishery.

Second, consider the fact that the difference between yield, fishing mortality, or biomass in an overfished and an underfished stock can be negligible, thus 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 10-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, economists and optimization experts will recognize the reconfigured National Standard 1 as adapting to a well-defined and well-known programming problem. Maximizing an economic function of yield satisfies the socio-economic component of the standard. 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.

B. National Standard 2

National Standard 2 needs to be amended to have real force and effect. Good scientific practice is when decision makers are presented with multiple analyses and the pros and cons of each analysis. For fisheries management to follow good scientific practice, the Councils must be presented with multiple scientific analyses and an analysis of the pros and cons of each. The SSC should have increased input on various scientific methodologies, and particularly, data collection taking particular account of cost effectiveness. Currently, the Council considers for each stock one assessment method “recommended” by the SSC and sets catch limits based on each assessment. The SSC “recommendations” are presented to the Council, and due to the political culture, the Council follows the “recommendations.” In effect, the SSC is setting catch limits. The role of the SSC needs to be reconsidered so that it can focus more on scientific methodology, presenting all relevant assessments -- even if from outside the SSC -- to the Council, and less on setting catch limits, which is the Council’s function.

The rationale for increasing Council responsibility relates to the level of understanding of fish-population dynamics. In actuality, predictive understanding of fish population dynamics is limited. Put another way, scientific understanding is limited. Because of the limitation in scientific understanding, it makes sense to weigh more heavily on the competence of the Council, using information from the SSC, to set catch limits.

Additionally, in order to put teeth into the “best science” dictum, stocks need to be assessed on an annual basis, or at least on a more frequent basis than in current practice. Stock assessment should concentrate on the simplest methodologies and provide for technologically advanced methodologies for gathering real-time data. Lastly, innovative scientific leadership within the Agency needs to be rewarded, which ensures that the best science available is used and that there is incentive to improve upon analysis and processes. The main conclusion is that putting teeth into National Standard 2 requires institutional reform.

VI. REWRITTEN NATIONAL STANDARDS

The 10 National Standards should be combined and incorporated into five tenets, which will allow for a scientific-based fishery management system that balances conservation and sustainability for the fisheries, and for the people and port communities that comprise the industry.

These Five National Standards should be rewritten as follows:

(a) IN GENERAL — Any fishery management plan prepared, and any regulation promulgated to implement any such plan, pursuant to this title shall be consistent with the following, equally paramount, national standards for fishery conservation and management:

(1) Conservation and management measures shall not compromise the principles of safety of human life at sea. Conservation and management measures shall maximize yield (or some economic function of yield) subject to the constraint of keeping fishing mortality at or below a level specified by the Council. Conservation and management measures shall take into account and balance the importance of fishery resources to fishing communities with fishing mortality goals, by utilizing economic and social data that meet the requirements of National Standard (2), in order to (A) provide for the sustained vitality of such communities, and (B) minimize adverse economic impacts on such communities.

(2) Conservation and management measures shall be based upon the best scientific information available. The best available science shall be derived by a collaborative effort of government, educational institutions, and private and non-profit scientists coordinated by NMFS and NMFS's regional SSCs. The best scientific information available shall be determined by the Council after a comprehensive review of multiple analyses and the pros and cons of each analysis, as presented by the SSC in conjunction with other fisheries scientists. Advanced technological mechanisms shall be utilized in every instance to gather and analyze samples and data.

(3) Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches. An individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination. Conservation and management measures shall, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, account for and allow the bycatch to enter the marketplace.

(4) Conservation and management measures shall not discriminate among residents of different States. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation and maximize yield as specified in National Standard 1; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

(5) Conservation and management measures shall not have economic allocation as its primary purpose.

Condensing into a logical format, the five interrelated standards will enable NOAA, the NMFS and the Council to more effectively implement the Congressional intent of MSA. Let the debate begin, but let's have an honest debate on how to rewrite and reauthorize this most important statute. The clear purpose of our efforts should be to ensure that the fisheries management system is effective, fair, transparent, and responsive to the ever-changing natural environment and socio-economic needs of the fishing communities.

VIII. OTHER DRASTICALLY NEEDED IMPROVEMENTS IN THE MSA REWRITE

A. Congress must Clearly Define What it Intends the Agency's Role to Be

Deference to the Agency on scientific matters needs to be reduced or eliminated. Under the MSA, the Secretary does not have the power to create FMPs. His or her power is limited to promulgating FMPs developed by the Councils after reviewing them, only to ensure that they conform to the Act. MSA § 304(a)(1)(A). Under the MSA, the National Standard Guidelines "shall not have the force and effect of law;" and therefore, are not enforceable as if they are statutory provisions or any other law. MSA § 301(b). However, the Secretary's power over the years seems to have increased. By evaluating whether the FMPs are approved, partially approved, or denied based on their conformity to the National Standard Guidelines, the Secretary has essentially made the National Standard Guidelines mandatory.

The extension of NOAA's unchecked authority is illustrated by the fact that the few lines of Standard 1 in the MSA have been expanded to 35 pages of acronym-dense material in the Guidelines. NOAA has stated therein that the relationship of Standard 1 to other standards is that "National Standards 2 through 10 provide further requirements for conservation and management measures in FMPs, but do not alter the requirement of National Standard 1 to prevent overfishing and rebuild overfished stocks." See 50 C.F.R. 600.310(l) (2009). Not only is NOAA's approach in conflict with the original intent of the MSA, it is also inflexible and does not give maximum discretion and flexibility to the Councils to balance the standards, as Congress intended.

The Secretary's role and power has increased and become much stronger than Congress seems to have intended, resulting in a top-down management regime where the local Councils have vastly less authority than what Congress intended. In the upcoming reauthorization of the MSA, Congress must clearly define and limit the reach of the Secretary and the Agency's power and give the power back to the Councils as the primary body that develops FMPs because of their local knowledge and expertise.

B. The Adoption of Performance Measures

Performance measures need to be adopted and delivered in real time. More effectively utilizing the SSC and creating multiple Committees may be one means to achieve this goal. By creating multiple committees, such as a socio-economic committee, information about the economic and social science impacts to the fishermen and fishing communities will be studied and the Councils will have all relevant information about the fishery value and the trade-offs among various fishery management measures.

Regarding the biological SSC, there are still many areas that can be improved upon. The biological SSC should increase stock assessments to an annual basis and include waste indicators -- such as discards and underfishing -- in its performance measures. The standard of frequency and thoroughness should be carried through to other Committees as they are created.

The adoption of real-time, frequent performance measures and annual stock assessments are a prerequisite to improving fisheries management performance. With real-time performance measures that cover all areas of science, not only will the Councils have all relevant information, but they will also be able to make more informed decisions about how an ACL and FMP will affect the natural environment and the

fishing industry's economy.

C. The Arbitrary 10-Year Rebuilding Period Must be Amended

Under the MSA, the Council must develop a rebuilding plan for every overfished fishery, and in doing so, the Council must:

“specify a time period for rebuilding . . . that shall be as short as possible . . . and not exceed 10 years.” MSA § 304(e)(4)(A)(i)-(ii).

It is said that a congressional staffer, not a scientist, established the 10-year rebuilding timetable by counting the fingers on his two hands. He could have just as easily counted his fingers and toes, but that approach would have produced a nonsensical, non-scientific result as well. The mandate is completely arbitrary and not based on any scientific reasoning. Additionally, 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 National Standard 2's mandate) in a 10-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 actually “overfished.” Congress must rewrite this section to allow the Council to be able to have the ability to consider both biological and economic information to allow for the time frame for the rebuilding of stocks to be done on a case-by-case basis, using scientific facts, rather than a rigid and completely arbitrary counting of fingers or toes.

D. Cooperative Research Must Increase

Revision of data collection is also needed. Emphasis needs to be on utilizing fishing boats as scientific laboratories to sample fisheries and oceanographic data. Government research vessels might be repurposed to collect data on climate change.

It is likely that fishermen and vessel owners would volunteer their time, equipment, and log books to participate in cooperative research if there were an incentive for them to do so. However, there are concerns about their economic state, and whether the data will be considered by the Council.

If boats are allocated only so many days at sea, fishermen must use those days to fish and bring income into their small business. Thus, in order to ensure that fishermen are not penalized economically for helping complete research, Congress must mandate funds toward cooperative research and mandate the development of programs where a fisherman's days at sea to harvest fish are not reduced or otherwise affected by his or her aiding in research efforts.

As noted above, the Council receives limiting information. If there were a greater guarantee that research the fishing industry participates in and facilitates will be considered by the Council and Agency, then fishermen would certainly participate.

E. Congress Must Develop a National Scientific Working Group or Board

A national scientific working group needs to be established to hear complaints and appeals. A separate, small, independent agency that does not report to the executive office might be considered to provide oversight, checks, and balances. A solution might be to create a division within the Inspector General's Office that looks at managing the fisheries from a scientific and legal perspective.

F. Accountability for the Management Process

Mechanisms need to be developed to identify and improve underperforming entities. An independent audit committee should be established to evaluate NMFS efficiency in achieving the mandate of gathering the “best available scientific information” and utilizing the “best available science” to analyze the data and formulate conclusions that become the basis for FMPs. Such audits must include a review of both biological fisheries science and the science of socio-economic impact.

G. Congress Must Develop National Institutes

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, which will greatly constrain the quality of the reauthorization. The critical issues of fisheries management science need a national focus and national and regional programs. In order to motivate such an approach, NOAA might 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.

IX. CONCLUSION

It is necessary to observe again that extensive discussion on these important issues is required. If we do not have detailed, cooperative discussions, we arrive at the lowest common denominator.

There are several points mentioned in this paper that not only need further formal research, but also must be discussed both locally and nationally with all stakeholders. Cooperation among all stakeholders, including the fishing industry, regulators, public, and environmental groups, must occur in order to improve fisheries management law. We must find a way forward and collaborate. The end result of the current MSA and fisheries management system is a seriously underperforming management system. Our management system cannot continue to underperform, the adverse consequences to our nation’s fishing resources and industry are too severe and likely permanent.