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Southeast Regional Perspectives on Magnuson-Stevens Act Reauthorization

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On behalf of The Pew Charitable Trusts (Pew), I appreciate the opportunity to provide testimony on the progress made in implementation of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) in the Southeastern United States and what refinements will be needed to improve conservation and management to meet the challenges of the 21st century.

Pew has been involved with the Magnuson-Stevens Act for 20 years. Pew grants supported fishing and environmental groups involved in the reauthorization of the Act in 1996 and again in 2006. In 2007 we began operation as a not-for-profit advocacy group that supports effective implementation of the Magnuson-Stevens Act at the national and regional level. For over five years we've worked with managers and stakeholders to advance policies that will ensure abundant fish and healthy oceans for generations to come in the South Atlantic, Gulf of Mexico and U.S. Caribbean regions.

As Pew's director of U.S. Oceans, I oversee our fisheries advocacy in the United States. These include efforts in the Northeast, South Atlantic, Gulf of Mexico, U.S. Caribbean, and the Pacific. Before joining Pew, I was executive director of the Marine Fish Conservation Network, the largest national coalition dedicated exclusively to promoting the sustainable management of ocean fish. The Network was actively involved in the 1996 and 2006 reauthorizations of the Magnuson-Stevens Act. Previously, I was a fishery biologist with the National Marine Fisheries Service, leading agency efforts to protect essential fish habitat. Finally, I was a staff member of the U.S. House Committee on Merchant Marine and Fisheries, working on a variety of fisheries, environmental and boating safety issues.

Our involvement in the Magnuson-Stevens Act began when we looked at scientific assessments of the status of a number of iconic fish such as New England's cod and the Southeast's red snapper and found populations that were a tiny fraction of their historic size. In our search for causes we found a system that allowed overfishing, delayed action to rebuild depleted populations, and allowed economics to trump conservation. To use a word that we commonly hear when Magnuson reauthorization is discussed today, there was a lot of "flexibility" in our federal management system. Unfortunately, while the Act provided flexibility to use different management tools, it also allowed flexibility to avoid the difficult but necessary decisions to put these species on the road to recovery.

Congress also saw that flexibility was allowing managers to avoid addressing these problems and twice amended the Act to establish clearer mandates to restore the valuable fish populations that are the cornerstone of the fishing industry and the coastal communities it supports.

In the 1996, a bipartisan group of lawmakers passed the Sustainable Fisheries Act, which amended the Magnuson-Stevens Act to:

- Prohibit fishery managers from using an economic rationale to set catch levels above what is sustainable;
- Require timely rebuilding of overfished populations (populations of fish that are at unsustainably low levels) to healthy levels;
- Require managers to implement practicable measures to minimize the catching and killing of non-targeted ocean wildlife, known as bycatch; and
- Require the identification of essential fish habitat and practicable measures to protect it from damaging fishing.

Despite these changes, overfishing continued to prevent the recovery of many fish populations. Again, a bipartisan group of lawmakers, led by the late Senator Ted Stevens (R-Alaska) passed legislation strengthening the Magnuson-Stevens Act in 2006. That legislation was signed into law by President George W. Bush in 2007. The most recent amendments require fishery managers to follow the recommendations of their science advisors to set annual catch limits that end and prevent overfishing and include accountability measures to ensure those limits are not exceeded. The catch limits were to be established by 2010 for fish populations experiencing overfishing, and by 2011 for all other populations. The 2006 amendments also prohibited overfishing in rebuilding plans designed to restore depleted fish populations.

The Magnuson-Stevens Act is Working

Southeast Successes

Because of effective implementation of the 2006 amendments by the National Oceanic and Atmospheric Administration's Fisheries Service (NOAA Fisheries) and the regional fishery management councils, overfishing is ending and depleted fish populations are being restored. According to NOAA Fisheries' most recent Status of Stocks update, 34 fish stocks have been restored since 2000 and the number of stocks subject to overfishing is 26, down from 72 in 2000.

The 34th restored stock is the South Atlantic black sea bass. This success story is a testament to the Magnuson-Stevens Act's requirements to establish science-based catch limits that do not allow overfishing and accountability measures to ensure compliance with those limits.

For 30 years, fishermen caught black sea bass faster than they can reproduce and continued overfishing drove the fish to dangerously low levels. Managers put a rebuilding plan in place to comply with the 1996 requirements to restore this depleted fish population, but lax implementation of the rules failed to prevent its continued decline. In January 2011, management measures for black sea bass and eight other species subject to chronic overfishing were implemented and included stronger consequences when fishing limits are exceeded.[1]

This was not easy. It took the visionary leadership of several members of the South Atlantic Fishery Management Council. But the push for annual catch limits and enforcement of those limits has enabled the council to begin reversing the damage done by overfishing. After more than two decades, scientists are now finding increases in the average size, age distribution, and number of sexually mature females among black sea bass. This growth in the capacity of the species to reproduce effectively promises more fish for the future.[2]

Even better news is a scientific study completed in April, which found overfishing of black sea bass had ended after more than 20 years and the target for the population's recovery had been achieved. As a result, managers doubled the catch limit for this season from 847,000 to 1.8 million pounds.[3] This should have a positive impact for ports from North Carolina to Florida as fishing quotas and seasons increase. In fact, a study Pew commissioned last year concluded that overfishing of black sea bass cost the region $138 million per year in combined direct and indirect recreational fishing expenditures from 2005 to 2009.[4]

Red snapper is another southeastern species greatly damaged by decades of overfishing. By 1988, overfishing of red snapper in the Gulf of Mexico had reduced the spawning population to less than 15 percent of the minimum target level for this population.[5] Disputes over how to rebuild it, however, went on for over 15 years. By 2006, the population of reproductively mature red snapper was estimated to be only 17 percent of the targeted level.[6] The next year, a federal court ruled that NOAA managers were not taking appropriate action to rebuild red snapper, and ordered changes. In 2008, a science-based rebuilding plan was implemented finally starting this species on the road to recovery after more than twenty years of sanctioned overfishing.

However, rebuilding a species that has been depleted over many decades and can live over 50 years is neither quick nor easy. Full recovery of the red snapper population in the Gulf of Mexico is not anticipated until 2032. This is due to the species' long life span and the need for many more older females in the population, which are far better breeders than younger fish. In fact, one 24-inch red snapper has been estimated to produce as many as eggs as 212 seventeen inch red snappers.[7] Thus, these older, larger fish have a disproportionate impact on the population's reproductive potential and are critical to red snapper's recovery.

Today we are starting to see the fruits of catch limits and other efforts to enforce and fine-tune rebuilding plans. For example, after years of annually exceeding its annual quota for red snapper, the commercial sector has abided by catch levels for the last eight years. A 2009 assessment found Gulf red snapper overfishing had finally ended after more than two decades of overexploitation.[8] This year the allowable catch jumped to 11 million pounds, up 120 percent from 2008, when the most recent rebuilding plan

was implemented. This is the highest allowable catch ever for Gulf red snapper and the fourth year in a row such an increase occurred.

Significant challenges remain in determining how to ensure the recreational sector does not continue to exceed their allocation of the catch limit, as has happened nearly every year since 2007, while providing adequate opportunity for offshore anglers to target this popular species. As managers work to address this issue, it is critical that adhering to the rebuilding plan remain the top priority of Congress and the Gulf of Mexico Fishery Management Council. Our analysis of the cost of overfishing in the Gulf red snapper fishery found that recreational fishing expenditures could have generated an additional $33.2 million annually between 2005 and 2009 for the region, and commercial fishermen lost $12.3 million in 2009 alone.[9]

In addition to these successes, the most recent update of the NOAA Fisheries Status of Stocks lists South Atlantic red grouper, and Gulf of Mexico gag grouper, gray trigger fish and greater amberjack as no longer subject to overfishing.[10] While these fish are still designated as overfished and in rebuilding plans, this is an important step in their restoration.

National successes

These stories are part of a larger emerging picture of success that is happening in fisheries across the country. Annual catch limits designed to end and prevent overfishing were established through amendments to all 46 federal fishery management plans by June 2012, meaning 371 stocks and stock complexes are now managed under plans with science-based limits.[11] These limits have ended overfishing for 22 of the 38 (58 percent) U.S. stocks subject to overfishing in 2007.[12] In addition, 34 overfished or depleted stocks have been declared rebuilt since 2000.[13]

The recently released National Research Council (NRC) report on its evaluation of rebuilding under the Magnuson-Stevens Act echoed this success noting that the current rebuilding approach has "resulted in demonstrated successes in identifying and rebuilding overfished stocks" and that "fishing mortality has generally been reduced, and stock biomass has generally increased, for stocks that were placed in a rebuilding plan."[14] They go on to say that "the legal and prescriptive nature of rebuilding mandates forces difficult decisions to be made, ensures a relatively high level of accountability, and can help prevent protracted debate over whether and how stocks should be rebuilt."[15] They also note that "setting rebuilding times is useful for specifying target fishing mortality rates for rebuilding and for avoiding delays in initiating rebuilding plans."[16]

Despite the demonstrated success of the Magnuson-Stevens Act in rebuilding depleted fish populations, some stakeholders are calling for greater flexibility in establishing rebuilding plans. Such calls ignore the fact the Magnuson-Stevens Act has a great deal of flexibility in how long those plans should be. The Act currently allows rebuilding plans to

exceed the law's 10-year target (which is twice the time scientists calculate that a majority of fish populations require for rebuilding)[17] to accommodate the biology of the fish species, other environmental conditions, or management measures under an international agreement. Further flexibility exists to amend rebuilding plans when new information on the status of the stock becomes available. This flexibility is apparent when examining current rebuilding time lines, which range from four years to more than 100 years. Over half of the plans (23 of 43) are longer than 10 years due to species biology and environmental conditions.[18]

Restoring a depleted fish population causes short-term economic hardships for affected fishermen. Managers must acknowledge and mitigate those adverse effects, but not at the expense of needed conservation measures, particularly when considering increased economic returns and employment opportunities that will result from rebuilt populations. For example, half of the rebuilt stocks with available data now produce at least 50 percent more revenue than when they were classified as overfished, and seven stocks produce revenue that is more than 100 percent higher than the lowest revenue level when classified as overfished.[19] Economists at NOAA Fisheries estimated in 2011 that rebuilding all depleted fish stocks that year would have generated an additional $31 billion in sales, supported an additional 500,000 jobs, and increased the revenue that fishermen receive at the dock by $2.2 billion.[20] Clearly, the financial benefits of restoring our nation's fish populations for fishermen and coastal communities are huge.

Decades of overfishing have diminished many of our ocean fish populations and put coastal communities that depend on them in greater economic hardship. But thanks to bipartisan efforts in Congress in 1996 and 2006 and the hard work of managers and stakeholders at the regional councils, the United States now has one of the best fishery management systems in the world. It is a system that has proven its ability to end overfishing, recover depleted populations, and provide jobs and income to fishermen and their communities. While challenges remain, it is clear that the Magnuson-Stevens Act is working, and any changes we consider must build on the recent successes and not sacrifice the advancements we have made.

Challenges

Broadening the focus of fisheries management

As discussed above, we have made a great deal of progress improving the status of individual fish populations since passage of the 2006 amendments to the Magnuson-Stevens Act. In order to ensure continued success we must maintain our commitment to science-based management that prevents overfishing and rebuilds depleted populations while broadening the focus of management to minimize the impact of fishing on larger marine ecosystems. This step will place a greater focus on restoring and maintaining the health and resiliency of the ecosystems that underpin fisheries productivity. It will require strengthening existing requirements to protect the habitats that fish depend on for reproduction and growth, and reduce non-target catch or bycatch. It also requires

managing forage fish so that they are abundant enough to support the larger fish, marine mammals, and birds that depend on them for food. Finally, it requires developing a better understanding of how species interrelate with each other and the surrounding ecosystem and making fisheries management decisions that will promote the restoration and maintenance of healthy and resilient ocean ecosystems.

The need to take this step is more important and timely than ever. Our oceans face significant and numerous stressors, such as the impacts of global climate change and diminished water quality from upland uses. The impact of increased carbon in the atmosphere is having a significant impact on the ocean which sequesters 20 to 35 percent of anthropogenic CO_2 emissions.[21] This is causing the ocean to become more acidic, which in turn is impeding the growth and survival of shell-forming marine organisms like clams and oysters and could have implications for other marine species. We are also seeing ocean waters warming which is having a profound effect on the distribution of marine organisms, especially fish. Recent studies have documented the worldwide shift of fish towards the poles and to deeper water as they seek cooler water.[22] The impacts of these system stressors require a broader approach to management that ensures ocean ecosystems can support the healthy fish populations on which our coastal communities depend.

The science and tools exist to begin the transition to ecosystem-based fishery management. Managers should not wait to begin taking action. There are a number of actions that managers can take now to promote healthy ocean ecosystems.

Bycatch, is the incidental catch of ocean wildlife in non-selective fisheries. This is a key source of unaccounted mortality for many marine species. Bycatch occurs in both commercial and recreational fisheries, and is of particular concern when bycatch species are classified as overfished and in need of rebuilding under the Magnuson-Stevens Act, or threatened or endangered under the Endangered Species Act. Economically, bycatch equates to lost opportunity – it can preclude more valuable uses of fish resources and reduce future productivity by killing juvenile fish and mature reproductive fish.

In 1996, Congress added National Standard 9 to minimize bycatch and bycatch mortality, and a separate requirement to establish a Standardized Bycatch Reporting Methodology. NOAA Fisheries' 2011 National Bycatch Report, which was based on information from 2005, estimated that nationally 17 percent of the fish caught were bycatch.[23] This is likely an underestimate because bycatch data is inconsistently recorded so potentially large sources of mortality are not accounted for in either stock assessments or when counting total annual catch.

In the Southeast, struggling populations like red snapper, speckled hind, and warsaw grouper are all subject to high levels of mortality from bycatch, and the available data likely undercounts the bycatch levels. In some areas of the country, entire schools of forage fish, which provide a vital ecosystem link between small, protein-rich plankton

and top predators, are indiscriminately scooped up and discarded dead in large numbers. Surface longlines in the Gulf of Mexico kill over 80 other marine species such as billfish, sea turtles and sharks along with the target yellowfin tuna and swordfish.

Bycatch mortality is particularly challenging to monitor in the recreational fishery given the sheer number of anglers who take to federal waters off the southeast coast of the U.S. each year. In 2011, over 3 million recreational anglers took 23 million trips in the Gulf of Mexico, and over 2.3 million recreational anglers took 18 million trips in the South Atlantic.[24] Unlike in many of the inshore fisheries managed by state agencies, catch and release fishing in deeper, offshore waters too often results in these fish not surviving release back into the water. This is because they cannot withstand the rapid change in pressure as they are pulled to the surface. There is promising evidence from the Pacific coast that rapid descent devices may improve the odds of survival for these fish, but more research is needed to determine their effectiveness for species in the warmer waters of the southeast U.S. This is an area that could benefit from additional cooperative research between fishermen and scientists.

Quantifying and reducing bycatch must become a key mandate for federal fishery managers if we are to recover ocean ecosystems and fully realize the economic potential of fisheries.

Forage fish are a key link in the marine food web between the microscopic plants and animals that inhabit the sea and the marine predators that eat them. Humans are inextricably linked to these tiny fish because many of these top level predators are the fish we love to catch and eat or the marine mammals and birds we love to watch. The Lenfest Forage Fish Taskforce, a group of 13 eminent scientists from around the world, spent three years conducting a comprehensive global analysis of forage fisheries and found that three quarters of marine ecosystems worldwide have predators that are highly dependent upon forage fish.[25] Scientists have estimated that total consumption of forage fish by the world's marine mammals can amount to 20 million tons a year,[26] while seabirds require roughly 12 million tons annually.[27] The Gulf of Mexico is home to the largest forage fishery in the nation, menhaden, but state-based regulators have resisted establishing meaningful limits to ensure this critically important fish will continue to meet its role as food for the larger ecosystem. In Florida, conservation of forage fish like mullet which support world class sport fisheries for red fish, tarpon and snook was dealt a blow by a recent Florida circuit court decision that overturned enforcement of almost 20 year old protections against the use of gillnets in state waters.

These recent actions are unfortunately typical of how the nation manages its forage fish; paying little regard for the critical role they play in feeding the larger ecosystem. These species deserve special management that accounts for their unique role in supporting healthy ecosystems. As the Lenfest Taskforce found, "conventional management can be risky for forage fish because it does not adequately account for

their wide population swings and high catchability. It also fails to capture the critical role of forage fish as food for marine mammals, seabirds, and commercially important fish such as tuna, salmon, and cod."[28]

Habitat is critical to healthy fish populations and ecosystems. It includes areas for fish to spawn, hide from predators and feed. But fishing practices like trawling or dredging can decimate essential habitats, often after just one pass. Additionally, pollution from industry or land runoff can damage the near-shore and estuarine habitats that are important nurseries for ocean fish. These essential habitats must be protected from fishing and non-fishing impacts to ensure that their essential functions are not interrupted. The 1996 amendments required NOAA Fisheries and the councils to describe, identify, conserve, and enhance essential fish habitats. While each fishery management plan describes and identifies these habitats, the designations are often so broad that their utility to focus protection efforts is limited. In addition, habitat conservation and protection is poorly integrated into fisheries management. For example, nearly the entire Exclusive Economic Zone in the Gulf of Mexico region is designated as essential fish habitat for reef fish species.

However, the South Atlantic Fishery Management Council has utilized Coral Habitat Areas of Critical Concern designations to effectively protect five areas of deepwater coral covering 23,000 square miles from fishing activity and gears that could damage these sensitive areas and to prohibit their harvest.[29] In addition, all three southeast regional Councils have designated small marine protected areas aimed at protecting specific species, predominantly snappers and groupers. Many of these species are particularly vulnerable to depletion due to their biological characteristics. Some, like gag grouper, are protogynous hermaphrodites, meaning all start as female and only some develop into males as they get older and larger. Heavy fishing pressure can snare many females that might potentially turn into males and throw the natural process out of balance. In the Gulf of Mexico, male gag had dropped from seventeen percent of the population in the 1970s to just two percent in the 1990s. Researchers at the Florida State University Coastal and Marine Lab found that inside the Madison Swanson Marine Reserve, an approximately ten mile by ten mile area designated over a decade ago to protect gag, that the percentage of males inside the reserve was six times higher than outside the reserve.[30]

Gag and other species also form dense spawning aggregations in the same locations each year, which can be quickly wiped out when targeted by fishermen. Additional tools to expand protection for critical habitat, spawning fish and corals as well as funding to monitor and assess these areas could boost these populations and speed recovery of depleted species.

Improving fisheries data

The conservation provisions in the Magnuson-Stevens Act are successful because they are grounded by our fisheries science, investments in data collection, and our sound,

science-based legal framework. Managers and scientists have some information about every federally-managed fish ranging from the biology, habitat preferences, distribution, and catch, to fishery independent surveys and scientific assessments of populations health. Our management system is unique in its reliance on this extensive body of knowledge, and its commitment to basing decisions on science not politics.

NOAA Fisheries has data on all federally managed fish, but the type of information varies, as commercial fisheries tend to have the most complete data sets. However, there are a number of methods to establish scientifically-sound catch limits without a full stock assessment. Catch limits can be based on average catch and the catch trends over time. If catches are stable, the limit may be set above the average but within the historical catch levels. If the catch is declining over time, a more conservative catch level may be required. Catch limits can also be set based on basic growth parameters and average lengths of fish caught. Where fish exist in groups, one assessed species from the group can be used as an indicator species to gauge the health of the whole complex. In other words, there are tools available for managers to set annual catch limits for all species, even without a stock assessment. This proactive approach is intended to prevent overfishing and population depletion. The strategy of setting limits on how many fish can be caught each year before a fish stock reaches critically low levels, should avert tougher, more painful restrictions in the future by managing fish populations wisely now.

The fact that these techniques are available does not mean we should be satisfied with the data that is currently available for management. Given the challenging budget climate in Washington, we should look toward technological or innovative solutions that will allow managers to collect and manage data more efficiently.

Many regions still rely on paper logbooks and dealer reports sent through the mail to collect information on catch. Technological solutions exist to improve the speed and accuracy of fisheries data collection, including electronic logbooks and dealer reports, vessel monitoring systems that track vessels' location and whether or not they are fishing, as well as at-sea video monitoring. Integrating these electronic monitoring systems with targeted at-sea human observer coverage and increased dockside monitoring would greatly improve the data available on what is caught where, what portion of the catch is discarded and how much is landed and sold. These systems are available now, but they are not commonly used in the Southeast. In addition to electronic data collection systems, more effort must be focused on electronic databases that could be used to receive, analyze, and disseminate fishery information in near real time. This would allow managers to react quickly to prevent catch limit overages and thus reduce the uncertainty around compliance with catch limits. Reducing uncertainty could lead to additional fishing opportunities because managers would have more confidence that the result will not exceed the science-based limit.

The public, including non-federal managers and academics, must also have access to fisheries data so that it can effectively participate in the management process. Amendments made to the Magnuson-Stevens Act in 2006 restricted access to observer data. While implementing regulations have not been finalized, the proposed data confidentiality rule would restrict disclosure of observer data to the public, and fishery management council members who are not federal employees, leaving councils in the dark about what is being caught where. Greater transparency will lead to better council decision making.

Greater use of technology must also be supplemented with more cooperative research with the fishing industry, state governments, and the academic community. NOAA Fisheries can't continue to do the lion's share of the data collection on its own. Involving the fishing industry, both commercial and recreational for hire, cooperative research will provide more data collection opportunities. It will give the industry a better understanding of how information is gathered and scientists a deeper appreciation of on-the-water expertise held by fishermen.

Finally, Congress should explore securing a dedicated source of funding for cooperative fisheries research, monitoring, and management. Legislation introduced in the last Congress, would update the Saltonstall-Kennedy program which is funded from duties on imported fish products, and directed millions of dollars (estimated at $85 million in FY 2013) to a newly created regional grant program. These funds would have provided the regional fishery management councils with the opportunity to identify and obtain funding for priority projects such as: stock assessments and surveys; recreational data collection; testing and deployment of environmentally-friendly fishing gear; dockside, at-sea, and electronic monitoring; social and economic research; and habitat restoration and protection. Currently the vast majority of Saltonstall-Kennedy funds are used by NOAA Fisheries to offset the cost of its fisheries data collection and management programs. Using these funds for cooperative projects would allow these funds to go farther and do more.

Reauthorization of the Magnuson-Stevens Act

As discussed above, the Magnuson-Stevens Act is working; we are turning the corner on preventing overfishing, recovering depleted populations, and moving towards a fishing industry that is both sustainable and profitable. The Act's focus on scientifically-based fisheries management has made U.S. fisheries some of the best managed in the world. While we look ahead for ways to further refine our current system, we must not alter the strong provisions that have gotten us so far. Science-based catch limits that do not allow overfishing and the rebuilding requirements are the cornerstone of our fisheries success. But while we have made a great deal of progress restoring individual fish populations, more focus must be placed on restoring and promoting healthy and robust

marine ecosystems. Such a broader focus will be essential to face the challenges of the 21st century.

As Congress considers updates to the Magnuson-Stevens Act, we make the following recommendations for inclusion in a reauthorization bill:

Maintain the core conservation provisions of the Act, including requirements to:

- Prohibit overfishing;
- Rebuild overfished populations within existing, prescribed timeframes; and
- Establish science-based annual catch limits for all federally managed species with accountability measures if the limits are exceeded.

Maintaining science-based catch limits and accountability measures for all federally managed species helps ensure that populations not yet depleted or whose status is unknown will not decline. This proactive strategy of setting limits before a fish stock reaches critically low levels should avert tougher, more painful restrictions in the future. Waiting for a crisis before acting is poor fishery management. Through wise stewardship now, we can avoid overfishing and depletion of valuable fish species and the consequent economic hardship. Weakening the Magnuson-Stevens Act's conservation requirements jeopardizes the progress fishery managers, scientists, dedicated fishermen, conservation advocates, and others are making and places important public ocean resources at greater risk.

Adopt an ecosystem-based fishery management approach

Fishery management typically focuses on the most important commercial and recreational species, with an emphasis on the maximum sustainable amount of each fish that can be caught. A broader approach that considers the health of multiple species, the critical interactions among these species, and the quality of the habitat they require will help conservation of the ocean ecosystems that sustain our fisheries. A Congressionally mandated ecosystem advisory panel recommended in 1998 that each regional fishery management council develop fishery ecosystem plans.[31] Several councils have developed these plans. However they have done so without the benefit of national guidance on what information and analysis should be included, are typically advisory, and are not always incorporated into fishery management plans.

<u>Key Magnuson-Stevens Act modifications</u>:

- Require councils to develop fishery ecosystem plans and specify how ecosystem-based conservation measures will be incorporated into fishery management plans.
- Prohibit the development of new fisheries or fishing in new areas unless and until the impacts of any proposed activity are analyzed and ecosystem protection measures are in place.

Strengthen requirements for assessing and avoiding bycatch

Bycatch, the unintended catch of non-target fish and wildlife, is a persistent problem for fishery managers. NOAA Fisheries estimates that 17 percent of all the fish caught in the United States are bycatch. The vast majority of this wildlife is thrown overboard dead or dying. Furthermore, despite the requirement to establish a standardized system for assessing the amount and type of bycatch in each fishery, in far too many instances information on bycatch is lacking. Strengthening national policies to adequately assess bycatch through at-sea observation, increasing access to observer data, plus avoiding bycatch in marine fisheries will lead to better informed management decisions and improved ecosystem health.

Key MSA modifications:

- Require fishery management measures to "avoid" bycatch.
- Expand the bycatch definition so that it includes seabirds and marine mammals, retained incidental catch, and unobserved mortality due to a direct encounter with fishing gear.
- Repeal limits on the access to federally funded observer data.

Strengthen requirements for protecting essential fish habitat

Healthy coral reefs, deep sea canyons, fish spawning aggregation sites, and other ocean habitats provide vital areas for fish to spawn, feed, and take shelter. Conserving fish habitat is important for maintaining healthy fish populations and productive ocean ecosystems. Yet, most management efforts in place today are insufficient for addressing the adverse impacts from fishing and non-fishing related activities in a manner that ensures essential fish habitat is healthy and functional. Strengthening the Magnuson-Stevens Act's requirement to conserve fish habitats is a fundamental step Congress must take to improve the productivity of our nation's marine ecosystems.

Key MSA modifications:

- Require fishery management measures to minimize adverse impacts to essential fish habitat caused by fishing.
- Enhance protection of "habitat areas of particular concern" by codifying this habitat subset in the Act and prevent adverse effects from fishing activities in these areas.
- Require councils to designate and protect deep sea corals.
- Improve protection of essential fish habitat from non-fishing activities by requiring federal agencies that fund, undertake, or authorize activities that may have an adverse effect on such habitat to minimize the adverse effects, thereby requiring action rather than the typical communication between the agency and Secretary of Commerce currently undertaken.

Ensure an adequate forage base for fish populations and marine wildlife

Forage fish serve an important role in our ocean ecosystems as an essential link between microscopic plants and animals they eat and ocean predators, such as larger fish, birds, whales and other marine mammals that consume them. Herring, menhaden, sardines, and other forage fish provide a vital food source for commercially and recreationally sought-after fish species, such as tarpon, cod, striped bass, king mackerel, and salmon. Thus, forage fish provide a significant foundation for our nation's fishing industry and coastal communities. However, management of many of the nation's forage fish populations does not account for predator needs. Congress should require fishery managers to take stock of, protect, and maintain adequate forage fish populations and then, amend or establish management plans so that they factor in the vital role of forage fish in the ecosystem.

Key MSA modification:

- Require Councils to establish measures for managing forage fish that adequately account for the role these fish play in the larger ecosystem.

Conduct thorough scientific assessments and incorporate them into a management plan before allowing a new fishery

Too often, fishing occurs on new species, is expanded into unfished ocean waters, or utilizes new gears without adequate analysis of the impact. This practice has contributed to overfishing of many species, bycatch problems, and habitat damage. Evaluating a new species' population levels, reproductive rate, role in the food web, potential impacts of fishing, and other factors to establish an appropriate management framework in advance of allowing a fishery to begin is a common-sense approach that will help identify potential problems before they occur. In 2009, the North Pacific Fishery Management Council voted to prevent the expansion of industrial fishing in Arctic waters to limit stress on ocean ecosystems. This is a model that should be adopted in other ocean waters.

Key MSA modification:

- Establish a more conservative, science-based approach to allowing new or expanded fishing activities by prohibiting: a) introduction of new fishing gear in an area, (b) extension of fishing into current unfished areas, or (c) the reintroduction of a prohibited fishing gear into a closed area, until the Secretary of Commerce determines these new actions will have minimal adverse effects on ecosystem.

Thank you again for the opportunity to share the views of The Pew Charitable Trusts on how the Magnuson-Stevens Act is working in the Southeastern U.S. and what

modifications should be made in the next reauthorization. I look forward to answering any questions you may have.

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