TOPIC: *LIVING MARINE RESOURCES*

KEY ISSUE: *Aquaculture*

ISSUES RAISED

- Hawaii has been moving forward with sustainable use of its ocean space for aquaculture; issued first commercial lease in State waters for open ocean project. (Colom-Agaran)
- Company concept is to apply modern aquaculture and bioprocess techniques, together with knowledge of life cycles of marine invertebrates and marine algae, to high-yield culture for eventual extraction of bioactive chemical constituents. Almost insurmountable hurdles of local, state, federal permitting and obtaining seed funding. (Mendola)
- Pollution, particularly waste, from aquaculture a problem. (Ford)
- Aquaculture enhancement and "fish for food" have difficulties with acceptance; local communities, environmental organizations, etc. (Gutting)
- Aquaculture causes variety of problems: habitat loss, degraded water quality, movement of alien species and diseases. (Safina)
- NOAA, USDA, EPA, USFWS, USDA have roles, sometimes contradictory, confusing and counterproductive.
- Disappointed with NMFS SE hot-cold efforts; encouraged by NOAA OAR FY01 national competition for innovative research: multi-investigator, multi-disciplinary, multi-institutional, multi-state. (Haddad)
- If aquaculture ceased using fish meal in feeds tomorrow, there would be no impact on landings of fish to make fish meal because other agriculture production sectors would buy it all. (Haddad)
- Permit Requirements:
  1) There was no consistency in support for the growth of this new industry;
  2) Those interested in an aquaculture venture had to fight through a maze of permit requirements. (Chew)
- Mistakes Made: In establishing early aquaculture operations there were major losses of investments; the lending institutions shied away from making such loans for many years. (Chew)
- The public-at-large should be better educated about the importance of aquaculture worldwide and its impact on the U.S. economy. (Chew)
- Regulations on effluents from aquaculture facilities are critical issues. (Chew)
- Competition for space in marine and freshwater habitats creates conflict between aquaculture and shoreline property owners, traditional fishermen, and aquatic farmers. (Chew)
- Those in the scientific field should recognize that aquaculture is a tool for replenishing depleted wild stocks of fish. (Chew)
- Aquaculture can produce more food per unit area at a lower environmental cost than nearly any other form of food production. (Chew)
- The NMFS is good for marine fish culture, and for enhancement, but they have not been effective when it comes to aquaculture. (Chew)
- It is difficult to give the approximate level of research funding that is expended in other countries, but other country governments subsidize aquaculture. There are competitive grants and small business opportunities. (Chew)

- The development of aquaculture in the U.S. is in the national interest and requires a national policy. Development of marine aquaculture requires the integration of aquaculture into an overall coastal and ocean policy that respects the rights of states and local communities. [discussion provided] (Daniels)
- As with all human activities, aquaculture has social, economic, political and environmental impacts. These impacts should be considered within the context of other activities and cooperation is needed at national, regional, and international levels among sociopolitical and academic institutions and the fisheries and aquaculture sectors. [discussion provided] (Daniels)
- Aquaculture needs to be integrated into an overall national policy on coastal zone management and the oceans. [discussion provided] (Daniels)
- Marine aquaculture faces many challenges and obstacles as a relatively new industry. Many of these require special attention from Federal agencies and through additional funding. [discussion provided] (Daniels)
- The development and sustainability of marine aquaculture requires a sound scientific foundation, human resource capacity building, and open communication both at a National and international level. [discussion provided] (Daniels)
- When answering whether the U.S. should work to develop partnerships with foreign countries for our aquaculture production, we should decide if we, as a nation, want to delegate responsibility of our food production to someone else. We should seriously consider the strong likelihood that they do not have the inspection system set up to verify the quality and safety of the food. (Daniels)
- Land grant institutions have worked on agriculture activities for a very long time. Aquaculture is relatively new. And, while aquaculture has been appearing more and more in the RFPs for funding agencies, competition exists between agriculture projects under the USDA funding. It is the same with the Sea Grant funding. Aquaculture receives a very small piece of the pie. (Daniels)
- Aquaculture is the fastest growing sector of U.S. agriculture. There is an increasing demand for consistent, high-quality wholesome products. Additional aquaculture demand is created because many wild stocks have been diminished by over fishing or environmental changes. The challenge for aquaculture is to continue to deliver high quality product while maintaining profitability and environmental compatibility. (Rheault)
- While U.S. aquaculture continues to grow, it is also challenged by ever increasing competition for resources, a burgeoning population, continued urbanization, competition from foreign products not subject to U.S. regulations, and a wealth of misinformation. (Rheault)
- The commercial aquaculture industry is concerned about the importation of exotic pathogens into the U.S. Another concern is that commercially reared aquatic animals can be subject to significant predation by a variety of animals including birds, seals crabs, flatworms and starfish [discussion provided]. (Rheault)
- Each aquaculture industry sector has unique production requirements, challenges and potential to impact the environment. Each aquaculture operation must be evaluated within a site-specific and watershed specific framework. Regulatory and voluntary efforts must be optimized to achieve cost-effective solutions. The NAA believes that if environmentally sound watershed management programs are to be developed, accurate information must be used. (Rheault)
- Piscivorous birds can cause significant predation on farm raised fish and shellfish. Considerable need exists to develop improved bird management techniques. (Rheault)
- There are two important issues: one is research and the second is regulatory. The difficulty with aquaculture is that we are farmers, not fishermen. Minimize size makes no sense for farmers. (Rheault)

- We have a Sea Grant college program that has been very supportive of aquaculture and is an important player in the viability of the aquaculture industry. This is an example where academia is being used to help an industry. Sea Grant projects also work on developing offshore technologies on the east and gulf coasts. (Rheault)
- The introduction of various penned and bioengineered fish represents a severe threat to the sports fishers and native tribes of our country. (Affleck-Asch)
- The United States is falling further and further behind the rest of the world in its development of a competitive aquaculture industry. At the same time most of our commercial capture fisheries have diminished in both productivity and value. (Bright)
- In an environmental-affects point of view, the raising of fish in net pens is significantly less harmful to the environment. (Bright)
- A specific issue of aquaculture has not been adequately addressed, and that is genetically engineered fish. There are 35 species of genetically altered fish being developed. Sixty engineered fish would wipe out a population of sixty thousand naturally occurring fish. They say they will be sterile. The native population would be wiped out. The sterile fish would deplete the resources and the wild male salmon would try to mate with the sterile female salmon, thereby repressing reproduction. (Ramirez)
- Important facts:
  1) Aquaculture is the business of growing food in water; in order to grow a lot of it there is a need for a lot of water. This resource should be used more fully to supply our future seafood needs.
  2) The U.S. presently imports over $10 billion of seafood per year, much of it produced by aquaculture. This should not be the case.
  3) Some forms of aquaculture, notably salmon farming, have inspired vigorous opposition and claims of lack of sustainability. What critics fail to understand is that marine aquaculture today is a "work in progress." If it is allowed to progress it can supply our seafood needs indefinitely.
  4) Today, almost every maritime nation on earth has an active marine aquaculture program. The concept is embraced by the European Union and countries such as Australia, Chile and Norway. By comparison, the U.S. lags well behind. (Forster)
- The primary reason the U.S. lags behind is due to lack of perceived need compounded by a cumbersome permitting system that discourages investment. (Forster)
- There are serious social, public health and environmental consequences attached to raising salmon and other finfish in open net-cage feedlots. (Lansing)
- The presence of net cage salmon facilities in the U.S. and worldwide has profound negative effects on wild populations of salmon. The main problems have been well documented: spread of disease, spread of parasites, escapee competition for resources, and interbreeding with wild population. (Lansing)
- The introduction of genetically modified organisms (GMO) into the ocean ecosystem creates a serious risk of ecological disaster including a whole range of risks that are well outside our experience to adequately assess. (Spain)
- The only government agency currently charged with regulating transgenetic fish is the FDA. There is not the scientific expertise to be viewing the environmental implications caused by these fish. The food safety agency is not an environmental agency. (Ramirez)
- Escaped farmed salmon are breeding in rivers. These fish are non-native Atlantics and have no place in our waters. There are horrendous disease problems, which the floating feed lots, pose to indigenous species. We are also concerned about the massive sewage, antibiotics, and pesticides that are released through the operation of these farms. (Knutson)

- Domestic aquaculture is failing. The salmon farms are asking for more money for development and research of species for farming cod and halibut. But, the same cycle will take place in that the fleets will be beached because they cannot afford to fish due to the low price. There will be a low price because of the worldwide glut on those species. (Foss)
- If money is continually poured into failing open water near-shore aquaculture, we're never going to be able to support as many families as we could support by restoring and preserving the wild capture fishery of the current wild populations. (Foss)
- Aquaculture is the only available means to significantly supplement fisheries catches at a time when world population and affluence are increasing. (Goldburg)
- Aquaculture effluent: Under the Clean Water Act, the EPA must develop industry-by-industry "effluent guidelines". EPA has never developed effluent guidelines for aquaculture. It is critical that these guidelines address the range of potential environmental impacts from aquaculture discharges by encompassing biological pollutants as well as the nutrients and other chemical pollutants more traditionally considered by EPA. (Goldburg)
- Offshore aquaculture: The ACOE has taken the lead in regulating offshore facilities, issuing permits under the Rivers and Harbors Act of 1899 and the Outer Continental Shelf Lands Act. The ACOE does not, however, have a clear legal mandate under either of these statutes to protect the environment and lacks expertise to weigh the full ecological impacts of offshore aquaculture facilities. (Goldburg)
- Transgenic fish: The FDA has decided to regulate transgenic fish and other animals as animal drugs. However, while FDA is the appropriate agency to regulate the safety of these fish as food, it lacks an environmental mandate and expertise necessary to protect against the potential ecological effects of transgenic fish. Under drug law FDA must keep all information about a pending drug application confidential and thus the public cannot generally participate by providing comments in FDA decision-making about transgenic fish. (Goldburg)
- Aquaculture research—reducing aquaculture's dependence on wild fisheries: With the exception of salmon farming, U.S. aquaculture is dominated by small and mid-sized companies with a limited capacity to support research and development activities. Targeted research could help to reduce a number of aquaculture's environmental impacts. (Goldburg)
- Governance structure for aquaculture in the U.S. is quite complicated because activities within states or state waters, and most of the aquaculture is in the U.S. freshwater, is heavily affected by state law. And the states vary enormously in their requirements and sometimes communities can vary enormously in their governance of aquaculture. Aquaculture is not over regulated at the Federal level. Aquaculture is often an afterthought. (Goldburg)
- It is pretty much inevitable that aquaculture is going to grow. Certainly it has been growing. Hunting for animals as food has, for the most part, disappeared but fishing is not going to disappear, if for no other reason than fish have a much higher intrinsic rate of reproduction than land mammals. It's important to think of the future in terms of fishing and aquaculture, not one or the other. (Goldburg)
- Hatchery salmon from Japan, Russia, and Alaska are depleting the carrying capacity of the sea. They are larger than wild stock and are better able to compete for food. (Quyana)
- Farmed salmon is the most important issue. Farmed salmon is a multifaceted threat to Alaskans and all coastal people. Many people provide the science on this issue. The issues involved in farmed salmon are from the consumer end who eats the fish, the waste that's created by these ocean pens, and the feces that destroy the ocean floor. (Ulery)

PRESENTER RECOMMENDATIONS

1) Designate lead agency for open water aquaculture and enact legislation granting authority for aquaculture leases in EEZ (Univ. of Delaware);
2) Establish large-scale, national research and development effort to close the life cycles and develop mass culture techniques for important marine species;
3) Initiate national mapping of state and federal ocean waters for potential sites; possibly include pre-permitting designated sites, zoning of sites and/or establishment of public/private mariculture parks;
4) Establish large-scale ocean engineering research and development program for next generation technologies (ocean cages). (Colom-Agaran)

- Urge new national program in marine biotechnology "Ocean Technology Partnerships" to foster innovation and seed investment in new marine biotechnologies:
  1) Administered by DOC/NOAA;
  2) Consortium between small businesses, university and/or National government laboratory group;
  3) 4-phase program of research, development and commercialization. (Mendola)
- Aquaculture should not be "fostered" by subsidies and discouraged in open water. Natural habitats that support wild marine fisheries should not be destroyed for aquaculture: force compliance with US Sustainable Fisheries Act. (Safina)
- NMFS needs to improve communication within agency and between science directors and stakeholders.
- Initiate a national policy and initiative on aquaculture: include clear position of federal government, direct agencies on addressing environmental issues in application of aquaculture, and set general guidelines for implementing aquaculture. (Haddad)
- Aquaculture industry for sustainability with technology-forcing regulations, standards, and incentives. (Hopkins)
- Must begin to look at alternative sources of food from the sea; most promising alternative is aquaculture/mariculture. (Monroe, D)
- Consider recommendations of greater funding for research and development not only of more diverse national aquaculture industry but in developing foreign aquaculture ventures to assist emerging nations alleviate hunger and poverty. (Monroe, D)
- How to "harmonize" aquaculture policy with specific suggestions for elements of a national aquaculture policy:
  1) Mechanism to harmonize is the Joint Subcommittee on Aquaculture (JSA) with Department of Agriculture as the lead agency;
  2) Departments of Agriculture and Commerce need to expand and coordinate their investments in aquaculture research and technology and link to industry outreach education;
  3) Imperative that federal government recognizes potential for aquaculture development in individual states beyond regional approach developed with National Aquaculture Plan in 1980. Should allow more say by states. (Haddad)
- Halt abusive operations on fish farms. [discussion provided] (Hayes)
- Continue to make sure that planning for aquaculture ventures are carefully organized with better understanding of markets and management needs. (Chew)
- Provide unbiased and factual information about aquaculture to the public-at-large. Aquaculture should not be viewed as a competitor with capture fisheries for consumer dollars. The two should be viewed as necessary tools for supplying aquatic protein to our increasing human population. (Chew)

- The Environmental Code of Practices should be developed and added to the EMS, and include input from all regulatory agencies, including environmental and tribal groups. This should similarly be done in other marine aquaculture industries. (Chew)
- Government should be more proactive in partitioning the resources and defining a place for aquaculture. (Chew)
- Given proper research and R & D funding, and a policy to support enhancement activities, aquaculture can help to restore the numerous species of fish and shellfish. [discussion provided] (Chew)
- Efforts should be made to bring together all Federal, State, county and local governments in different strategic regions. A process is needed to look at environmental short term and long-term impacts. (Chew)
- Government Support: Legislation should continue to support the aquaculture industry from all regions of the U.S. (Chew)
- Continue to develop planning and legislation that recognizes the importance of aquaculture. Should provide an overall plan for mapping, management, development and conservation within the U.S. EEZ. (Daniels)
- Integration of aquaculture into coastal management can contribute to improvements in selection, protection and allocation of sites and other resources for existing and future aquaculture development. Suggest a framework of Integrated Coastal Management (ICM). (Daniels)
- To ensure that aquaculture is economically and environmentally sustainable under a variety of conditions and diversity of species grown, research is vitally important. (Daniels)
- Any ocean policy should enhance global and regional cooperation and advocacy on fisheries, aquaculture, and environmental issues through better use of existing networks among professional organizations. (Daniels)
- NAA recommends:
  1) The U.S. Fish and Wildlife Service manage migratory bird numbers on basis of wild food supply.
  2) The USDA Wildlife Services program should be encouraged to actively develop additional control measures.
  3) Cumbersome regulatory processes that impede bird control efforts should be removed.
  4) Depredation permits should be readily available on a timely basis and should be administered equally by all USFWS regions. (Rheault)
- Just as humans have impacted every facet of our environment, we have to become managers for every part of our environment. That is why we need to manage the bird populations that feed off the fish. In Rhode Island, the cormorant populations have increased something like twelve fold in the last twenty years and they are eating 20 percent of the flounder population every year. We need to think about how to protect our aquaculture industry, as well as our wild fish populations, in a responsible fashion. (Rheault)
- The NAA would like to see the Hazard Analysis Critical Control Point (HACCP) standards being applied internationally to improve competition in the global marketplace. (Rheault)
- As a member of the National Aquaculture Association, we support USDA as the lead agency to lead marine aquaculture. The USDA has supported the NAA extensively with research and as an advocate in the marine area. However, taking off my NAA hat, my work with a specific project has made me reach a different conclusion that the lead agency should be a new office in NOAA, Office of Offshore Aquaculture. (Rheault)
- Keep the advocacy role in one agency, USDA, and put the regulatory role in the marine environment under NOAA. (Rheault)
- Need three changes:

1) It is time to shift our view from hunter/gatherers to being marine culturists, as we have done with all of our terrestrial food sources. In order to achieve this goal, we need to increase the incentives for businesses to pursue these kinds of developments.
2) Marine aquaculture has to be fostered in much the same way as we fostered the growth of terrestrial agricultural in order for it to gain a foothold and then expand.
3) Aquatic farming is relatively young, but has seen, and will continue to see, further advances in technology that will increase its efficiency, and reduce its impact on the environment. The only way the industry will continue to discover new and improved ways of farming fish is if it is allowed to develop and then drive research and production into even newer and improved technologies. (Bright)

- The shellfish industry urges the Commission to support environmentally sustainable marine aquaculture development by forming a separate marine aquaculture advisory committee to advise NMFS. (Downey)
- More of our resources should be put into the research and development needed to achieve the 5-fold increase. The U.S. lags embarrassingly far behind other nations in support of aquaculture development, which helps to explain the huge trade deficit we are currently facing. (Downey)
- Regulations must prohibit the use of genetically engineered fish in marine net facilities. (Ramirez)
- The most important things that the Commission could do to help marine aquaculture in the U.S. would be to recognize its importance for the security of our future seafood supply and to recommend a simplified permitting system. (Forster)
- Marine aquaculture is a legitimate and necessary use of our ocean waters. Please say so in your recommendations to the President and to Congress. (Forster)
- Stop Federal grants and subsidies to the industry, including support provided by the National Marine Fishery Service and the U.S. Department of Agriculture. (Lansing)
- Stop expansion of the industry on current sites and do not allow permitting of new sites. (Lansing)
- Mandate plain labeling of salmon and salmon products to consumers, describing origin and use of additives such as colorants, antibiotics, and pesticides. (Lansing)
- Mandate country of origin labeling on imported salmon and salmon products. (Lansing)
- Restrict imports of feedlot-raised salmon to the greatest extent possible under our trade and environmental agreement obligations. (Lansing)
- Although certain forms of aquaculture have promise, we need to proceed with caution, not recklessly, in developing that industry so that it does not jeopardize our wild fisheries. We would recommend that all aquaculture operations be closed systems that physically cannot release fish into the marine environment. (Spain)
- Farm salmon must not have access to marine waters. (Ayers)
- Other agencies should be directly involved in the process, not only the FDA. The NMFS, the DOI or USDA should be involved. (Ramirez)
- We recommend, as we have done repeatedly, that net pen aquaculture be removed from public, coastal waters. The farms are directly subsidized by the destruction of wild ecosystems upon which we depend. (Knutson)
- EPA should develop effluent guidelines for aquaculture. (Goldburg)
- Through a combination of regulatory and legislative changes, offshore aquaculture facilities should be required to receive both discharge permits from the EPA and an approval from the NMFS based on a standard of “no significant adverse effect on marine resources.” (Goldburg)

- Congress should amend Federal law so that the approval of transgenic fish for commercial sale requires evidence of ecological as well as food safety, and the approval process is open to public participation. (Goldburg)
- Appropriations to NOAA and other Federal agencies for aquaculture research should target key environmental goals: to reduce aquaculture's dependence on fisheries inputs by reducing the fishmeal and the fish oil content of feed and by emphasizing the farming of fish that feed at low trophic levels. (Goldburg)
- It is important to balance the concept of the environment and the commercial when thinking of investing as a venture capitalist in a small aquaculture farm that happens to do shellfish, which are interestingly natural filters in the ocean. (McGowan)
- Recommend increased support for mariculture, particularly in the development of technologies that can augment traditional practices of fisheries harvesting. (Estabrook)
- To protect the wild salmon stocks and keep our communities economically viable and off welfare, hatcheries that release salmon into the Bering Sea should be shut down. (Quyana)
- Aquaculture needs help to do the right thing; science needs additional funding; and, we need to improve the ability to educate and make citizens aware of these issues. (Panetta)
- There is need for a major push in the area of aquaculture and mariculture so that ocean fisheries can be farmed much like we farm grains and livestock on land. (White)
- Aquaculture—three recommendations presented. (Eichenberg)

TOPIC: *LIVING MARINE RESOURCES*

KEY ISSUE: *Wild Resources*

ISSUES RAISED

- Get serious about saving wild marine fauna. [discussion provided] (Hayes)
- Protecting endangered wild salmon: The escape of Atlantic salmon from Maine salmon farms has been identified by NMFS and the USFWS as one of the major impediments to restoration of wild Atlantic salmon. (Goldburg)
- Oceans cannot produce sufficient protein to feed projected population in 50 years. (Wiseman)
- Salmon are not native to Lakes and therefore hard to say if their introduction has benefit. (Hartwig)

PRESENTER RECOMMENDATIONS

- Any public policy issue should be such that it holds as a higher value native fish (those that are "wild" or not genetically enhanced) over those that are kept in commercial pens. (Affleck-Asch)
- NMFS and USFWS have proposed a number of reasonable measures to minimize the impact of salmon farms on endangered wild salmon and Federal officials should support these decisions and activities. (Goldburg)

TOPIC: *LIVING MARINE RESOURCES*

KEY ISSUE: *Biodiversity*

ISSUES RAISED

- Protecting and restoring biological diversity has become the driving force in conservation worldwide but biodiversity is conspicuously absent from 1996 version of Magnuson-Stevens Act. (Norse)
- We need to protect more areas of the ocean to ensure the survival of all marine species. (Rothrock)
- Biodiversity, protected areas, and tourism—Loss of marine species diversity and abundance degrades both marine ecosystems and the industries that depend on them. (Hamilton)
- Biodiversity is impossible to legislate. In simple terms, biodiversity is the variety of native organisms that exist in a specific area at any given time; a single frame from a never-ending motion picture. (Radonski)

PRESENTER RECOMMENDATIONS

- Biodiversity recommendations: Congress should enact legislation mandating and appropriating funds to support the development of a network of fully-protected marine areas; the Commission should: 1) recommend to NOAA that they actively pursue designating a portion of the Stellwagen Bank National Marine Sanctuary as a fully protected area; and 2) should charge each agency with marine resource management authority. (Shelley)
- Would like to see more discussion on other areas of living marine resources, particularly marine wildlife—that was not discussed at all today; also coral reefs; national marine sanctuaries. (Weissman)

TOPIC: *LIVING MARINE RESOURCES*

KEY ISSUE: *Status of Managed Species*

ISSUES RAISED

- Coral reefs subject to degradation from far away. Large areas in Caribbean and Pacific have shifted from coral-dominated to macroalgal-dominated communities, often from overfishing and removal of herbivorous fish. (Birkeland)
- Three important points:
  1) Sea turtles are ancient and valuable participants in the global marine ecosystem;
  2) Sea turtles are members of the "global commons," and must be managed as such; and,
  3) By neglecting point 2, we will not only fail to restore sea turtle populations, but the consequences will be severe and enduring for domestic industry and policy. (Eckert)
- Legal status and biology of sea turtles provided. (Eckert)
- Sea turtles are a shared international resource. [detailed discussion provided] Example: declining nesting turtles in Mexico traced to increased use of large-mesh gillnets by Chile and Peru. (Eckert)
- Protecting sea turtles requires a multilateral approach:
  1) Federal mandate [detailed discussion provided]
  2) Why unilateral action can fail. [detailed discussion provided]
  3) Why multilateral mechanisms are urgently required. [detailed discussion provided] (Eckert)
- Facing a world where fishing capacity of fleets has outpaced reproductive capacity of fish stocks.

  Current Situation:

  1) Many of world's primary fishery resources are under stress [statistics provided].
  2) Causes: improved fishing technology, government subsidies increased fishing capacity, degradation of habitats, "flags of convenience," gear types.

  International Law Framework:

  1) 1982 LOS Convention [description provided];
  2) Other Instruments: [extensive list provided].

  Trends and Prospects:

  1) Recognized need for greater conservation ethic in regulating ocean fisheries;
  2) Creating new management regimes to oversee important international fisheries (tuna fisheries in Central/Western Pacific);
  3) Some of new tools for enforcing fishing rules are showing promise. Better coordination, monitoring, control and surveillance, etc;
  4) International community has begun to think "outside the box;" using "port state controls" deters illegal harvests; new restrictions on the importation of fishery products harvested in violation of rules, etc.;

  APEC has growing track record of accomplishments. (West, MB)
- Concerned about fate of monk seal by reopening lobster fishery in NWHI or failing to assess and control cumulative effects of research and other activities that increase human visitation to NWHI. (Raney)
- Coral reefs are important to people of the entire world. The many problems with coral reefs are symptoms of two larger issues: overpopulation and a consumer driven economy. (Grigg)
- Socio-historic profile and economic overview of wetfish industry. (Amoroso)

- America's fisheries are in crisis. [facts are provided] (Norse)
- Discussion regarding harvest rates and stocks is provided. (Hogarth)
- Fish are important. [detail list of fishery facts provided] (Simpson)
- Striped bass landings exceeded 12 million pounds in early 1970s, crashed to 3 million pounds per year by early 1980s from overharvesting and degradation of marine environment. Passage of 1984 Atlantic Striped Bass Conservation Act and populations rebounded; by 1996 highest landings levels since 1975. (Nussman)
- Fisheries: 56 varieties are extinct or overfished. (Hollings)
- West coast fisheries and seafood industry:
  1) Dungeness crab, Pacific groundfish, and pink shrimp fisheries need to be discussed together; most boats fish 2 or all 3.
  2) If you take away any one of these fisheries, there are significant number of boats and plants that may not survive.
  3) Groundfish is glue that holds west coast fisheries together. (Moore)
- Many once-great fish stocks are now gone and once-productive shoreline nurseries are destroyed. Whole food webs are loaded with deadly toxins. (Garrett)
- There are only 78 killer whales left in the Puget Sound ecosystem. The three factors which contribute to the decline are the presence of toxins in our waters such as PCBs, the decrease in available pres, and the increase in the number of whale watching boats. Of these factors, the first two are issues that need to be addressed over the long term. Whale watching is something that can be addressed now. (Himes)
- Fisheries management has in all to many instances failed to prevent overfishing, failed to protect the marine biological resources, and failed to provide a stable fishing economy for our future. In addition, there has been devastating loss of habitat and the various environmental threats that are depleting our living marine resources and pushing the Northwest region's primary fishing resource, Pacific salmon, ever closer to the brink of extinction. (Spain)
- The once legendary Pacific salmon and steelhead runs have been destroyed by the destruction of inland and estuarine salmon spawning and rearing habitat by the extensive damming of rivers and the almost complete diversion of major river systems. The only exception to this tragic story of declines and eventual ESA listings is the fall Chinook salmon run currently inhabiting the Hanford Reach, a 70-mile stretch of river that is the only part of the Columbia River that is undammed and still running wild. (Spain)
- Destructive fishing practices: Coral and sponge are the oldest living animals that we know of today. They are a primary animal that provides habitat for other species and in fact are being destroyed by the tons every year. (Ayers)
- Over the long term, near shore, ocean, and estuary fish habitat loss is probably the greatest threat to marine fishery productivity. (Spain)
- Fisheries management will be moot if habitat loss and destruction destroys the productivity of living marine resources. Already today, habitat destruction all along the coast lines, particularly wet lands loss and estuary degradation cost our industry some 27 billion dollars, at least 450 thousand family wage jobs every year. That is a net productive drain on the economy that is reversible. An investment in the protection of those habitats is essentially an investment in the future of our economy. (Spain)
- It is widely known that New England groundfish stocks were declining precipitously prior to 1994. Today NMFS assessments of those same stocks show biomass levels for 12 groundfish stocks, collectively, have more than doubled since then. (Hill)

- Our oceans are in a crisis and no case better illustrates this crisis than the northern right whale. The whale has supposedly had Federal protection for 30 years. And until this spring, nothing had been done but research. This is for a population of 300 whales! If the northern right whale is an example of how our endangered marine species are being treated, then the entire protection infrastructure should be seriously reconsidered. There is hope that this crisis is coming to the attention of the powers that be and that in this conference earnest talk has begun about the ocean's survival. (Armonson)
- Twenty years ago the Steller Sea lion population in western Alaska started declining so the panic button was pushed. The Council under pressure from NMFS closed all commercial fisheries within ten miles of the great rookery on Borgoslof Island. The sea lion in that area continued their decline so it was closed twenty miles off shore. Last year the survey showed a continued decline in sea lion but to everyone's amazement there were ten thousand fur seal on the island. Was it a shortage of fish? Most likely not. (Tillion)
- The pollock biomass is the greatest story in that the Pollock are harvested in such a way that increases their volume every decade. That can be done responsibly in every other area if it is based on sound science and upon good management judgment. (Stevens)
- In New England you've heard about the disagreement over the need for hard caps. Here, when you hit the TAC, fishing stops for the year. In Russia, their scientists believe that the annual harvest could be twice as high as it is. They believe that you can fish Pollock at an exploitation rate around 30% or more and we've been fishing an exploitation rate of the mature fish around 15%. Theirs has been in decline using the higher exploitation rate and ours has been at a steady state. (McCabe)
- All the baby salmon live within four feet of the bank—millions of them. We used to walk along the bank and as a result we destroyed the bank and knocked down the brush, like they still do in the south 48. We've learned you can't do that. We've restored the habitat back to where the fish have a place to live and be protected. The same thing that we did in the Kenai by learning and correcting what we've done is taking place in the ocean. (Penney)
- The commercial fishing industry is the largest private employment sector in Alaska with an ex-vessel value of over $1 billion and an average wholesale value of more than $2.5 billion dollars in 2001. Alaska fisheries harvest would rank 12th in the world if Alaska were an independent country. (Stinson)
- Of the 63 species of groundfish managed under Federal Fisheries Management Plans (FMPs) in Alaska, none are listed as over fished and none of their population are threatened (NMFS 1999). Only three species of crab have been listed as overfished. Our state managed salmon stocks are regarded as the most viable and healthy natural populations in the world. (Stinson)
- The Bering Sea crab fisheries are working through a stock rebuilding and rationalization process. [discussion provided] (Winther)
- We do not have final results for the reasons for the serious decline of the steller sea lions. One of the early theories was that there is a lack of food perhaps due to the way the fisheries were configured in the 1970s, 1980s, and the early 1090s, which may have contributed to the decline. Most of the research that has been conducted on conditions of animals in the last year or two has not discovered any evidence that there are nutritional problems. Then we looked at predation problems and it's potentially wider than killer whales, There's been a large increase in large shark populations in the Gulf of Alaska, Bering Sea and so we're looking at that too, but the answers are not quite there yet. (Balsiger)
- For BSFA members, it is imperative to understand what factors are contributing to the unexplained drop in western Alaskan chum salmon populations in recent years. (Gillis)

- The notion that killer whales are responsible for the decline of almost every marine mammal in Alaskan waters is not true. We are just beginning research in the Aleutian Islands to determine how many killer whales there are, and what percentage are marine mammal eaters. (Sterne)
- There has been a noted decline in the number of seals in the Hubbard Glacier area where the cruise ships frequent. A recent study showed undisputed evidence that the decline of the seal population there is of 32 percent to 48 percent since 1992. Since there is no hunting in Glacier Bay national monument, the decline cannot be attributed to hunting. There is a decline in Yakutat as well. (Sensmeier)
- The biggest concern is that the cruise ships come at May 14th or 15th, precisely the time that the harbor seal gives birth and nurse their young on the ice pans that break off of the Hubbard Glacier. The tribal government passed an ordinance two years ago setting a demarcation line that they wished the cruise ships to respect. They refused to heed the demarcation line. As a result there's been a market decline in the number of seals in that area. (Sensmeier)
- Fisheries: The estimate is that 25 to 30 percent of all commercial fisheries are being impacted right now in some way by either overfishing or destruction of those fisheries. Bycatch, as you know, is a huge problem. (Panetta)

PRESENTER RECOMMENDATIONS

- Prohibit expenditures, potentially in the hundreds of thousands of dollars, for any efforts to re-open the lobster fishery in the NWHI, and require expenditures needed to fully support the efforts of the Monk Seal Recovery Team and NMFS management programs intended to assist the recovery of the endangered seal. Reopening the lobster fishery is prohibited under the NWHI Executive Order would further reduce prey for the endangered seal at a time when juveniles are suffering from insufficient prey, and would represent a major subsidization of this fishery. (Raney)
- Drastic measures must be taken immediately in order to secure the survival of the few killer whales we have left. Need new whale watching guidelines. (Himes)
- We need to make sure we are really using biology and not having other agendas, such as possibly making the Aleutian Islands a park, making our decisions. (Tillion)
- We should resist the temptation to look for single factor explanations for this, or any other problem, in the ocean. [Further description provided.] (Sterne)
- Give priority attention to the issue of aquatic nuisance species. I believe this is the most serious problem facing the Great Lakes today. We need an analysis of where our shortcomings are and how we as a nation can solve this problem. (Vonnahme)

TOPIC: *LIVING MARINE RESOURCES*

KEY ISSUE: *Requirements of Unmanaged Resources*

ISSUES RAISED

- Need to limit introduction and control spread of invasive species. (Colom-Agaran) (Lane) (Hopkins)
- EFH is part of whole process and it needs holistic approach. (Shipman)
- Mobile Bay now produces very few oysters for numerous reasons: downstream movement of fecal coliform; oxygen depletion; lack of sedimentation; dredging of Intercoastal Waterway; deepening/widening of ship channel; dams, etc.
- Louisiana still productive with large estuaries. Big problem facing oyster farming industry is coastal erosion and saltwater intrusion.
- Major freshwater diversion projects planned that could affect oyster industry.
- Texas has primary problem of too much saltwater; salinities high and oyster drill and dermo disease invade; red tide and ballast water also problems. (Nelson)
- Nonindigenous species issue before IMO now; concern from technical point that current procedures place stress on ship during ballast transfer; IMO Marine Environmental Protection Committee considering it; Coast Guard lead agency to IMO. (Wade)
- Concerned about wetlands loss, and contamination. Think about economic issues related to wetland loss and contaminated waters. (Coman)
- Need marine habitat and species protection for resources known to be sensitive or in decline; i.e., coral reefs, seagrasses, wetlands, estuaries. (Bodman)
- Millions of acres of wetlands have been lost throughout the Gulf of Mexico region. "Compensatory" mitigation, in theory, offsets damages that occur through development activities. Two studies by NAS and GAO found compensatory mitigation falling far short of meeting goal of no net loss. NAS report found:
  1) Goal of no net loss of wetlands is not being met for wetland functions by the mitigation program, despite progress made in last 20 years;
  2) A watershed approach would improve permit decision making;
  3) Performance expectations in Section 404 permits have often been unclear, and compliance has often not been assured or attained.
- Concerned about Corps guidance in response to reports. (Goldberg)
- GAO report found: compensatory mitigation was not effective at mitigating adverse impacts to wetlands. Corps does not properly track mitigation taking place under in-lieu-fee arrangements.
- Invasive Species:
  1) Unclear roles of federal agencies in states cause confusion [ANSTF/Sea Grant example];
  2) National Management Plan does not recognize that scope, diversity and intensity of problem varies state to state;
  3) Ballast water and sediment becoming more important to coastal states; plants, animals, pathogenic bacteria and toxic dinoflagellates. (Haddad)
- Can't separate EFH from fisheries management. (Hogarth)
- Habitat is essential to fishery management and managers need some say in what's going on with EFH. (Mahood)
- Habitat is the key: should be highest priority as it affects fisheries resources. (Simpson)

- Habitat destruction caused by harmful fishing gear further exacerbates fishery and ocean declines. (Dobrzynski)
- Protect habitat from trawlers; less life wasted in terms of bycatch. (Damme)
- Invasive species: open ocean ballast water exchange difficult; need on-shore treatment. Consistency in regulation between ports would provide certainty for shipping companies. (Shultz)
- Shellfish cannot be grown in water that does not meet extremely stringent water quality standards. There is a very real, very tangible relationship between the health of our marine environment and the health of our business. And so we straddle the line between environmentalist and business interest every day. (Downey)
- Populations along the shorelines have increased exponentially and we have lost shellfish growing areas to non-point pollution, from failing septic systems, increased impervious surfaces and road runoff, and agricultural wastes. (Downey)
- As shellfish farmers depend on water quality and they are physically there working in the environment every day—they have become the first line of defense for coastal water quality. (Downey)
- Current methods of monitoring, controlling and preventing marine invasive species, are not sufficient. (Hamilton)
- The fishing industry is a wetlands dependent industry. Wetlands protection should not be seen as a cost so much as it is an investment in the future of national commercial and recreational fishing industry that provides $152 billion each year to the nation's economy and 1.5 million family wage jobs nationwide. (Spain)
- Given the potential for economic harm posed by marine invasive species, the current method of monitoring and controlling invasive organisms is lacking. (Hamilton)
- A great interest is the effects of aquatic nuisance species and regulatory regimes that control that. Regarding the ballast water issue, at what point do these regulations become submarginal and not beneficial? (Brautigan)
- Numerous Federal agencies have ecological restoration programs and numerous states have restoration priorities. Regional ecological restoration priorities of Federal interest are seldom defined. (Koning)
- The infrastructure that exists is the Aquatic Nuisance Species Task Force, which was established by Congress under the Aquatic Species Nuisance, Prevention and Control Act. Many Federal agencies here are members of that task force. If you identify them early enough and you take concerted action, you can stop or hinder the problem. But right now, we're still looking for appropriate tools to deal with the issue. The current strategy is preventing the organisms from getting into the U.S., then keeping them under semblance of control and the final thing is to try to have eradication techniques to eliminate the population. So far we've been not very successful in all three. [discussion provided] (Geiger)
- San Francisco Bay probably has, as you correctly pointed out, more non-native species than native species. And, the importance of San Francisco as a port of entry is extremely critical. The verdict is still out in terms of the ultimate effect on management of native fish and wildlife species, but from the broader perspective, restoration of fisheries populations has been successful. (Geiger)
- A strategic plan or action plan has not been developed to put more resources into the emerging issues of fish and wildlife health and diseases. Discussions have been initiated with the USGS and with some of our NMFS colleagues. Much more is needed. (Geiger)
- In 1997, CLF identified habitat protection as the missing link in the ecosystem safety net needed to insure the long-term sustainability and diversity of the Gulf of Maine and New England waters. (Shelley)

- Key impacts in the Gulf of Maine: Incidental bycatch in commercial fisheries; collisions with commercial and recreational vessels; competition with commercial fisheries for common food resources; increased noise in the oceans; uses of sound by the U.S. Navy; coastal pollutants; ecotourism and directed interactions; killing of nuisance animals[discussion provided] (Young)
- The U.S. must address the threat posed by aquatic nuisance species. The introduction of aquatic nuisance species into new waterway environments via vessel ballast water discharges has been identified as one of the four greatest threats to the world's oceans and the coastal waters they touch. (Fredricks)
- Shipping moves over 80% of the world's commodities via a world fleet of more than 45,000 vessels and, in so doing, transfers approximately 10 to 12 billion tons of ballast water across the globe each year. Ballast water is essential to the safe and efficient operation of modern shipping, providing balance and stability to un-laden ships. However, it also poses a serious ecological, economic and health threat. (Fredricks)
- It is estimated that at any one time, from 3000 to over 4500 different marine species are being carried in ships' ballast water around the world. This includes bacteria and other microbes, small invertebrates and the eggs, cysts and larvae of various species. The problem is compounded by the fact that, virtually all, marine species have life cycles that include a planktonic stage or stages. As a result, whole ecosystems are being changed. In the U.S., the European Zebra Mussel Dreissena polymorpha has infested over 40% of internal waterways and may have required over US$5 billion in expenditure on control measures since 1989. (Fredricks)
- The most important thing that the North Pacific Council does is we actually do account for bycatch. We pay attention to it and we make sure that it's kept within levels that are scientifically sound and we know what it is. That does not happen in the rest of the country. (Leitzell)
- The habitat issues are very closely intertwined with the biology and there is a role for both NMFS and the Council in dealing with them. And NMFS should have continuity in their funding—for their five-year plan at least—much as in the Department of Defense. (Leitzell)
- It is an interesting dynamic that has occurred in the bycatch context. Because not one more fish is alive today than—in a yearly basis than was alive before the 1996 amendments under this new system. So, we cannot say that bycatch reduction in the North Pacific has helped. (Leitzell)
- One-quarter of the global catch in 1994 – more than 27 million metric tons of fish – is thrown overboard each year dead or dying as unwanted bycatch. Fisheries with gear having the greatest impacts on endangered wildlife include shrimp trawl, pelagic longline, and gillnet fisheries. (Ayers)
- It is often assumed that Alaska's fisheries are fully developed. This is not true. The Alaska Fisheries Development Foundation (AFDF) recently made a list of over forty species that have harvest potential, but that are currently not harvested. AFDF is currently working to develop three of these stocks. (Jones)
- Prevention and control of invasive species continues to be a high priority of the Service. Invaders that became established have been implicated in causing population declines and habitat degradation. Up to 46 percent of the plants and animals Federally listed as Endangered have been negatively affected by invasive species. One of the most severe threats currently facing the Great Lakes is the invasion by injurious and nuisance species. (Hartwig)
- Habitat destruction is one of the most serious causes of extinction and population declines of aquatic species. Barriers impede and redirect river flows, which also prevents fish from accessing important habitat needed to spawn, survive through the early critical months of life, feed, avoid predators, grow, and mature. (Hartwig)
- Urban habitat allows large cross sections of society to see the value of fish and wildlife that otherwise might not get to interact with other residents of our biosphere. This can then translate into support for habitat legislation and funding initiatives. (Davis)

- It's not enough to protect the habitat that's left. If nature is our life support system, our growing population needs more habitat. Cities may offer some of the best remaining chances to bring habitat back. (Davis)
- The Lake Michigan Federation is launching an Urban Aquatic Habitat Initiative to restore coastal habitat following a basic three-step process: 1) developing biodiversity and habitat recovery goals, 2) implementing those goals on a site-specific basis, and 3) working collaboratively with volunteers and other stakeholders from plan development to actual restoration work. (Davis)
- Some of our greatest coastal resource challenges stem from the modification of habitat and hydrological regimes. (Wayland)
- Invasive species is defined in Executive Order 13112 that established the Council as an alien (or nonnative) species whose introduction does or is likely to cause economic, or environmental harm or harm to human health. EO 13112 directs the Council develop a comprehensive management plan to deal with invasive species. The Oceans Act also calls for enhancement of marine-related commerce; similar to the invasive species EO 13112 and management plan which call for steps to protect the economy from the impacts of invasive species. (Williams)
- There is a critical need to focus on prevention of both accidentally and intentionally introduced invasive species. Most aquatic invasive species are introduced accidentally through variety of means called pathways. The ballast water of ships is considered the most significant pathway resulting in the introduction of the zebra mussel, Asian clam and many other species. (Williams)
- Although ballast water has received the most attention for obvious reasons, it is critical to look at other pathways including ship biofouling, accidental releases from aquaculture, release of live bait, seafood, and aquatic pets, and recreation – among others. (Williams)
- In many cases we do not know enough to effectively deal with invasive species issues and their impacts our coastal and marine ecosystems. (Williams)
- Biological invasions are one of the greatest drivers of ocean and coastal change in the U.S. in 2002. Invasions threaten life (through disease transport) and property, severely impact coastal stewardship of fishery and other resources, and impact marine-related commerce and transportation. (Carlton)
- Invasions may be seen, in part, as the "thread that binds" the other major causes (habitat alteration, chemical pollution and eutrophication, fisheries impacts, and global climate change) of manmade hazards and alterations to the marine environment. (Carlton)
- Vectors for the accidental introduction of exotic species today include shipping (ballast water and ballast sediments and external (hull) and internal (seachest) fouling), the movement of drilling platforms, the aquaculture (mariculture), live seafood, and aquarium industries, and the live bait industry. (Carlton)
- Lake Carriers' Association focus has always been on preventing additional introductions of non-indigenous species. In 1996, we teamed with the Northeast-Midwest Institute to invent systems that could be installed on ocean-going vessels to treat ballast water. There was no technology in existence to treat ballast water, not even that much research to draw on. (Harkins)
- From the mechanical performance of filters and hydrocyclone, it is clearly evident that filters show good results, but that the hydrocyclone is the wrong approach for reducing particulate and biota in ballast water. (Harkins)
- Successful treatment of ballast water is only one part of the solution for the Great Lakes. Another problem we must solve is that many ships enter the Great Lakes with no ballast onboard – NOBOB is the term we use. However, even though the ballast tanks are considered empty, there is always some residual ballast water and sediment in those tanks, and they are sufficient to sustain resting cysts. (Harkins)
- The invasive species problem is one of the most important issues we face. (Reutter)

- Invasive species are frequently transported by human activities such as the dumping of ballast water from transoceanic ships, transporting species via recreational boats, and emptying unwanted bait. (Reutter)
- Implementation of the National Invasive Species Act falls far short of national needs to effectively protect the region's coastal resources from expensive and environmentally damaging invasions by invasive species, e.g. invasive species are still appearing in the Great Lakes at the rate of about one per year. (Reutter)
- Current and accurate information is needed in each of these areas for every invasive species; biology and life history, effects on ecosystems, socio-economic analysis (costs and benefits), control and mitigation, preventing new introductions, and reducing the spread. (Reutter)
- The Lake Erie experience and effects on the ecosystem are explained. (Reutter)
- Controlling invasive species is a critical example, and one for which the federal government's leadership and cooperation is essential. Non-native nuisance species can permanently and tragically alter the ecosystem, with devastating effects on commerce and recreation, and on the regional economy. (Jimenez)
- Restoration and protection plan for Great Lakes will cost about $3-4 billion. (Vonnahme)
- Only between $1 and $2 million a year for over a decade has been available for the entire national invasive species effort—that is spread too thin. (Carlton)
- Invasive species risk assessment modeling is progressing but is challenged by the unknown and vectors carrying many species at the same time. There is a good deal of discussion about how to weight or rank vectors, but it is very difficult. Many of the vectors are going to require different kinds of attacks on them to manage them properly. Some will be easier than others to regulate and manage. (Carlton)
- Human mediated dispersal is compared to natural dispersal as the first point to consider in determining invasive or native species. (Carlton)
- A nationally coordinated educational effort about invasive species within the National Aquarium Councils would be most welcome in terms of having something with a uniform approach. (Carlton)
- I use two generations of existence to consider a species native. (Reutter)
- Preserving currently healthy habitat now must be a starting point for any conservation restoration effort because annual loss of coastal and estuarine habitat far outstrips the rate at which degraded habitat can be restored. (Wolf-Armstrong)
- Marine recreational fisheries management is discussed. (Loftus)
- Discussion of background and current issues for invasive species. (Rufe)
- Findings, goals and objectives for coastal and marine restoration and conservation. (CSO)

PRESENTER RECOMMENDATIONS

- Institutionalize current recommended activities relating to ballast water and hull fouling from National Aquatic Nuisance Task Force. (Colom-Agaran)
- Look at how Peconic Bay model for spawn settling out from sanctuary might apply to Mobile/Bon Secour Bays. Might answer questions whether protected areas could have dual purpose. (Nelson)
- Degradation of habitat:
  1) Greater coordination among agencies;
  2) Create ocean resources inventory and determine carrying capacity for each resource and site;
  3) Expand day-use mooring system statewide and limit number of ocean tourism businesses allowed to operate in a given area at given time. (Coon)

- Invasive Species:
  1) Coordinate more than 20 federal agencies dealing with nonindigenous species; eliminate redundancy in federal agency initiatives (e.g., ISC and ANSTF both request state management plans);
  2) USFWS should continue looking at listing species under Lacey Act instead of new legislation;
  3) Support ISC intent to validate effectiveness of control methods through coordinated research;
  4) Encourage developing research at state and federal level with states and other stakeholders as full partners;
  5) Implement enforceable national requirements for ships entering US ports; form state/federal task forces to coordinate prevention message, respond to immediate threats, enforcement, etc. (Haddad)
- Recommend that Congress provide funds necessary to obtain information on gear impacts and manage oceans in sustainable way. (Dobrzynski) (Danson)
- Develop a national fresh water inflow policy: main goal ensuring an ample supply of freshwater inflow, applied at appropriate times, to maintain appropriate salinity regimes and concentrations of nutrients and sediments to sustain function and productivity of estuaries. (Simpson)
- Need legislation setting new habitat recovery goals, esp. restrict bottom dragging. (Safina)
- Council (or state) does not have staff to adequately implement EFH. (Morris)
- Invasive Species:
  1) Commission should recommend to Congress that regional approaches to invasive species response be allowed. [details provided]
  2) Coast Guard should provide sufficient resources to work with states. The Federal government should provide specific focus in discussions with other nations to develop international plans for the control of invasive non-native species. [details provided] (Shultz)
- It is not functional to have all the water from the 200-mile line as our definition of our essential fish habitat. Clearer definitions are needed. (Brown)
- The polluter should pay – the entire marine transportation industry should be engaged and made at least partially responsible for costs associated with ANS reduction measures. (Hamilton)
- A compulsory ballast management program needs to be implemented on a national level. Improvements to existing and new vessels entering the maritime transportation industry need to be made. More efficient ships capable of operating with less ballast water and doing so safely in the open ocean would reduce the risk. (Hamilton)
- We need to look at a national regime. (Brautigan)
- Provide a metric to quantify goals and accomplishments of ecological restoration for resources of national interest (e.g., wetlands, anadromous fisheries migratory corridors, submerged aquatic vegetation, etc.) that is shared and coordinated across all Federal programs. (Koning)
- Higher-level technology needs to be employed to assure shipboard safety, to reduce sediment loading in ballast water, and to provide for a higher level of effectiveness in the mitigation of biological invasions. (Fredricks)
- Congress and the Administration should provide the U.S. Coast Guard with the mandate and support that it will need to address and deal with the threat of aquatic nuisance species. More specifically, the time frame proposed by the Coast Guard for the implementation of mandatory ballast water management must be accelerated; the summer of 2004 is too late. (Fredricks)
- Look for innovative ways to address marine invasive species, including a Federal role in ballast water management. (Buchsbaum)

- Alaska must find ways to protect the habitats on which production of living marine resources depend. (Penney)
- Establish a national policy that requires a government-approved bycatch monitoring and minimization plan as a prerequisite to fishing. (Ayers)
- Establish a national goal for these plans to reduce bycatch to levels approaching zero. (Ayers)
- Require annual reports regarding progress in the reduction of bycatch. (Ayers)
- Require action to curtail fishing when bycatch limits are violated. (Ayers)
- The Essential Fish Habitat provisions of the Magnuson-Stevens Act are important provisions. (Gillis)
- Inspections of large ships coming into the lakes and enforcement must be enhanced and funded. I urge you also on a federal level to consider policies to prevent the introduction of invasive species through the ballast water of ships entering US ports, particularly fresh water ports such as the Great Lakes. (Jimenez)
- Aquatic Nuisance Species
  1) A mandatory ballast water management program for all ships entering U.S. ports and the Great Lakes, so that risk of species invasion via ballast water is greatly reduced;
  2) Prevention of introduction of aquatic invasive species into the U.S. via other pathways;
  3) A strengthened program for early detection and monitoring for aquatic nuisance species;
  4) Enhanced ability to rapidly respond to invading species by eradicating them before they become well established in the U.S.;
  5) Either equipping the Chicago Canal electrical barrier with a backup generator or connecting the barrier to a second power grid, which would virtually eliminate the possibility of the barrier becoming inoperable because of power loss; and
  6) Convening an International Panel of Experts to recommend the best approach to preventing the exchange of exotic organisms between the Great Lakes and Mississippi River basins, and make recommendations to Congress and the President on how to proceed. (Hartwig)
- Coastal Habitat and Fish Passage:
  1) Increased protection of ecologically important areas, such as wetlands and riparian zones in the Great Lakes basin, from urban development, logging, mining, agriculture, and other uses that degrade habitat for fish and wildlife;
  2) Increasing the rate of wetland restoration in the Great Lakes and elsewhere; and
  3) Either eliminating, where possible, barriers to passage of fish and other aquatic organisms, or modifying barriers to allow passage of those organisms to their habitats. (Hartwig)
- Bring fish and wildlife habitat back to our cities. (Davis)
- Great Lakes fishery management rests on three pillars:
  1) The sub-national governments (states, the province of Ontario, and the two U.S. intertribal agencies), operating through their own agencies and collectively through A Joint Strategic Plan for Management of Great Lakes Fisheries;
  2) The U.S.-Canadian Great Lakes Fishery Commission, operating under a binational treaty; and
  3) The federal governments, operating through various federal laws and initiatives. (Gaden)
- Both the invasive species EO and the Council's Plan emphasize the important role of education and outreach is critical not only to inform the public and key stakeholders about the problem of invasive species, but what steps people can take to reduce the likelihood they will accidentally introduce or transfer an invasive species to region or ecosystem. (Williams)
- Problems associated with the lack of critical biological and technical information, as well as need for better data on the environmental and economic impacts of invasive species points to the need to enhance and strengthen our invasive species research and information sharing capacities. Targeted and coordinated research is critical to enhance economic analysis of the impacts of invasive species and improve the ability to predict which species will become invasive. (Williams)

- There are superb possibilities for the engagement of the private sector for innovative approaches, superb possibilities for enhancing close cooperation among and between government agencies and departments (both Federal and state) to generate coherent, cost-effective, efficient, and consistent regulations and management, and, importantly, superb possibilities for the United States to take a global leadership role in marine bioinvasion policy and management. (Carlton)
- We strongly encourage the U.S. Coast Guard to issue some Interim Standards that shipowners can try to meet. Also, we strongly encourage the U.S. Coast Guard to allow experimental testing to be done when a shipowner wants to try some technology or technique, providing "good science" is being followed. The U.S. Coast Guard must not make the rigors of the testing and evaluation so difficult that it makes installation and performance testing an economic hardship and burden for the shipowner. (Harkins)
- The only realistic goal is to prevent future introductions into the Great Lakes. To achieve that goal, systems must be designed that can be installed on vessels trading from the oceans. (Harkins)
- Support and strengthen the National Invasive Species Act. (Reutter)
- Coordination of research efforts is very much lacking in ballast water research arena. (Harkins)
- Quantitative information about baseline habitat conditions should be developed and assembled in order to assist planning and funding efforts. (Wolf-Armstrong)
- In order to restore the necessary amount of coastal and estuarine habitats, we must foster a new mindset and policy regime that envisions projects on much larger size and time scales. (Wolf-Armstrong)
- Coordinate restoration policies and efforts more effectively. A central body should exist on the federal level to synchronize efforts and to minimize duplicative initiatives within the agencies. One template for such a body currently exists in the form of the Estuary Habitat Restoration Council. (Wolf-Armstrong)
- Encourage multi-sector partnerships. (Wolf-Armstrong)
- Make coastal habitat restoration a financial priority. (Wolf-Armstrong)
- Develop a restoration and stewardship ethic. (Wolf-Armstrong)
- Incorporate habitat restoration as a guiding principle and priority in decision making. (Wolf-Armstrong)
- Make the permitting process more conducive to habitat restoration. (Wolf-Armstrong)
- Recognize recreational fishing community significant role in coastal communities social and economic well-being. (Loftus)
- Preserve Existing Habitat now and into the future. (Wolf-Armstrong)
- Determine existing coastal habitat conditions nationwide. (Wolf-Armstrong)
- Increase size and time scales for restoration projects. (Wolf-Armstrong)
- Coordinate restoration policies and efforts more effectively. (Wolf-Armstrong)
- Encourage multi-sector partnerships. (Wolf-Armstrong)
- Specific recommendations are presented. (Rufe)

TOPIC: *LIVING MARINE RESOURCES*

KEY ISSUE: *Sufficiency of Science and Information*

ISSUES RAISED

- Only data for seabird/longline interactions is from U.S. fleet; approaching 40% observer coverage. (Webster)
- Providing data provides foundation for an international management plan and international fleet cannot be depended on to gather this information. (Webster)
- Concern is lack of resources to adequately conduct applied research and scientific investigation:
  1) MSY for squid is undetermined, proxy based on unproven egg escapement model proposed;
  2) Full extent of sardine resources along west coast is not known; comprehensive biomass survey is essential;
  3) Present harvest guidelines for sardines subtracts Mexican biomass but doesn't account for Canadian component; Tri-state Sardine Forum welcome initiative that should be elevated to US State Dept. level. (Amoroso)
- One of biggest impediments to good fishery management has been lack of good data. (Parravano)
- Crux of the issue is education both for fishermen and consumers. Both need to keep up with changing conditions. (Ford)
- We hear a lot about good science but what we need is good data. Fishermen keep good data but won't provide it; don't trust one another or regulators. (Halmay)
- NOAA supports quality research: monitoring, assessments, strategic research; but under-funded [detailed discussion provided]. (Hogarth)
- Science voids in fishery management and where "best available science" is not sufficient [discussion provided]. (Mahood)
- Response to questions is a detailed description of SC monitoring programs that monitor ecosystems so they know what to measure in order to determine what regulations are needed. Programs described are in the following categories:
  1) Fishery Monitoring;
  2) Environmental Health Monitoring;
  3) Aquaculture and Fish Stock Replenishment. (Sedberry)
- Key to making decisions that result in successful management is having good management information:
  1) Collection of fishery dependent and fishery independent information on each stock;
  2) Having analytical capability to assess the condition of each stock.

  Shrimp is only Gulf fishery with good long-term data, other aggregated into species groups. (Swingle)
- NMFS has never had stock assessment personnel or capability level consistent with needs of Councils. (Swingle)
- Another of major data deficiencies is lack of social and economic data on fisheries and especially on communities. (Swingle)
- Very profound competition in scientific community for "best" science; many different approaches; maybe a commission like the Marine Mammal Commission or peer reviews could help. (Gutting)

- NMFS authoritative source of information on status of fish stocks for U.S., FAO for global; some trends of reversing overfishing. (Gutting)
- Scientists have identified fishing as primary cause of ecosystem change over time. (Rufe)
- Lack of information detailing status of resources and nature and extent of human impacts on the marine environment. (Dobrzynski)
- Good science and data are lacking. (Morris)
- Currently lack the science that is demanded. (Brown)
- While accurate, precise and complete scientific information will not of itself guarantee successful fishery management, it is an essential ingredient and is recognized as such in our national fisheries law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976 as amended (MSFCMA). (Fox)
- Improving data gathering capability requires some or all of the following elements:
  1) Consistent outreach to industry and other interested constituents;
  2) Careful development of valid technical and scientific protocols; and
  3) The testing and refinement of these lessons in well-designed pilot studies. (Fox)
- Scientific information for fishery management should possess the four "r's" as penned by Dr. Michael Sissenwine: relevant, right, respected and responsive. (Fox)
- For the independent peer review system NOAA created a Center for Independent Experts. The University of Miami was established as a pilot project. They set up the mechanisms and found the individuals that were willing to serve in that role. The idea was to create a pool that will be supported by the public to provide independent review. (Fox)
- NOAA has done some studies on how to make a coherent national system that is not piecemeal. It should deal with data collections, economics, social analysis, and biological analyses. We have a major requirement study for fishing information system that was requested by Congress. We produced an acquisition plan, a stock assessment improvement plan, and requirement plans that deal with science on a regional and a national basis. The research process is not a top down process and the planning process is not a top down approach. It's really more of a bottom up and collegial approach. (Fox)
- NOAA has a plan on recruitment that was developed by NMFS. There are certain types of expertise that are almost unique to NMFS. It is really difficult for faculty members whose expertise is in fishery management, fishery science, and stock assessments to get funding from sources other than agencies that do that job. The NFS does not fund those types of research. There are a lot of economists but we have half a dozen available national scholarships and the Sea Grant program specifically for that. Last year we did not get one applicant. It is a very, very serious problem. (Fox)
- Congress requires us to produce a strategic plan for research on a biennial basis, as well as other reports to Congress. We make a very strong effort to try to develop our budget around those documents. We all know that it is amazing what comes out on the budget from what you submitted in the beginning—there are so many layers. Congress earmarks funds for research as well as for data collection, and they are very different. A large share of those earmarks go to institutions other than the Federal government. We work with those institutions but the government looses the ability to say these are the questions that need to be focused on. (Fox)
- Research in U.S. fisheries management is dominantly an applied problem directed to producing better outcomes from our fisheries management. (Hilborn)
- Within the U.S. the dominant funding source for fisheries management research is NMFS through Congress, with States making important contributions. There is little real planning involved in data collection programs, but rather the politics of the moment. (Hilborn)

- The funding situation in the U.S. is similar to other countries, but differs radically from many of the more progressive countries where fishery managers and industry representatives determine research expenditures on a fishery-by-fishery basis, and most of the costs are recovered from the commercial industry. (Hilborn)
- In the U.S. NMFS and the States do almost all science. There is a growing trend towards cooperative industry/government data collection programs and for a few fisheries consultants working for the industry to participate in the stock assessment process. (Hilborn)
- It is clearly a social choice to determine who is allowed to fish and allocating the catch amount for users. There is a lot of science to determine which aspects of the system work and which do not. (Hilborn)
- The five to ten percent estimate given for budget recovery for research and management of fisheries, is a rough estimate of how much of the landed value goes into the expenses for research, management, enforcement within Australia and New Zealand that is recovered on a fishery-by-fishery basis. We should move in this direction—we must have profitable fisheries in order to do that. (Hilborn)
- In the 25 years since the Fishery Conservation and Management Act was first implemented, little systematic attention has been paid to economics in fishery management. (Hanna)
- Scientific feedback and mutual respect is needed. The design of research to address fishery management issues does not normally invoke the participation of harvesters; harvesters will believe that fisheries management can work if they understand and believe in the science upon which it is based. This means they must be involved in the design and conduct of investigations and experiments, not just in the review of the results. (Leaman)
- The ecosystem approach that many of us have alluded to is critically important. As part of our biodiversity initiative, a biomap of MA was created. Far too often management has been conducted species by species, animal, insect and plant life by animal, insect and plant life. Instead, focus should be on the intact habitat in which they exist. A GIS database was developed that not only identified core habitat areas, but also supported and created a mechanism by which that habitat area could be explored by developing supporting natural landscapes. It is critical to have information and maps from 3 miles out to 200 miles out so long-range protection can be made about those areas. (Durand)
- The scientific challenges faced in supporting the management of living marine resources, in New England and elsewhere in the U.S., are to provide answers to questions of applied ecology and social science. Specifically, the challenges are:
  1) The determination of resource abundance and productivity.
  2) The relation of that productivity to rates and methods of exploitation.
  3) The evaluation of management options and distribution of benefits, consistent with sustainable utilization.
  4) The interrelationships between biological resources and variation in the physical environment. (Murawski)
- The fishermen themselves are actually pushing to be looked at as scientists. There is not really a need for incentives. They know they are the ones out there. Fishermen are now realizing that serious management decisions are being made partially on the basis of what goes into their logbooks. (Murawski)
- Related to the coordination of science with management objectives, the problem is not that the research is not practical, it is that the research is actually too practical. It's always when the policy makers and the decision makers are closely aligned that it turns into short-term research. (Murawski)
- The Council also has been on the cutting edge of seeking new and better avenues to integrate management information needs with research efforts and to foster the participation of fishermen in collaborative fisheries science. (Hill)

- The Northeast Fisheries Science Center is an extremely well respected institution that produces high quality information that has stood the test of peer review time and again. However, the Center does not have adequate funding to meet the existing mandates of the Sustainable Fisheries Act. (Hill)
- Conservation engineering is going on all the time and bottom-trawling impacts and gear impacts is a subject matter that is being addressed, but it is not addressed in a comprehensive enough manner. (Hill)
- The City of Gloucester constantly needs more and better access to up-to-date scientific information and analysis—not only to participate meaningfully and constructively in the national debate about national resources, but also to help make the best decisions affecting resources in Gloucester. (Bell)
- The overall setting of harvest rates and harvest quotas at the Council level is very much driven by the science involved. There are planned teams that have a scientific and statistical committee and they have scientists from multiple disciplines, multiple agencies. They bring a variety of perspectives to the science debate and it's a very open scientific process. (Benton)
- The local observer program was one of the first of its kind. It is a central part of the management regime in the offshore fisheries and without those observers, the fisheries could not be well managed. It is funded by industry, through contractors that are approved by NMFS. They give the basic data that is used to open and close fisheries and to ensure that catch limits and bycatch limits are being followed. (Benton)
- The scientific community advises the Alaska Council process and it identifies research priorities, which sometimes get funded and sometimes do not get funded. They are often focused on a short-term research question. The North Pacific Research Board, however, is engaged in the long-term research plan looking 20 years out. (Benton)
- The absence of information is a reason to be cautions. While each species taken as bycatch performs some ecological function, we have little if any understanding about them. According to NMFS, scientists do not know the marine habitat requirements for any of our managed fish species. NMFS scientists also acknowledge that the status of 86% of the fish species in the North Pacific is unknown. (Childers)
- Management by litigation does not encourage credible science. The level of science required for ESA is not consistent with traditional academic research which encourages transparency and peer review. (Stinson)
- Nearly doubling of the current science budgets is the order of scale in which we need to think. And, that is not the scale for one or two years, but we have an ongoing need for this. (Balsiger)
- The North Pacific Research Board is unique. We have an endowed fund that can generate from year to year a level of funding that we can use for research. As long as that fund is protected and it's available, we can support long-term programs, particularly monitoring programs. There are common types of research issues to all regions. The various regions should be communicating and learning from each other and building on each other. That would bring additional credibility to the science. Any improvement in the information and the science that is supporting your management decisions as vetted through an SSC would improve the credibility of the process. (Pautzke)
- When the Council examines its stock assessments, which they do every fall, it has information that comes before it at its December meeting when they're setting their actual harvest levels for the next year. And, consequently, they have this annual process where they are becoming more and more aware of the impacts of the fisheries and on other components of the ecosystem. (Pautzke)

PRESENTER RECOMMENDATIONS

- Greater emphasis and additional funding needs to be applied to collection of management information, including continuation of cooperative programs with states (SEAMAP, RecFIN, ComFIN, MARFIN). Greater emphasis on collection of information should be by observers: New England a good example. (Swingle)
- Evaluate science funding needs for current mandates and ecosystem approach. (Hogarth)
- Important to involve fishermen in development of monitoring plans or they won't buy into it: create partnerships with them for sampling, etc. (Sedberry)
- Maintain monitoring and enforcement as high priority: onboard observers, vessel monitoring systems, and accurate data reporting. (Nash)
- Implement Coordinated Data Collection and Management System for Fisheries:
  1) State/federal systems such as FIN and SEAMAP coordinate collection and management activities and provide data for all parties;
  2) Today's management regimes require data which are statistically sound, long-term in scope, timely, and comprehensive;
  3) Cooperative partnerships between state and federal agencies most appropriate mechanism. (Simpson)
- If starting fisheries over: Get labs focused on management information; improve economist support; more money for assessments and plans. (Swingle)
- Socio-economic effects of fishery regulations need to be better understood and assistance provided to affected fishermen and communities during transition period. (Cooksey)
- Comprehensive ocean observing system needed to further science-based decisions; biological and socio-economic information. (Hogarth)
- Undertake a concerted effort to improve basic fish population information so that we make smarter fishery management decisions. (Danson)
- Need to understand connection between estuaries and fisheries stocks and habitat and forage stock to overall health of Gulf fisheries. (Davis)
- Must not overlook microbiological issues that affect seafood we eat, including:
  1) Health of fishery;
  2) Susceptibility of culture system to disease;
  3) Misuse of antibiotics in aquaculture;
  4) Seafood used in bioterrorism;
  5) Nonindigenous species issues related to fish and microorganisms;
  6) Concerns about environmental contamination. (Grimes)
- Advocate that NMFS require observers or their collection systems to yield statistically valid information to document total mortality including non-target mortality and compliance with existing regulations. (Dobrzynski)
- Develop national, coordinated research program for living marine resources:
  1) Enhance basic scientific understanding of how marine ecosystems function and how fishing activities interact with them;
  2) Integrate biological studies with studies that seek to understand physical environment;
  3) Adapt technological tools for remote sensing of the ocean environment; shallow water habitat mapping and improving stock assessments. (Rassam)
- Direct NMFS to use and extrapolate existing information where appropriate to fulfill Agency's conservation requirements. (Dobrzynski)

- NSF and NOAA, or new Department of Oceans, should initiate and maintain funding program in marine conservation biology. Program would establish eight academic "Centers of Excellence" in research and training at universities or marine labs throughout coastal areas of U.S. states and territories, and extramural graduate fellowship program for students at other colleges and universities. NSF should make special efforts to increase participation in research and training by minorities who are significantly under represented in marine science at present [reasons why this would make a difference, and who should do it, are provided]. (Norse)
- Recommend to Congress that as they consider the reauthorization of the M-S Act, that a system be put in place to provide for research and monitoring that will inform management decisions that will lead to a long-term sustainable fishery. (Shultz)
- More resources are needed to research particular stocks when we think it is needed. (Smitch)
- Increase funding and staffing to collect, maintain, and analyze fishery-dependent and fishery-independent data. (Brown)
- The way to open up academia is for academic institutions to offer appointments to those in state and Federal labs who advise and support students, for affiliate faculty positions. It is recognition of their academic quality and makes them colleagues. There is another way, also, and that is to have part of their job as Federal employees to teach courses. That model does not exist in NOAA. (Nowell)
- Improve stock assessments—gain significant precision and accuracy through research on improved methodology and the full introduction of acoustical technology and additional major gains will come from long-term, at least interdecadal, forecasting. (Fox)
- Invest in technology—data that is collected by hand off logbooks can be done simply and cheaply by electronic technology such as satellite technology and sensors aboard fishing vessels. (Fox)
- Must do more funding of university programs. There are too few students being trained in the fields of science that are nearly unique to the mission of NOAA Fisheries, stock assessment and fishery economic assessment. (Fox)
- The scientific committee, which is a part of the fishery council system, should be given a greater role in describing the constraints within which the fishery management program should be developed and should not be overridden by the council for policies and short term economics without some consideration. This is from a conservation standpoint and from the human dynamics, the effect on human dynamics, standpoint. A statutory fix is required in order to make that aspect work. (Fox)
- Increase investment in social science—provide a better understanding of the economic and social effects of fishery management and the dynamics behind overcapacity, laying out potential mechanisms for resolving it along with the fiscal and social costs and benefits in doing so. (Fox)
- Let local fishery managers, scientists, industry and councils make the decisions about what research programs to conduct. (Hilborn)
- We need to promote long-term economic productivity to achieve sustainable fisheries. It is time for a public investment in fisheries to achieve long-term economic profitability. (Hanna)
- We need full funding of a comprehensive or coherent data direction system developed within NMFS for systematic nationwide ongoing data collection. (Hanna)
- In order to improve the process of generating scientific advice, the Commission should endorse a more inclusive and comprehensive process for the planning and conduct of scientific investigations by Federal agencies. (Leaman)

- The Commission should also endorse governance structures, such as dedicated access privileges, that provide the incentives for individual stakeholders to participate in such research. (Leaman)
- Need better baseline data and more effective monitoring of fishing to more accurately assess and manage species. (Hamilton)
- Create comprehensive fishery monitoring programs that will improve both the quality and the timeliness of data for fisheries stock assessments and management decisions. [Further description provided.] (Richert)
- There needs to be more emphasis on the study of life in the oceans at the level of species and this is the goal of the Census of Marine Life (CoML) and the Ocean Biogeographic Information System, a component of CoML. (Grassle)
- In order to enhance the science capabilities in support of living marine resources management, the U.S. should:
  1) Consider that every fisherman is a scientist—information provided by fishermen currently provides one of the critical foundations of stock assessment for fishes, invertebrates, and protected species.
  2) Sharpen our tools. Three classes of new tools that have been developed and are beginning to be put into use are: 1) fish tagging with new "smart" or data storage tags which include a small power source and microchips with built-in clocks and sensors; 2) new technologies like multibeam sonar and techniques for ground-truthing of imagery, pioneered by the USGS and other institutions; 3) tracking systems are now used in the northeast to manage days at sea quotas for some fisheries.
  3) Manage ahead of the crest. Resources cannot continue to be managed just "behind the crest" of resource decline, followed by increasing regulation. If this continues then management and the science supporting it will remain contentious and inefficient.
  4) Maintain the vigor of science. Invention is the agent of progress and change. (Murawski)
- Continue strategic investments in technologies, institutional interrelationships, and people can improve the precision, relevance, and timeliness of science in support of living marine resource management. (Murawski)
- A major theme for NOAA might be conservation engineering work. (Hill)
- Augment funding to improve the timeliness of the data collection process. This may require putting more scientific equipment on boats, and it may require increasing the number of human observers charged with compiling real-time data. (Berkowitz)
- More funding is needed for more research on essential fish habitat. The relationship between habitat and fisheries is a good way to start working towards the ecosystem management approach. It is important to understand those habitat relationships. (Buchsbaum)
- The nation should have observer-monitoring programs in place around the country. (Benton)
- In the Alaska Council arena the analysis is there. When the scientists come up with their numbers all the justification analysis is there. If there is going to be deviation from it that there has to be a record and the record has to be credible. It has to be transparent and based on facts. (Benton)
- The Regional Fisheries Management Council is the most successful Federal state management process yet created. But, the Councils cannot be successful unless their decisions are based on sound science. (Stevens)
- Scientists should study interaction predation has upon our system, other than from mankind. (Stevens)
- Alaska must address critical needs for long-term biological and physical data on ocean and coastal habitats. (Penney)

- The Federal government needs to provide basic observations on ocean conditions to the managers of living marine resources who also serve millions. [discussion provided] (Penney)
- There is a strong need for additional research that is directly applicable to present management concerns: the U.S. does not appear to be the world's leader in applied fisheries research. (Winther)
- Provide for more flexibility for input and innovation by members of the public: one database of information that is sometimes discounted and disregarded by NMFS is the fishermen themselves. (Winther)
- Multiple year research and funding is needed. Most of the projects we are working on, all 175 of them, are multiple year projects—three years to ten years for some of them. (Balsiger)
- We must leave a legacy of better science and understanding to enable successful stewardship. (Pautzke)
- Have research boards divided up regionally, in the way that the NMFS is divided throughout the country. That would work with the local constituents and the local scientists to develop long-term research programs. (Pautzke)
- Comprehensive marine research is needed. (Pautzke)
- Propose that an adaptation of the FDA's double blind study practices and requirements be adopted for ongoing and proposed marine resource uses. (Lakosh)
- Recommend outreach programs to help the constituencies understand and accept how data is collected and applied. (Radonski)
- Another area that lacks outreach and constituent understanding is in the data collection efforts for recreational fisheries. (Radonski)

TOPIC: *LIVING MARINE RESOURCES*

KEY ISSUE: *Types of Management Structures and Tools*

ISSUES RAISED

- Many local, village, or traditional management systems are successful because they manage for the future. Marine reserves are alternative to traditional management. (Birkeland)
- Precautionary Principle should be followed for some coral reef resources. (Birkeland)
- Current U.S. policy is heavily weighted toward extraction of ocean resources under the DOC and mandate of M-S Act to seek out and harvest fish, broadly defined, wherever found. Need to balance this policy with the stewardship responsibilities for those resources and the ecosystems impacted directly or indirectly by extractive uses. (Raney)
- Northern Hawaiian Islands and Pacific Remote Islands and Atolls are marine equivalent of wilderness areas and deserve special protection; as national policy survival of endangered monk seal, sea turtles, sea birds of these areas should take precedent over extractive activities; precautionary approach must be taken. (Raney)
- Coral Reef Task Force has developed a National Action Plan to conserve coral reefs. (Schwartz)
- Living marine resource conservation policy: Living marine resources are a public trust resource; harvesting is a privilege not a right. (Paul)
- Saltwater aquarium and live fish trade damaging. (Paul)
- Major issue of concern to CA fisherman is continued access to Coastal Pelagic Species (CPS); number of regulatory processes and initiatives presently underway that may adversely affect access.
- Squid FMP being developed by CA Fish and Game with limited entry, "replenishment zones," trip limits/caps; process needs industry advice and stakeholder participation.
- Harvest guidelines for sardine and mackerel being developed with archaic models that no longer reflect dynamics of fisheries. (Amoroso)
- New policies are needed to address the respective roles of sanctuaries and councils and how they relate to each other. (Bunn)
- In CA, the mandate for marine resources management has been broadened to include an ecosystem approach, with an emphasis on sustainable fisheries, resources and habitat, and a de-emphasis on maximum sustainable yield for fisheries. Council's mandate should move in this direction. (Bunn)
- Major problems with current fisheries management:
  1) Excessive fishing capacity, fostered by perverse economic incentives;
  2) Lack of sufficient scientific understanding of fish populations and ecosystems;
  3) Inadequate attention to maintaining healthy ecosystems that sustain fisheries;
  4) Failure to provide a stable regulatory environment;
  5) Lack of adequate measures to deal with and reduce scientific uncertainty. (Fujita)
- If we change incentives to reduce bycatch we also need to change government assurances that stocks will rebuild. (Parravano)
- We lack ability to adapt the harvest capacity of our fleet with what is there; adjust the capacity with the size of the fish stocks. (Parravano)
- M-S Act seems to work well in Alaska because the fishing industry and the communities are part of the process. (Parravano)

- Commission needs at least one good viable person who knows the industry. (Felando)
- Thoughts about how we get fish: we know certain methods of commercial fishing are detrimental to the habitats; getting rid of trawl gear, imposing reserves, would help. (Ford)
- Concerned so much foreign fish, particularly farmed fish, coming into our markets; how can U.S. boats or families compete. (Ford)
- Focus has been on "direct take" and "incidental take" of marine mammals but now there is new awareness of other types of impacts. (Jasny)
- Concerned recreational anglers not recognized on any panel. Important to realize recreational anglers are ones least likely to cause problems. [discussion provided] Please provide adequate representation. (Raftican)
- Key issue facing marine fisheries management- utilization of coastal resources expanding at unbelievable rate [stats provided]. (Dodds)
- Fisheries management system is layered; international and regional. Simple works best for fishery management. CCA has simple principle: Fisheries management is most effective if it is done at the lowest possible level of government. (Dodds)
- NOAA fisheries efforts to address challenges:
  1) Regulatory streamlining to reduce unnecessary layers of review;
  2) Trying to integrate current statutes;
  3) Improving state/federal management interactions;
  4) Expanding cooperative research with fishermen, particularly gear development. (Hogarth)
- Heinz Center, with NMFS, is organizing Dialogue on Marine Fisheries to continue stakeholder involvement in considering policy options. (Katsouros)
- Two major problems need to be corrected in south Atlantic to effectively manage marine fishery resources:
  1) Lack of adequate stock assessment, especially snapper grouper complex; efforts are underway to provide better data (e.g., ACCSP; SAW);
  2) M-S Act slow and cumbersome; regulatory process is bogged down [detailed discussion is provided] (Mahood)
- Congress picked good delineations when set up regional councils because they reflect different thinking around country. (Mahood)
- Description of SCDNR Involvement with Fishermen in Management: SAFMC; MAFAC. (Sedberry)
- Neither states nor feds have the resources to manage all the fish we want to. (Shipman)
- In some regions fishery management, M-S Act, works better than others; depends on complexity of the fishery; interaction with advisory panel. (Shipman)
- Charleston Bump good example of state providing valuable information to federal fisheries managers. (Stallworth)
- Previous panel comments did not broach the dissatisfaction of marine recreational anglers with current infrastructure. Panels lumping recreational fishing and leisure tourism. Recreation a problem because infrastructure and policy needs of recreational anglers not defined. (Radonski)
- Believe fish stocks will remain healthy for future generations if managers carefully implement IFQs without privatizing the public resource. (Nash)
- Concerned about privatization of fisheries, in particular fishing cooperatives and potential implementation of IFQ program. Both management techniques fail to fairly compensate American people for use of their resource; put additional burdens on taxpayers; and do not protect independent fishermen [discussion provided]. (Heasley)

- Three areas need and deserve the highest priority in Commissions policy formulation:
  1) Coral reefs [discussion of coral degradation provided];
  2) Marine Protected Areas: quality, not size, matters [more discussion of MPA's is provided];
  3) Marine Mammals-Consolidate and strengthen measures to protect marine mammals. (Dunstan)
- GRN priority living marine resource issues:
  1) Sea Turtles: many human activities threaten Gulf sea turtles, e.g., commercial fishing, coastal development, pollution. [discussion provided];
  2) Marine Mammals: many human activities have adverse impacts, e.g., coastal development (marine dumping and dredging), offshore oil and gas, vessel traffic, military activities. Most impact analysis and mitigation activities tailored to dolphins. Threats to whale species are not addressed. Lack sufficient information that these activities do not have a significant adverse impact on whales, particularly use of sonar.
  3) Fisheries: 72% of species under management in Gulf are overfished; 36 species at risk of extinction are in Gulf. Causes numerous and interrelated: serial overfishing leads to crisis management, lack of information. Sustainable fisheries management requires ecosystem management; need reform of fishery management council system [discussions provided].
  4) Dead Zone: Nutrient pollution and its threat to the Gulf's marine resources: 90% of nitrogen load causing Dead Zone is from nonpoint runoff and over half is from upper Midwest. (Sartou)
- Interrelationships:
  1) Marine fish especially interrelated with environment and man's influence;
  2) USCOP must provide recommendations on future, large-scale policies for all our nation's oceans. (Simpson)
- Passage of M-S Act greatly expanded role of federal government in fisheries management. Has it worked? Depends on definition of worked. Has affected marine fisheries management positively; "worked" is another matter:
  1) System is expensive and not very responsive;
  2) Council system have fostered broader thinking and provided guidelines for rational management with several successes, but fisherman and processors pay heavy price for Gulf-wide standards on many fish;
  3) Reduction of foreign fishing off our coasts has been successful;
  4) Habitat loss efforts have resulted in very limited real change;
  5) Successful in engaging general public in management process by selection of individuals to serve on Councils;
  6) Whole system is data driven without initiative to improve and establish systems and mechanisms for future management needs. (Simpson)
- Returning primary role of fisheries management to states could technically and ideally be done but mechanically is doubtful; costs would be lower and more responsive in a time sense. States in a region would need to agree upon overriding standards or means by which regional fisheries will be managed. (Simpson)
- U.S. could be world leader in sustainable fisheries and marine eco-technologies if there existed a regulatory framework to redeploy retired oil and gas platforms into sustainable fishery platforms. Platforms are "essential fish habitat." (Kolian)
- Currently approximately 4000 platforms deployed in northern Gulf; region does not possess hard-substratum in shallow water; platforms provide this. Many marine organisms settle on platforms including Caribbean sponges, gorgonian coral, and demersal fish. Also being colonized by Caribbean coral. (Sammarco)
- Governors support National Academy of Sciences report on ITQs (avoid one-size-fits-all). (Cooksey)

- Five-year review of Sustainable Fisheries Act, "Caught in the Act," highlights:
  1) Overfishing is allowed to continue;
  2) Inadequate overfishing definitions in many fisheries;
  3) Rebuilding plans take too long;
  4) Nearly all councils have failed to develop required bycatch reporting systems;
  5) Most councils identified EFH in appropriately precautionary manner; several councils designated Habitat Areas of Particular Concern;
  6) NMFS response to inadequate assessments of fishing on EFH inconsistent. (Crockett)
- U.S. policy has had profound impact on fisheries issues:
  1) 200 mile legislation and "Fish and Chips" policy;
  2) Fishing cooperatives;
  3) Aquaculture. (Gutting)
- Key issues of concern:
  1) Fishery process overwhelmed by litigation; breakdown in management and delivery of science;
  2) How to provide jobs and economic opportunities for coastal communities depending on ocean resources;
  3) How to unlock tremendous potential in aquaculture;
  4) How to incorporate environmental concerns and enhancement opportunities into fisheries management. (Gutting)
- Among highest priorities: end overfishing and rebuild overfished stocks. (Hopkins)
- Questions whether NMFS mission and institutional structure align with sustainable fisheries and ecosystem protection. (Hopkins)
- Councils often settle for lowest common denominator for consensus. (Hopkins)
- Congressional moratorium and concerns leading to it are greatest obstacles for establishing new Individual Fishing Quota systems.
- Fisheries of concern and how local community is affected. Current fishery policy result of slow and awkward transition from promotion to regulation. (Farr)
- NMFS now one of most regulatory agencies in US government; driven by crisis; council-based management needs to work better. Appropriators in Congress lack confidence in NMFS; reluctant to give big increases; authorizing committees won't give new authority. Management programs have suffered. Capacity reduction; cooperative research; MPAs ecosystem-based management, etc. (Farr)
- Fishing has two goals: develop fishing and maximize yield over long term by limiting catch to sustainable levels. Fishing has three main problems: overfishing, unintended catch, and habitat degradation. Inherent flaw: conflict between trying to increase number of fish caught, and need to limit fishing and rebuild populations. (Safina)
- Fisheries provide a net benefit only when well managed and not depleted. (Safina)
- Free access to the seas is no longer an option. (Monroe, D)
- Believe in ITQ system of management but community-based, not tied to traditional fishing capacity. (Monroe, D)
- The general perception of fishery councils on overfishing and policy recommendations to verify and manage the present situation:
  1) Deals with definitions in Sustainable Fisheries Act; they are sound and will move toward maximum sustainable harvests. Revised Sea Grant publication "Understanding Fisheries Management" incorporating biomass-based overfishing measures would be useful;
  2) Biomass portions of definitions don't work well in data poor species; improved guidance from NMFS needed on acceptable range of proxies. (Morris)

- Establishing a council like MMC for fisheries would not help with marine fisheries issues. It would be duplicative of existing activities. Having a 10-year review panel like the Ocean Commission would be more helpful. (Morris)
- Single most critical deficiency in marine mammal conservation today involves lack of proactive, forward-looking approach to conservation and management of resources. (Reynolds)
- Global issues: Several factors affect marine mammals globally (e.g., noise and chemical pollution, fishing, oil and gas development and other development activities, and global climate change). (Reynolds)
- Issues of importance to marine mammal conservation in southeastern U.S.:
  1) Best publicized issues in SE involve manatees and North Atlantic Right Whales;
  2) Bottlenose dolphins stocks poorly defined;
  3) Noise related death (sonar) of beaked whales occurred recently; noise and chemical pollution are extremely critical in parts of S.E. (Reynolds)
- MMPA does not function as true ecosystem management model. (Reynolds)
- [Discussion of potential biological removals provided] (Reynolds)
- Fish are regulated as commodities; they are wild animals. (Flemming)
- Stock Enhancement:
  1) Important questions remain unanswered about consequences of ecological and genetic interactions between hatchery and wild stocks;
  2) Stock enhancement can do more harm than good [four reasons provided]. (Haddad)
- State-Federal Fisheries Management: 1993 Atlantic Coastal Fisheries Cooperative Management Act considered a success. (Haddad)
- Implementation of the MMPA and ESA: These two acts and their resultant implementation have had a deleterious effect on ability of states to conduct scientific studies needed to actually affect recovery of species: cumbersome permitting process. (Haddad)
- Changes:
  1) Consider NSF program on Long-term Ecological Research or Land-Margin Ecosystem Research models;
  2) Seek specific input on what fisheries and ecosystems should look like during public hearing process, then consolidate and incorporate into final report;
  3) All stock assessments (federal, state, private, academic) should be considered and evaluated objectively if received in time for peer review;
  4) Vision for America's fisheries [Six elements provided];
  5) NMFS needs clear authority to modify Council's action or act when they don't;
  6) Fishing mortality rate of 75% of the level associated with MSY is an appropriate management target. (Rassam)
- Put the myth to rest that says bycatch only occurs in a couple of different fisheries. It is a fact that recreational fishermen in rivers and oceans have bycatch. Everyone does. So the real question is about volume and how can it be reduced. (Moore)
- The premise of the Estuary Restoration Act is to provide some funding, not 100%, to these partnerships. There needs to be funding. Portions of the Act involve some serious money because it involves research; you have to know what you are doing. (Fletcher)
- Concerned with the future of the NMFS and the Council structure. Problems vary between Councils. [discussion provided]. (Alverson)
- Councils should have full range of tools available to manage the fisheries under their jurisdiction; rescind laws limiting use of limited entry. (Alverson)

- Goals and principles of managing ecosystems should be clearly stated and locked into legislative language and should not be vague or generic in character. [discussion provided]. (Alverson)
- My suggestion of the appeal process is political. We all know that the political process depends on the types and nature of support that comes from the public sector. The regime has shifted and the environmental community and the public are much stronger now in terms of their public influence. The current Secretary of Commerce is more in the conservative regime because that is where the public support is. The public wants to remedy what is going on in the oceans. (Alverson)
- There have been ecosystem management group seminars all over the country and nobody is looking at managing the ecosystem. They are using ecosystem principles to manage human activity. (Alverson)
- Improvements in technology can make significant advancements in bycatch reduction. We also need to improve our documentation process. (Alverson)
- Comments on behalf of the Pacific Fishery Management Council: strongly disagree with recent efforts to change the role of regional councils. [detailed discussion is provided] (Brown)
- The Pacific council and fishermen in the commercial fishing fleet are working on how to avoid large amounts of bycatch. (Brown)
- Six years ago The Nature Conservancy (TNC) took a look at the status of our conservation efforts across the U.S. and we saw they were extremely piece- meal and haphazard. We engaged in a process of eco-regional planning. Two thirds of the planning for the terrestrial U.S. is finished. The focus is on identifying conservation targets. The ecosystems and the species direct the available information, of which we need as much as possible to set conservation goals for how much needs to be protected and develop a straw man set of priority sites. (Beck)
- Always take a look at what the targets are—are they kelp, sea grass, or rockfish. Then think about what the principle stresses affecting the targets—poor water quality, reduced water clarity, loss of habitat from coastal development or shoreline modification, or over fishing. Then tailor the strategies—marine protected areas or conservation strategies. (Beck)
- To work with the private sector you have to find similar interests in seeing coastal ecosystems and species in their natural state in one way or another. This is good for business and good for conservation groups. (Beck)
- TNC has a partnership program both on coral reef and whale conservation where we have been trying to identify private partners for both. It's been tougher on the marine side than on the terrestrial side. Perhaps it is the absence of marketability. There are fewer companies, less public awareness. The public perception seems to stop at the water surface. (Beck)
- The major problem in U.S. fisheries management is that we generally think that regulating catch levels IS fisheries management. Fisheries management also involves determining who is allowed to fish, and allocating the catch among users. (Hilborn)
- All parties involved in fisheries management, including commercial fishermen and conservation oriented NGOs, want the same thing—sustained marine ecosystems. (Hilborn)
- One of the mistakes we have made is that it doesn't have to be all or none. You could retain forty percent of the quota in public ownership on an annual basis. You could grant part of that to the processors, fifty percent to the harvesters, and retain forty percent to the public. It doesn't have to be all or none. (Hilborn)
- Investment in property rights will provide economic security and predictability to fishery participants. (Hanna)

- One problem with having a moratorium in place is that once you have let the fishery become very economically depressed, you remove so much of the wealth potential from the potential investors in buying each other out, that you have stretched the limit of fishery to jump right into an individual fishing quota program. (Hanna)
- In fishers, they have become stabilized and have become more of a business planning climate, where you have assurances that your share, not quota, for a certain year translates into a certain amount of fish, you can do some reasonable business planning. You can make good market contracts and you can deliver fish on a schedule that makes economic sense. You don't have to fish when you are putting your life in danger. (Hanna)
- Currently, NMFS has about a 26 to 1 ratio people working on the biological side of fisheries versus the social science/business side of fisheries. The proportion you need depends on how you choose to manage. NMFS has a large majority of biologists because that is how the Federal system has developed. (Hanna)
- There are at lest two major ways in which science must interface with policy in fisheries management:
  1) Policy development—science must provide the basic understanding of stock behavior, as well as the predictive tools and framework necessary for the development of harvest policies.
  2) Policy implementation—science must be capable of describing the present and future status of resources with precision sufficient for effective implementation and evaluation of harvest policy. (Leaman)
- A basic democratic tenet is that effective government rests on the consent of the governed. Fisheries management, in the context that it is governance, has generally not expended sufficient effort at gaining this consent. (Leaman)
- We have begun to re-define the oceans from vessel highways, industrial sites and free-for-all fishing holes to vital natural systems that must be protected and nurtured, but there is a long way to go. (Garrett)
- Salmon are by their nature highly migratory and thus are a multinational resource. True fisheries management should be about managing fish through their entire life cycle, not just managing fishermen and fish harvests at sea in a near-total vacuum. (Spain)
- Abusive Transfer Pricing (ATP) is used to falsify the wholesale export prices and this in turn is used to ratchet down grounds prices paid to U.S. fleets: to destroy small businesses and our fishing communities. Abusive Transfer Pricing is predicted to be the largest global finance and tax topic in this Century. The U.S. has lost billions each year. [discussion provided] (Taufen)
- One of the fundamental problems with the placement of NOAA and marine fisheries in the Department of Commerce is they are overwhelmed by the industrial model, a viewpoint that perpetuates throughout the system. (Spain)
- The discussion about privatizing American's fisheries disturbed me. For me, that is not an issue at all because American's fisheries are not available to be privatized. They are a resource of the American people, and they will remain that way. (Heasly)
- One of the detrimental effects of creating a quota system is that once it is created, especially if it is created in a way that it looks like a property right, it is gone. (Heasly)
- The lack of fisherman representation in these hearings is causing a skewed presentation on ITQ. (Heasly)
- The salmon issues have prevailed in Washington. We see that very often the same regulatory regimes that affect the coastal areas have deep effects on upland owners in Washington. (Brautigan)

- The Sustainable Fisheries and the Small Families Fishery Association bought directly from small family producers and pays a bit higher prices for their hard work and their well cared for fish. These fishermen have sustained sales growth every month since they opened. This is by selling fish that are harvested, and selling no other species. (Foss)
- There is growing recognition that a new era of fisheries management is urgently needed that is based on the management of entire ecosystems. (Richert)
- Ecosystem management—the first tenet of addressing ecosystems is doing good quality, single-species management across the board. For example, there is the whole issue of bycatches. Bycatch is where the target species for one fishery has a bycatch for the target species for another. That's where an ecosystem umbrella plan could work to look at the compromises that you would need to manage in a whole system. (Murawski)
- The same confidentiality issues that arise in terms of fishermen-derived information come into play when speaking about the sharing of Federally funded data. Various issues have been explored when working on the spatial scale and specific catches, so an individual's hot fishing hole is not instantly available to everybody. (Murawski)
- Lacking is an overall strategic plan that cuts across the different missions of all of the Federal, state, and local partners and in which fishery habitat restoration priorities would be consistent with and supportive of regional ocean planning priorities. (Kurkul)
- Council management actions have accounted for significant reductions in fishing effort since the mid 90's through limits on the numbers of days available to fish, the use of closed areas, trip limits and gear restrictions. (Hill)
- Trawl vessels in our region use the largest mesh in the world to reduce catches of juvenile fish. (Hill)
- An eight-inch twine top requirement, implemented several years ago on all scallop dredges, has reduced the bycatch of groundfish during scallop fishing. (Hill)
- There are inherent value judgments, which is why it is important to emphasize the quality and caliber of council people that are making those judgments. Non-scientists on the councils may not be qualified to make value judgments on the science. They are working with a lot of technical information and it is difficult to find people who assess policy and science, both. (Hill)
- Some people believe a number should be chosen and people should live by it—that it's a physical responsibility to a population of fish, if fish are our primary responsibility. There are a number of people who believe that our decisions should be modified based on impacts to communities and on practicality. (Hill)
- There are people who would have a problem with paying a fee to fish. The government would need to front the money because it is a large sum but then the industry would pay it back over, say 2- to 50 years at low interest rates. As it currently exists, the industry cannot pay up front. (Goethel)
- No one is asking to end all regulations. But, when existing regulations are working and the stocks are rebounding, why not stay the course for a while? What is the point of imposing even more severe regulations in an attempt to reach what may prove to be unattainable targets a few years earlier? This year, fishermen in the Northeast are faced with the toughest reduction in fishing efforts in two decades. These unnecessary reductions will devastate inshore fishing fleets and local fishing communities. [discussion provided] Telling fishermen that they must rebuild stocks to reach harvest levels above historic sustainable maximums is sheer folly. It pulls the road to recovery right out from under the industry, which has endured many restrictions and closures to get there. (Sanfilippo)

- The people of the Aleutian Islands only have the sea. They understand the need for conservation but have trouble understanding why they must conform to a "Walt Disney" view of their world. (Tillion)
- Legislating morals is only a little easier than legislating intelligence. A law cannot be written that says they will come up with the right answer. It would be difficult to have public records to justify why all decisions are made, and hold the science committee accountable. (Tillion)
- Alaska has many closed areas—some are larger than Indiana, larger than Maine. This was not done because environmental interests came and forced it. They were closed long before that. (Benton)
- One of the perverse results of the litigation gridlock is that the good work on bycatch reduction, habitat protection, and other kinds of actions that the Sustainable Fisheries Act requires has been stopped due to limited staff and other resources. (Benton)
- One of the most controversial issues lately has been the crab rationalization that has quota shares that go to processors and harvesters, to ensure that deliveries go back to communities that historically participated and also recognized and gave a stake in the fishery to skippers and crew. The most controversial is the role of processors. [discussion provided] (Benton)
- The Alaska state Constitution mandates sustainable fisheries management insuring the resource will be there for future generations. (Stevens)
- Creating a new way of doing business, with Congressional involvement, is possible. The key to the Magnuson Act was regional participation. That was a new way of business at the time. There is now hands-on-management on a regional basis. (Stevens)
- The current Community Development Quota (CDQ) program is a successful program. The Coastal Villages Region Fund (CVRF) has been able to participate in the program with its current goals, rules, and regulations, and has enjoyed many successes. CVRF administers the Community Development Plan (CDP) for 20 of the 65 communities currently participating in the CDQ program. These communities are in Alaska along the coast of the Bering Sea. The CVRF Board of Directors is made up of one fisherman from each of these 20 communities. These men and women provide stewardship for the Company, and guide management to make investment decisions that incorporate their core values and beliefs. [discussion provided] (Crow)
- The people of Coastal Villages are participating in the Alaska Pollock fishery because it is very healthy today, and conservatively managed for tomorrow. This is just one example of how people in the coastal communities, in general, and the CDQ program specifically can enhance the process of continuing to protect our marine environment. The CDQ program has also proved to be a catalyst for increased cooperation and partnership between government agencies and local communities. (Crow)
- At-Sea-Processors Association (APA) employs more than 2,000 people, 19 vessels and harvests around 40% of Bering Sea pollock, the nation's largest fishery. Its main products are Pollock filets, surimi roe, and fish meal. They sell filets to the domestic and European markets and surimi roe and meal to the Asian markets. With help from the CDQ program, five of the six CFQ groups representing 23,000 Alaskans now own more than 25% of the fleet and they expect that they'll own a majority of the fleet within five years. The Pollock fishery has been like a long-term savings bond. (McCabe)
- With the help of the APA 10 cooperatives have now been formed by virtually the entire fleet in the Bering Sea Pollock fishery. To most participants and observers of the fishery, the cooperatives have been the biggest fishery management improvement since the extension of U.S. jurisdiction in 1976. They are successful because:
  1) A cooperative vessel operator has the ability to stop fishing when weather conditions make fishing too dangerous with the knowledge that the other parties to the contract will not catch the portion that's reserved under the contract for his or her vessel. This has been

one of the most significant improvements in the Bering Sea where even fishing in good weather is more dangerous than most other occupations.
2) We've formed a binding contract among all 10 of the Pollock cooperatives through which we agreed to work together to avoid salmon bycatch. During 2001 alone, this program is estimated to have led to the avoidance of more than 20,000 salmon, perhaps a third of the fleet's incidental salmon harvest.
3) There has been an increasing yield seen from each pound of Pollock harvested.
4) Monitoring enforcement has also improved under the AFA and Pollock fishing cooperatives. (McCabe)

- There is tremendous transparency in this system. There is a powerful incentive to fish cleanly because the public is going to know. We have an incentive program where the top three skippers in our fleet receive a cash award for being the cleanest. (McCabe)
- Prior to 1998, the story of our successful management had been marred by bitter battles over access to the catch levels set by the Council. Those battles were resolved after almost a decade of fighting by Congress in 1998 through the American Fisheries Act (AFA). [discussion provided] (McCabe)
- Our experience with what we call quota based management where the vessel heads out at the beginning of the year and knows how much fish it can catch has been extraordinary. We were a lot less affected by this recent Steller sea lion restriction because we had the luxury of a longer season and the ability to be more flexible in how we caught the fish. [discussion provided] (McCabe)
- The enactment of the Magnuson-Stevens Act: The issues of jurisdiction over ocean resources, including fisheries, in the area beyond the traditional three-mile territorial sea were new and the U.N. negotiations were far from completion in the mid-1970s. NOAA and the NMFS were given the regulatory authority to implement the fisheries management system in spite of a lack of experienced people in the Federal government. [discussion provided] (Leitzell)
- The Council system is here to stay and should remain in place. But the balance between NMFS and the Councils needs to be adjusted to restore a more healthy give-and-take in fishery management and conservation decisions. (Leitzell)
- Comments provided on the North Pacific fisheries management program, and the monitoring and catch accounting in the North Pacific. [discussion provided] (Leitzell)
- The Magnuson-Stevens Act fishery management system is not broken, but its implementation is flawed, at least in some parts of the country. Over the last two decades, the Councils have gradually obtained increasing decision-making power in practice. Recently, several national environmental organizations have taken an increasing interest in fishery management decisions and have sued NMFS over Council decisions. The mushrooming of litigation to over 100 lawsuits nationwide has put immense pressure on the NMFS-Council partnership, leading to almost complete collapse of that partnership in some regions. At the same time, the North Pacific Fishery Management Council and the NMFS Alaska Region have worked well together, demonstrating that the two-headed partnership can work. The North Pacific Council is a model of effective, transparent government. (Leitzell)
- Over the 25 years that we have dealt with Federal public partnerships, we've gotten to a point where we do need to give some more authority back to the Federal side of it, to NMFS. The councils have not been run over by the Federal government—the councils are strong and politically supported. (Leitzell)
- The Council learned a lot by going through the Steller sea lion process and the interactions between NMFS and the council improved. There was a transparent process and there was a committee established that worked. Even in the sea lion case once we got the interaction of the Endangered Species Act and the Magnuson-Stevens Act figured out at the council level, the process became better. (Leitzell)

- Separating the scientific decisions from the allocation decisions would be wise. (Leitzell)
- One example of what has been done at the Council level is with the pollock and cod—now they are required to all be retained. Whatever fishery they are caught in, you cannot discard them. We are looking at extending that kind of program to other species. We've banned bottom trawling in the Bering Sea so that the Pollock fishery is a very clean fishery—very, very low amounts of bycatch. (Leitzell)
- The problem with exceeding biological recommendations for ABC is that it changes the future. It's not that it's going to put that stock of fish in an endangered status, but it's going to change the future. Councils have to have the ability to make a decision that in a specific time frame a different rational, a different objective is paramount, that the ABC is not always sacred. (Leitzell)
- A general observation has been made: when NMFS or the councils suspect they will not like the answer to a particular question they go to great lengths to ensure the question does not get asked. This dynamic is particularly apparent in the discussions concerning the lack of standardized bycatch reporting methodology in New England and the North Pacific, and in the systemic failure of NMFS to comply with the environmental review provisions of the National Environmental Policy Act. (Van Tuyn)
- NMFS often does not provide an explicit justification for its decisions, thus providing little transparency to its decision-making, frustrating the public and precluding meaningful debate. (Van Tuyn)
- NMFS often ignores the express will of Congress, and will unilaterally modify its legal duties to give itself greater discretion. This discretion leaves NMFS vulnerable to undue political influence from commercial interests. (Van Tuyn)
- NMFS has little political strength to accomplish its mission—it suffers from an inferiority complex created by its basement-level placement within a non-germane Federal agency. (Van Tuyn)
- Time and again, NMFS and the Councils have revealed themselves to be incapable of implementing basic conservation-oriented actions when the best available information mandates such an approach. (Van Tuyn)
- Many of us have learned that you cannot separate allocation from conservation. And the best example for that is perhaps a total allowable catch that is below the allowable biological catch but is allocated to a bottom drawl fishery. This has cascading impacts through its habitat and increased bycatch. (Van Tuyn)
- The management council process is being hamstrung by NEPA and ESA related lawsuits. [discussion provided] (Winther)
- The longline fleet has successfully worked through a number of issues at the North Pacific Fisheries Management Council (NPFMC) resulting in rationalized and sustainable fisheries. The longline fleet has taken the initiative to reduce bycatch: the longline fleet has consistently shown its willingness to take the initiative to resolve difficult issues in a practical and effective manner. [discussion provided] (Winther)
- Appropriate use of ecosystem management and the precautionary approach: these terms have their place in fisheries management. However, these are also very broad terms without a clear working definition. (Winther)
- Co-management started in Alaska in 1977 when NOAA signed a co-management agreement with the Alaska Eskimo Whaling Commission (AEWC). The 1970 Endangered Species Act had classified the bowhead whale as endangered with as few as 700 animals. The classification meant the subsistence harvest had to be regulated. The whaling captains, who formed the AEWC claimed that there were more than 10 times that number. They stated that most of the whales, which were only being counted in open leads, were being missed and were passing under the ice. The agreement between the AEWC and NOAA has been a tremendous success because:
  1) The whaling captains were willing to share their knowledge

2) NOAA was willing to consider this traditional knowledge
3) The whaling captains were willing to accept quotas and had the resolve to strictly enforce these quotas on themselves
4) NOAA was willing to allow AEWC to participate and manage the subsistence harvest. (Johnson)

- In 1994 the Alaska Nanuuq Commission formed to participate in the negotiation of a polar bear treaty between the U.S. and Russia. There are now Alaska Native Marine Mammal Commissions for most species of marine mammals that are used for subsistence. [discussion provided]. The U.S. & Russia polar bear treaty was at the very highest level of the two governments. The Department of State and the U.S. Fish and Wildlife were involved on the Alaska side and the foreign ministry and the Administrator of Natural Resources on the Russian side. [discussion provided] (Johnson)
- Co-management has proven to be very beneficial, not only for the species, but also to the management agencies. [discussion provided] (Johnson)
- The problems with putting whales and seals at the NMFS, and walruses and polar bears at Fish and Wildlife is that in the NMFS is such a small user group. They are often responding to crisis situations like the whales on the east coast, for example. They don't have the time to really get involved in co-management because of their continuous crises mode. If they were unified, they should go in U.S. Fish and Wildlife because they have been more responsive. But, maybe we need to leave some of the species with the NMFS, like whales or others, and transfer those species that are involved in subsistence in Alaska to U.S. Fish and Wildlife. (Johnson)
- The Marine Conservation Alliance (MCA) is a new organization, established by fishing associations, communities, DCQ groups, harvesters, processors, and support sector businesses, to promote the sustainable use of North Pacific marine resources by present and future generations, based on sound science, prudent management, and a transparent, open public process. (Clarke)
- There were some 140 lawsuits against the NMFS Alaska Region regarding the Steller sea lions, so we've learned that it does not work not to follow the law. (Balsiger)
- We have learned that public opinion was that the Council and NMFS process was opaque and difficult for the public to follow. That was true but the process has been improved and no longer opaque. (Balsiger)
- We are making some human resource changes to respond to NEPA. It is the hope that we will evolve towards the right compliment of NEPA qualified people. Each of the regions has hired a NEPA coordinator. We have a national NEPA coordinator and in the Alaska region we have started the process to hire what we're calling a NEPA analytic team that will have a leader and some biologists, economists, and technical writers. [discussion provided] (Balsiger)
- In the process of developing the environmental impact statement the Council has put together a fairly large committee including environmentalists, industry people, and agency people contributing to try to identify the types of habitat that are affected by the different fisheries that we have, along with the impacts of those fisheries on the different habitats, and looking at what are called the habitat areas of particular concern. [discussion provided] (Balsiger)
- Responsible stewardship continues for Alaska fisheries. Components of our continuing resource stewardship are:
  1) Good science and frequent stock assessments.
  2) Firm catch limits.
  3) Conservative management.
  4) Monitoring and enforcement.
  5) Capacity restrictions and community protection.
  6) Mitigation of fisheries impacts on other elements of ecosystem. (Pautzke)

- The Council is moving towards an ecosystem-based management program for the last five or six years, from a focus on the individual species that they manage. Now they are looking at the broader community of species that are out there, particularly the ones that are very visible to everybody like the seabirds, the marine mammals, etc. Our Council is probably one of the first to incorporate a chapter in our SAFE document, which is a Stock Assessment and Fishery Evaluation document, which is required of all Councils. [discussion provided]. (Pautzke)
- There is a NEPA process the Council undertakes that is a complete analysis within the terms of NEPA and then they do a large ground fish environmental impact statement, which is an assessment to look at all of the dynamics of the ecosystem under various alternatives they could use for future management. Whether we try and wrap NEPA and ESA and all these other acts together, all those requirements into one, maybe under the umbrella Magnuson-Stevens Fisheries Act or whatever, we still need that information there to make a decision in a structured format. (Pautzke)
- It is not just trawls that affect coral. You also have long-liners out there, crab pots, anything that comes crashing down. It takes a lot of ship time and a lot of money and research to map out coral areas. There is a lot to consider when thinking of closing down areas to protect corals. Remember the Council already closed down areas to protect sea lions, to protect crab, and so as you start to pinch in on one particular area you send the fleet into another area and pretty soon you have cordoned off major areas in fisheries and concentrated that fleet into other areas to get their quotas. And then you can have extreme impacts on those areas where they are all concentrating. There needs to be protection but there needs to be balance too. (Pautzke)
- We are a long way from ecosystem management. But we've got to invest and understand an ecosystem if we're going to use technology that we now have that's more sophisticated that we had 30 years ago. We ought to know what the technology is going to do and what the impact of it will be for researching the ecosystem. (Ayers)
- NEPA is a tool. It's when we decide that we're going to use it as a weapon that we get into this power struggle and there are two places then that we can go. We either can go to the court or we can go to the Congress. Because the Steller sea lion case is about ecosystem management, it is forcing people to have the conversation. But right now we don't have the confidence as citizens that we have the research money to carry out the job and the way the U.S. is structured, the only way we can have the conversation is if there is a problem and it's triggered by either ESA or NEPA. NEPA may or may not need to change, but that's not the real problem. The real problem is that we must shift the paradigm. We must invest so that we have the research to provide the information in order to make good decisions. (Ayers)
- There are many safety, conservation, economic, and social goals to be accomplished by rationalizing the crab fisheries of the Bering Sea. But care must be taken to ensure the program is fair and balanced, considering the needs of each sector of the industry. (Garner)
- Any system of allocation of quota or shares to harvesters has implications for the investors in the fishery, including the processing sector. (Garner)
- When the North Pacific Fishery Management Council considers converting the fishery in the Bering Sea to a 'individual fishing quota' managed fishery, the fishing season will become elongated and slower paced, allowing safety and conservation issues to be squarely addressed. (Garner)
- At the same time, however, harvesting capacity developed by vessel owners and processing capacity created by processors, will become surplus. These will have several implications that must be dealt with, including 'stranded capital' and transfer of revenues to other sectors that successfully bid on the now surplus capacity. (Garner)
- This is the first attempt (by any Council) to undertake a comprehensive rationalization plan; one that includes captains and crew, vessel owners, processing plan owners, and community interests. (Garner)

- The Bering Sea Fishermen's Association (BSFA) was established by fishermen from over 30 villages in western Alaska wanting to become more involved in the development of new fisheries and to help local fishermen gain full economic value from local commercial fisheries. The BSFA is directed by a 13-member board and has been involved in a variety of ventures to promote conservation and development of western Alaska fisheries. [Further description provided.] (Gillis)
- The Alaska Fisheries Development Foundation (AFDF) is a private, nonprofit organization chartered to assist the goals of the Magnuson-Stevens Act through working to fully develop the economic potential of sustainable Alaska fisheries. (Jones)
- The Marine Mammal Protection Act Reauthorizing Committee of the Indigenous Peoples Council for Marine Mammals (IPCoMM), recently proposed amendments to the Marine Mammal Protection Act that outline management before depletion, shared enforcement, and local co-management plans with Alaskan Native hunters and their tribes. (Riedel)
- IPCoMM, the primary stakeholders and users of Alaskan marine resources, are conducting research and sound science upon which to base management decisions. We are most proud of the Youth Area Watch Project, which combines the traditional knowledge of hunters with the scientific protocols that are being taught to students. (Riedel)
- Claims are made that Alaska's fishing industry is the best-managed fishery in the world. This is not true. (Quyana)
- The new North Pacific Fishery Management Council approved a rights-based quota system that will slow the fishery, improve human safety, reduce handling mortality of undersize and female crabs, and help rebuild weak and depressed crab stocks. [Further description provided.]
- In 1998, the American Fisheries Act established an alternative Individual Fishing Quota (IFQ) for the one-million ton Pollock fishery off Alaska. The Act established a closed-class of processors and, for the onshore sector, allows IFQs for fishermen who are in a cooperative with a single processor. [Further description provided.] Fishermen joined with processors to seek legislation to remove the 2004 "sunset clause" to make the Act permanent. In 2000, Congress extended the IFQ moratorium. The Alaska Crab Coalition has since worked with affected groups for an alternative management system. [Further description provided.] (Thompson)
- Most fisheries are unique and require unique management and allocation solutions. (Thompson)
- Disagrees with Senator Stevens that the policies have been fully implemented or have been successful in maintaining sustained yield. The Exxon Valdez oil spill and a record of crashing shellfish stocks and Anadromous fish species is clear evidence that these principles have not been properly implemented in Alaska and have not been the practice or effect throughout U.S. waters and certainly not international waters. (Lakosh)
- Keystone species must be protected and the Endangered Species Act must be applied. To a lesser extent, those species that are not keystone to sustaining of ecosystems may be degraded, but there must be a balance between sustained yield for use and sustained yield over time for sustenance of the ecosystem. There should be a balance between use—the right to use and ability to sustain. (Lakosh)
- There are three important words that have come out during these testimonies…stewardship, governance, and information research or data gathering. (Paine)
- There is a proposal to look at the effects on the Aleutian Islands of a fishery that is out there. That is the right place to do it. It should be done at a regional level; is should not be done at some Washington D.C. office with people who don't understand what really goes on at the fishery community level. This is an example that the Council process is working. (Paine)

- The Alaska Native Harbor Seal Commission has co-management agreement with NMFS and is responsible for mandating and protecting the things that are within the purview of those Federal agencies. (Sensmeier)
- The Alaska Coastal Communities Coalition has recently submitted a Saltonstall-Kennedy grant application for a project called Alaska Coastal Communities Observer system or ACOS. The basic premise of this project is to create a corollary database to existing statistical models that incorporate the incredible knowledge and observational ability that our communities have. There may be a pilot project within the Gulf of Alaska that can ultimately be applied around the nation. This system will create much better awareness on both sides, better dialogue, and immense educational opportunity for everyone, including regulators, teachers, scientists, students, fisherman, and the general public. (Vick)
- There is great concern about the increase in the cruise ship traffic to the Hubbard glacier in the Yakutat area. The National Park Service recently introduced legislations to limit that number to 107 because of the effect on marine mammals. (Sensmeier)
- The North Pacific Anadromous Fish Commission is an entity that was created to enforce the terms of the treaty that bans high seas driftnet fishing for salmon and to coordinate international research on Anadromous fish among the four member nations. The Commission is an example of one model of international cooperation. No one state, no one nation can really do the kind of research that is necessary to better understand our oceans. [discussion provided] Two years ago the Commission devised joint international research on the high seas where the four member nations' scientists would work together to better understand what has happened to the salmon in the North Pacific, and, more precisely, in the Bering Sea. That became known as BASIS, the Bering Aleutian Salmon International Survey. BASIS will provide critical information about what happens to salmon in the open ocean. This was not a mandate, but was something that nations voluntarily have agreed to do. It provides an effective mechanism for over a five-year period of time jointly conducting not only sampling, but also fundamental research upon which additional research among the nations can be based. (Ulmer)
- There exists no binding, centralized authority to compel cooperative fishery management on the Great Lakes. (Gaden)
- Together, the bi-national, national, and sub-national management agencies approach the Great Lakes from the same general perspective and with the same goals in mind. (Gaden)
- Many issues remain unresolved and new issues continually emerge. To assist fishery and environmental agencies in dealing with these problems, agencies, through the Joint Strategic Plan, have identified broad procedures that foster cooperation; consensus, accountability, information sharing, and ecosystem management. The Joint Strategic Plan is designed to be a bottom-up process, where management decisions are driven by science generated by field researchers. (Gaden)
- Discussion of background and current issues for: marine mammals; whaling; sea turtles; overfishing; ecosystem alteration; habitat impacts, and bycatch. (Rufe)
- Findings, goals and objectives for fisheries management and community impacts. (CSO)

PRESENTER RECOMMENDATIONS

- M-S Act needs to be retired; Need a new national Living Marine Resources Conservation and Management Act. (Paul)
- Consider ways to facilitate transfer of fishery management authority to give some species back to states to manage:
  1) Current process requires amending Pacific FMC Management Plan; can take a year or longer;

2) States better able to manage resources in timely manner and with better access to management process;
3) Develop streamlined process for transfer of authority for those species state is prepared to manage, e.g., CA nearshore groundfish. (Bunn)

- Authorize use of Individual Transferable Quotas (ITQs) and Individual Fishing Quotas (IFQs) for Council use as a management tool:
  1) Groundfish Strategic Plan: capacity reduction of 50%; ITQ first choice for implementing reduction.
  2) ITQs stop "race for the fish";
  3) Need standards to ensure quotas not consolidated. (Bunn)
- Need funding for management, enforcement and research; have a fee on all seafood sold in U.S. (Parravano)
- Key elements to any solution:
  1) Develop a comprehensive, integrated system to monitor key elements of ecosystem health; NOPP's Integrated Ocean Observing System good start;
  2) Develop new regulatory structures and enforcement mechanisms to reduce pervasive impacts on marine mammals; ones focused on habitat protection and on specific impacts rather than individual species;
  3) Develop a national policy to protect and restore marine ecosystems; historically efforts to protect living marine resources in oceans have not focused on sustaining the systems of which they are a part; fisheries management must move away from single species; non-consumptive uses of the ocean must be recognized, development of MPAs encouraged, coordinated national policy for protection and restoration of ocean ecosystems established. (Jasny)
- Fisheries management should be aimed at specific problems and have clear conservation objectives. (Dodds)
- Where Commission can help:
  1) Federal and state mandates do not work in unison, nor as ecosystem approach;
  2) Decision making authorities should be examined; councils and relationship with NOAA examined concerning the separation of allocation issues from conservation goals. (Hogarth)
- States and feds should decide together who manages what. (Shipman)
- Coral Reefs: 10 recommendations are provided.
- MPA's: 10 recommendations are provided.
- Marine Mammals: 10 recommendations are provided. (Dunstan)
- Sea turtles:
  1) Develop multi-agency ecosystem approach to turtle conservation w/focus on comprehensive conservation program to address all threats to endangered and threatened turtles. Include proactive strategies for preserving important habitats (refuges) and addressing open water threats, including threats posed by fishing, oil and gas development, shipping, etc.
  2) Revisit present policy under Flood Insurance Program that fosters unwise coastal development by removing market forces from development decisions and drives much of current coastal habitat destruction in Gulf states.
- Marine Mammals: Call for comprehensive multi-agency research program by NMFS to determine impacts of shipping, pollution, and oil and gas activities on marine mammals, particularly whales, and methods for minimizing those impacts.
- Fisheries: Ten recommendations provided. (Sartou)
- Foster new and improved relationships with state partners:
  1) It should no longer be us (state) versus them (federal). Must work cooperatively;

2) Cooperative agreements detail who, what, when, where, and how;
3) Joint enforcement agreements between NOAA enforcement and Gulf states provide bi-partisan cooperative enforcement, maximize effectiveness of law enforcement, and enable inter-jurisdictional fisheries enforcement. Funding agreements provide additional benefit to nation by increased presence of officers who are federally commissioned to patrol. (Simpson)

- Commission should review laws to promote effective redeployment of oil rigs into eco-rigs. (Kolian)
- M-S Act and federal legislation regulating decommissioning of platforms should be reviewed in concert and brought into alignment in order to enhance protection of coral communities developing in Gulf. [list of potential related functions of post-production platforms provided] (Sammarco)
- Eliminate loopholes and strengthen M-S Act:
  1) Prohibit overfishing of all stocks, and include a margin of safety to compensate for scientific uncertainties;
  2) Make it high priority to avoid bycatch and require managers to further reduce this practice annually;
  3) Keep bottom trawling, dredging, and other damaging fishing practices from destroying sensitive seafloor habitats;
  4) Stop managing ocean wildlife as a series of unconnected parts and consider needs of ocean ecosystems. (Crockett)
- Review M-S Act and SFA implementation by NMFS. Redesign fisheries management (policies for cooperatives and community-based management systems). (Hopkins)
- Have delegated too much responsibility for setting limits, should be done scientifically, with FMC's. (Hopkins)
- Replace moratorium with national guidelines for IFQs. There are more than 60 IFQs in over 15 countries. (Hopkins)
- Process of developing marine mammal management solutions is hindered by lack of data; basic rules. (Reynolds)
- Stock Enhancement:
  1) Commit federal resources to research needed to resolve critical uncertainties about stocking effect and potential as fishery-management tool;
  2) Conduct enhancement programs using responsible approach such as outlined in American Fisheries Society Symposium 15 publication [10 step process provided]. (Haddad)
- Federal fisheries managers need to recognize and nurture buy-in and partnerships with coastal states in all phases associated with Sustainable Fisheries Act, including policy development, regulatory implementation, and enforcement. (Haddad)
- Right Whale Protection: Continue to support Southeastern Implementation Team and recognize it as model for other natural resource management issues. (Haddad)
- Promotion and marketing of the environmentally sustainable seafood products; supports adoption of gear changes. (Colom-Agaran)
- Pacific Seafood Research and Education Center will help bridge gap between seafood users, producers, and scientists. (Colom-Agaran)
- Improved coordination needed between:
  1) NMFS and WPRFMC, and FWS where there are overlaps in jurisdiction over marine portions of national wildlife refuges in NWHI and PRIA's;
  2) NMFS/WPRFMC and NWHI Coral Reef Ecosystem Reserve under NOAA-NOS (Raney)

- Promote the successful implementation of the NWHI Coral Reef Ecosystem Reserve by supporting the NWHI Executive Order, implementation of rules and regulations for the Reserve, revision of the Reserve Operations Plan to better incorporate the comments of the Reserve/Sanctuary Council, and pursuit of a NWHI Sanctuary that would complement and supplement the Reserve. A NWHI National Marine Sanctuary should include state waters. (Raney)
- Implement reforms of fishery management councils to broaden the range of stakeholder interests represented, including those representing the interests of the general public. (Raney)
- The U.S. must continue to work to maintain the moratorium on exploitation of whales and to expand the sanctuaries within which exploitation of whales will remain forbidden. [discussion provided] (Van Dyke)
- Improve and enforce basic fishery management laws so that we protect essential fish habitats, eliminate overfishing and stop wasteful bycatch. (Danson)
- Prohibit importation and processing of shark fins in U.S.
- Aquaculture native species only; help curb alien species proliferation.
- Make the Northwestern Hawaiian Islands a World Heritage Site.
- All national wildlife refuges in Pacific need consistent 12 mile seaward boundary to provide adequate foraging area for nesting seabirds.
- Migratory Bird Treaty Act: Need to extend DOI jurisdiction to entire U.S. EEZ. (Paul)
- Amend the M-S Act to focus on bringing fishing capacity into balance with the productivity of target populations and ecosystems in flexible ways that respond to natural variation and create incentives for conservation and stewardship. Lift ban on IFQs. (Fujita)
- Embed fisheries management within a department and agency with a mandate that reflects the understanding that natural ecosystems and biodiversity must be maintained in order to sustain fisheries. (Fujita)
- Congress should provide substantially increased funding for NMFS to develop and fully implement short, medium, and long term components of ecosystem management systems, including research. (Norse)
- Enact new legislation, the Marine Fisheries Commission Act (MFCA), to establish and fund a federal fisheries management commission to provide independent oversight of the fishery management councils. (Norse)
- Amend M-S Act:
  1) Enact Fisheries Recovery Act, HR 2570;
  2) Enact Ocean Habitat Protection Act, HR 4003;
  3) Insert language into M-S Act to give strong, clear, unambiguous biodiversity conservation mandate, put resource (not use) first;
  4) Change structure and composition of the regional fishery councils and staff [changes provided] so fishermen, processors, and others have major role in determining their advice on allocation of the allowable catch but none on determining allowable catch levels;
  5) Add language that states clearly to NMFS that councils are advisory bodies and NMFS must exercise ultimate regulatory authority;
  6) Add provision to establish strong and clear performance guidelines for councils. (Norse)
- Suggest oversight body for fishery management council process and restructuring councils so that allocation is separated from the determination of allowable catch. (Norse).
- Strengthen scientific basis of fisheries management and credibility of fishery science among stakeholders; improve stock assessments; enhance social science research; improve and expand data collection programs; re-examine research priorities; improve communication of scientific information to stakeholders. (Katsouros)

- Amendments to M-S Act are required [list of recommended changes provided]. (Mahood)
- Improve fishery management: NMFS needs authority to supercede councils when ineffective or potentially harmful decisions made; provide NMFS with clear mandate how to resolve conflicts. (Reinert)
- Develop a vision and common objectives for fisheries, and a plan for managing living marine resources to achieve those objectives: Involve educated public; make management decisions adaptive; monitor management results; provide incentives for conservation and efficient use of resources; integrate system of data collection, decision making, enforcement and monitoring. (Reinert)
- To extent possible fisheries management should be carried out through more expedient processes of states. (Ross)
- More could be done to improve states understanding of goals of ESA and to elevate states' role. (Ross)
- Use IFQs only in conjunction with other management tools and not as whole toolbox. A successful IFQ program will incorporate terms accommodating the specific fishery's criteria with mandatory national standards regarding quota allocation auctions, transferability restrictions (limits), and sunset provisions (expiration every 2-5 years) [discussion of each provided]. (Nash)
- Overfishing recovery plans should be in context of ecosystem plan so all interactions can be seen. (Sartou)
- IFQ's are a tool that can be used with certain constraints (but concerned about misuse by greedy people and privatizes public resource). (Sartou)
- Elevate living marine resources' status in international issues. (Simpson)
- Consider consolidation of all fisheries agencies in the federal government under a single agency: works for states. (Simpson)
- Gulf Council and council chairs suggest rescinding prohibition on use of ITQs so can be used as management tool. Allow each council to decide to implement ITQ program. Eliminate windfall profit for persons who first sell ITQ shares by adding language to allow federal government to collect windfall. Ocean Commission should support ITQ programs if they want to remove cost of buy-back programs from public sector and to reduce over capacity and excess effort of domestic fleets, and transfer that cost to industries affected. (Swingle)
- Amend M-S Act in three ways:
  1) Strengthen stewardship incentive- allow civil action;
  2) Help IFQ programs achieve their objectives-remove 3 percent cap;
  3) Ensure IFQ programs are achieving objectives; regularly review and evaluate benefits and costs. (Emerson)
- Develop vision and common objectives for fisheries, and a plan for managing living marine resources to achieve those objectives:
  1) Engage public in forthright discussion of what we want fisheries and ecosystems to look like;
  2) Goals of M-S ACT, MMPA, ESA sometimes contradictory and conflicting [examples provided]. (Rassam)
- Stop viewing fish as commodity; fish are wild animals and fishery management must be wildlife management. (Safina)
- Change mandate and composition of FMCs: limits and how many of what size fish caught should be determined by scientists and wildlife managers; must be required, in practice, to rebuild fish and avoid overfishing, with attention getting fines if not. Re-orient fishery management from extraction to rebuilding and stewardship. (Safina)

- Must manage fisheries to protect and rebuild overfished populations. Avoid politically expedient solutions like ocean wilderness proposals that severely restrict/eliminate public access to national resources. (Nussman)
- Remove subsides that encourage overfishing and distort market economies. (Safina)
- Whenever possible, fish farms should be located indoors. (Safina)
- Management must also serve demand side: consumers should know where their seafood came from; label seafood indicating how and where it was caught or raised. (Safina)
- Agency should develop a gear certification system. (Dobrzynski)
- FMP for spiny lobster is good model of cooperation, contains "Protocol and Procedure for an Enhanced Cooperative Management System." (Morris)
- Review Florida's new Fish and Wildlife Conservation Commission structure for restructuring federal fisheries management. (Morris)
- New England's cooperative research plans involving fishermen should be encouraged by Congressional funding. (Morris)
- Add ITQ's as management tool in Gulf of Mexico. Allow each Council to determine whether ITQ's would be a useful tool for their fisheries. (Morris)
- The process should be changed so Council's decision regarding status and conservation goals of the stock is taken first, management measures taken second. (Morris)
- Separate funds for monitoring, strategic research and assessments enough to reduce emphasizing one over the other.
- Reduce harvesting capacity and apply precautionary approach to address overfishing and declining fisheries.
- Create new Department of the Oceans with sub-agencies that would comprehensively address all human interactions with marine resources.
- Most important management change for marine mammals: adopt ecosystem management that explicitly considers foraging needs of marine mammals and other predators.
- Fisheries and Marine Habitat: Need sustainable fisheries management. (Shultz)
- Enact Fisheries Recovery Act, HR 2570. (Hayes)
- Enact the Ocean Habitat Protection Act, HR 4003. [discussion provided] (Hayes)
- Stop "clear cutting" the ocean floor. [discussion provided] (Hayes)
- Give managers the tools they need to keep functional: repeal ITQ moratorium and allow fisheries managers to consider use of this tool. [discussion of ITQs is provided] (Moore)
- Keep regional fishery management council system intact. [discussion provided] (Moore)
- The Estuary Restoration Act should be funded. (Fletcher)
- Believes there is a solution to the problems independent of a major reorganization of the agency. Increase the responsibility of the Scientific and Statistical Committees (SSC) by:
  1) SSC should be responsible for formulating the ABCs for all species under their management or proposed management
  2) SSCs should always be in attendance at Council meetings when TACs and ABCs are under discussion.
  3) Upward adjustments of the SSC established ABCs should be allowed only after a Council petitioned the Secretary of Commerce for an adjustment and subsequent authorization.
  4) SSC membership should constitute a reasonable balance between state, academic and Federal government scientists.

5) Power of the Secretary of Commerce to turn down petitions for increased harvest or a faulty management plan should be given a booster shot. (Alverson)

- The statistical committee should become stronger on major issues such as catches having been exceeded. The science is there but politics, not just in the Councils but also in the higher levels, overrode some of the decisions. The Council structure could remain basically as it is but the authority to establish the ABCs should be vested in the scientific group which is largely made up of state, Federal, and academic scientists, as well as some NGOs. If they exceed the proposed biological limits, they should go through an appeal process allowing them to go to the Secretary of Commerce, who will hopefully remain fairly strict. (Alverson)
- There should be holistic management that takes into account the consequences of our activities, not just on the target species. Must be clear whether effort is to preserve something at the species level, the genetic level, or population level, and each Council needs to know the rules. Should not make up their own rules. (Alverson)
- NMFS is engaged in two main approaches designed to meet the technical and policy challenges associated with salmon recovery planning: 1) establishing multi-stakeholder Technical Recovery Teams, and 2) participating in regional policy forums designed to foster participation from diverse interests in developing recovery plans. [descriptions and examples of both approaches are provided]. (Ruckelshaus)
- Retain current regional council role in terms of science and management decision making. (Brown)
- Support the use of ITQs as a management tool available to the regional councils. (Brown)
- When managing the numbers do not go to extremes. One number could close down every fishery and another number would not affect any of them. Important to remember we are working with people. Although the talk is in terms of fish management it is really about people management. Yet, information on how this is going to affect people is absent. Biological, economic and social information is needed. (Brown)
- Concerted efforts should be undertaken to be proactive in species conservation. (Ehrmann)
- Regional planning is needed to identify priorities for where we spend our limited time, money, and effort. Using TNC's regional plan model to identify areas that represent this nation's marine biodiversity is one model and mechanism. (Beck)
- The Commission recognize that fisheries management is much more than setting catch levels; provide for a method other than councils to make allocation decisions and find a way to break the "race for fish". (Hilborn)
- The Commission should recognize that if the U.S. fisheries are profitable, then the fishing industry could pay for research and management costs. (Hilborn)
- We must build long-term economic productivity of fisheries by introducing property rights, appropriately fund economics data and analysis, and improve the cost-effectiveness of management. [discussion provided]. (Hanna)
- The fishery management councils, and the scientific committee(SCC), need to have more direct control. The process is flawed and needs to be addressed. (Leaman)
- Must make fishery management a shared endeavor that respects the contributions and commitments of stakeholders to the process. (Leaman)
- Have important positive initiatives to help Federal agencies avoid the present litigious alternatives to addressing resource management. (Leaman)
- Let us encourage our children and crew to continue their educations and upgrade their fishing skills to become the thinkers and leaders of our fishing industry of the twenty-first century, the brains that will help us adapt to a constantly changing world. Make it a professional industry. (Spain)

- The Commission should, like the United Nations and Organization for Economic Cooperation and Development, take Transfer Pricing abuses and issues into full consideration. Similarly, it should establish an Ad Hoc Committee on Transfer Pricing in order to gather the information and gain the insights needed to properly deal with these accounting behavioral problems. (Taufen)
- Solicit testimony and evidence from the Internal Revenue Service, Seattle International Division, Large and Medium-sized Business Group experts, and the public and academia, about Abusive Transfer Pricing. (Taufen)
- Issue a report to the U.S. Senate on findings of the Ad Hoc Committee, to such ATP experts as Senator Byron Dorgan. (Taufen)
- Consider additional efforts by the GAO regarding the economic structure of the U.S. North Pacific seafood industry, and its ATP practices. (Taufen)
- The Fish Management Councils should act more in an advisory role. The idea should be that the secretary has the power to modify and amend fishery management plans, not simply reject or adopt them. (Wing)
- User fees should be increased. (Wing)
- Investigate a default fisheries management plan (FMP). Encourage looking into a baseline management plan that could be implemented in the case of emerging fisheries that gives a management framework to move along with until a more detailed FMP could be put into place. (Wing)
- Encourage the Commission to take action as soon as you can and not necessarily wait for the final report to make recommendations on ITQs. If you wait for the final report, the debate may be over. (Heasly)
- The idea that fishermen pay for all the science and the research that goes into maintaining the fishery, is a good one. One of the ways they can do that, especially in a quota system, is that they are given a guarantee of a specific amount of fish each year. You could accomplish this by imposing a fee to pay for the resource management. (Heasly)
- The solution to many of the region's fishery management problems lies with conservation engineering or the modification of fishing gear to minimize the impact on ocean bottom fisheries habitat, to reduce by-catch, and provide fishermen access to fishing grounds where they might otherwise be prohibited. The National Marine Fisheries Service and the regional fisheries management councils should support conservation engineering efforts. (Durand)
- The Federal Government should provide incentives to fishermen and gear designers to work collaboratively with a minimum of regulatory hurdles. (Durand)
- Provide a mechanism, through the Sustainable Fisheries Act re-authorization, to develop new models for fishery management decision-making. [Further description provided.] (Richert)
- Develop and apply better principles for fisheries management
  1) Recognize the benefits of precautionary management. The United Nations Food and Agriculture Organization has projected that fish catches could increase significantly in the future if overfishing is reined in now.
  2) Address the impacts of fishing on the environment—for example, reducing bycatch, and mitigating fishing's other impacts on the environment makes business sense as well.
  3) Make international fisheries management a bigger priority—our interests at home are affected in many ways by fishing that takes place far from our shores. (Reilly)
- Encourage the development of measures to address the problem of fishing fleet overcapacity. Consider the problems associated with current government subsidies to the fishing sector, and support the elimination of both domestic and foreign subsidies that contribute to unsustainable fishing. (Reilly)

- The regional capabilities to support management of living marine resources could serve as a model for the rest of the country, particularly as they relate to the development of observational capabilities through systematic surveys. (Murawski)
- Living resource recommendations: Congress should: 1) strengthen the Sustainable Fisheries Act; 2) authorize the development of resource rents for all major commercial and recreational marine activities to create a dedicated funding stream;, and 3) amend the CZMA to promote the development of inventories and identification of strategic coastal infrastructure. (Shelley)
- Maintain the regional organization of fisheries management and science. The character of our fisheries can only be maintained through local governance and the complex problems will be addressed most effectively by using the knowledge and information of fishermen who have chosen to participate in the process. (Hill)
- The Council's job would be more straightforward, and the industry and public would be better served, if Congress would allow the Council to make value judgments as to which standards might be optimized in a given management action. This was the originally intended purpose of the Magnuson-Stevens Act—regional Councils making regional judgments in developing fishery management plans. (Hill)
- Develop a more simplified process to accomplish meeting environmental standards, promoting transparency, and providing for full public participation. A legislative solution will fully resolve this issue. (Hill)
- Appointments to Councils should be made on the basis of a person's knowledge of the broad range of issues that now constitutes fisheries management, in addition to safeguarding the interests of fishing ports and gear types. (Hill)
- Councils should be allowed more flexible rebuilding timeframes in light of new and improved scientific information. (Hill)
- Urge the adoption of proper safeguards, tools, and funding, as well as the flexibility to accomplish the task of proposing a number of remedies, on a regional basis. (Hill)
- Convene an ongoing symposium of all stakeholders in the discussion, from institutions such as Woods Hole Oceanographic Institute and the Conservation Law Foundation to a contingent of the commercial fishermen themselves. (Berkowitz)
- The following items do not, at this time, have a clearly defined national policy and it is recommended that a policy should exist:
  1) Address capacity issues in commercial and recreational fleets. Need a census of fishing capacity and how much extra effort is needed. Then, create a policy to reduce excess capacity in an orderly manner instead of shifting it from fishery to fishery.
  2) Marine Protected Areas—The U.S. needs a coherent policy stating goals and objectives, stating no extraction of natural resources from these areas, defining what activities will be allowed on the ocean surface, and how to educate the public as to the benefit to the nation.
  3) National decision on individual fishing quotas and individual transferable quotas. The fishing industry needs to know whether or not IFQs and ITQs will be used as a tool of management and what the rules governing their use will be.
  4) Timely availability of fisheries data. The U.S. should set a date after which time all data necessary for management will be available within three months of collection.
  5) National policy on cooperative research.
  6) Establish meaningful management regime for trans-boundary stocks. Work with other nations.
  7) Educate American public on the effects of land-based activities on the oceans. Mandate Sea Grant or a similar agency to conduct educational campaigns explaining how many land based activities, such as filling of the tidal wetlands, fertilizer, pesticide and biocide runoff, even the improper disposal of birth control pills, are having serious and perhaps long term deleterious effects on our oceans. (Goethel)

- Reform the composition of the existing fishery management councils to expand the representation of stakeholders other than commercial and sportfishing interests. (Phillips)
- Clearly establish the authority to set target catch limits within the Federal fishery management agency rather than at the fishery council level. (Phillips)
- Manage fisheries based on data and not on theory. In this regard, it is imperative that fisheries are defined as "over fished" only when fishing caused the decline. (Sanfilippo)
- In order to address the long-term changes in the piscivorous finfish populations that represent a combination of offshore fish harvesting and inshore habitat loss/degradation, there should be interjurisdictional coordination between local/state/Federal agencies and even within a given governmental level cooperation between water quality agencies and those that oversee fisheries. (Dow)
- We must use science, not emotion, in the management of our living resources. (Tillion)
- The burden of proof needs to be on the side of conservation. This should be a very clear understanding and mandate. It's difficult to legislate that but that is the balance. (Benton)
- As far as recommending a structural change on the Magnuson Stevens Act, one suggestion is to look at having a requirement in the Act that very specifically says Councils will have a scientific and statistical committee, and it will be broadly constituted with multiple disciplines. Right now that is not in the Act, it is not really ensconced in law. Some Councils are more aggressive about employing that tool than others and that's part of the problem. (Benton)
- The way the Councils should use the advice that is given is difficult. It's sort of mutual terror, mutual trust. The Act should say that a group of scientists would set catch levels and that the Council should do the rest of the business. If that were to happen there would be a lack of accountability from the scientists to make sure that the data they use is accurate and the data is credible and that there is a transparent process. (Benton)
- The Commission's report should recommend that the Regional Fisheries Management Council system continue to allow those directly involved in the fishery to manage the resource responsibility but without second guessing by Federal officials. A regionalization concept preserves resources much better than does a national concept.
- The Commission can enhance and accomplish several of the charges in the Oceans Act of 2000 by incorporating the Western Alaska CDQ program into permanent U.S. policy. (Crow)
- The Commission and Congress should support removal of the restriction on the CDQ program, and adopt an exemption from the ownership caps for the CDQ participants. (Crow)
- Develop incentives that will allow the other regions of the country and other Councils to achieve sustainable fisheries within this framework. (McCabe)
- Require each Governor to submit no fewer than seven names for a Council seat and to provide balance in the list. Provide the Secretary the authority to reject an entire list and to request that the Governor submit a new list. (Leitzell)
- Require each Council to appoint a Science and Statistical Committee of no fewer than ten members, with membership from Federal and state agencies and from academic institutions. Require that a Council receive advice and recommendations from its SSC before taking final action on any matter and require that the SSC Chair certify that its advice has been given. (Leitzell)
- Reject any new requirement for additional peer review of NMFS research that supports fishery management and conservation decisions. (Leitzell)
- Add a statutory requirement that environmental and conservation groups be included in each advisory panel (AP) and that each AP consist of at least twelve members. Require that each Council receive advice and recommendations from its AP on each matter before the Council for final action and that the AP Chairman certify that its advice and recommendations have been given. (Leitzell)

- Revise the Act to provide NMFS with the authority to initiate a revised action to be acted upon by the Council. Following disapproval, if the Council does not approve a revised action within 60 days, the NMFS Regional Administrator on that Council may propose a revised action and the Council must vote on that proposal at its next scheduled meeting. (Leitzell)
- Revise the Act to require that the NMFS Regional Administrator and each Council Chairman agree to a written agenda for that Council for the subsequent year. (Leitzell)
- There is a recommendation, a legislative recommendation floating around, that scientific statistical committee recommendations should go to outside completely unaffiliated scientists for further peer review. Some people think the current process is not independent. Some of us believe that NMFS is the best in the world on this and that their science is straight forward and unbiased. (Leitzell)
- Ecosystem based management plans must include people. Ecosystem based management considerations, including socio-economic implications and traditional knowledge need to be incorporated into regional FMPs. (Stinson)
- Rights based fisheries management would allow harvesters and managers additional tools to meet increasing regulatory mandates. Federal fisheries in the Gulf of Alaska are being economically marginalized by entities with a more efficient market structure combined with the cumulative effects of severe environmental regulation that constrains our ability to operate. (Stinson)
- A national fisheries observer program should be instituted, based on an equitable cost structure, regional needs and the information requirements of specific fisheries. (Stinson)
- An ecosystem-based approach to fisheries management should be phased in reflecting recommendations by the National Ecosystem Principles Advisory Panel report to Congress. (Childers)
- Make habitat conservation a deliberate and central feature of our fishery management system. (Childers)
- Reform fisheries management to reward clean fishing practices through economic incentives to support a smooth transition from today's bottom trawl fisheries to less intensive practices. (Childers)
- Recognition of regional differences: what may work in one region of the U.S. may not necessarily make sense in another region due to many factors such as differences in ecosystems, population bases, or types of fishing fleet. (Winther)
- Support for the regional management council system: this has proved to be a successful process in the North Pacific in developing practical management measures while providing for conservation of marine resources. (Winther)
- A key element of sound fisheries management policy is an appropriate TAC setting process: the cornerstone of successful management is the ability to assess abundance and establish harvest levels that will provide for a sustained fishery. (Winther)
- The Commission is urged to strongly recommend continuation of the regional management council system. The proof that it can work is the track record of the NPFMC. (Winther)
- Replicate North Pacific successes [discussion provided]. (Clarke)
- Reduce bycatch and bycatch mortality. (Clarke)
- Manage fisheries through science, not litigation. [discussion provided] (Clarke)
- Anything that can be done to improve cooperation and communication is great. We cannot legislate intelligence and probably can't even legislate morality, but we can surely legislate communications. (Balsiger)
- Promote ecosystem-based management. (Balsiger)

- For something like fisheries where we do surveys on an annual basis and try to react to that continually accumulated scientific information, it is difficult to fit it into the NEPA process because by the time you go through all the steps—the public involvement, the development of alternatives, the drafts and final examinations and then make a decision—you have a new survey from the next year in place. A potential fix for that is that the Magnuson-Stevens Act itself contemplates a very public process that interacts a little more quickly than following the exact steps of NEPA. This is perhaps a method that could be used by itself outside NEPA to make decisions on a timelier basis. (Balsiger)
- The regional approach to fisheries management is robust. Each region has unique and complex issues and tensions that collide in the management process. They must be addressed regionally. (Pautzke)
- Recommend legislative changes that may prompt regional councils to move toward ecosystems-based management, but recognize that extensive information is needed to do it successfully. (Pautzke)
- The destruction of North Pacific coral and sponge habitat and the degradation of the Aleutians is an indicator of the failure of the current management paradigm, and underscores the need to move to a science ecosystem-based management approach to fisheries management. Establish an ecosystem-based management approach for fisheries management. (Ayers)
- Provide the North Pacific Fishery Management Council the tools needed to establish a comprehensive program designed to address the needs of all parties that might be affected by a (significant and needed) rationalization of the Bering Sea crab fisheries. (Garner)
- We need to begin to seek a common understanding among the multitude of management agencies that don't currently agree on priorities for managing our fish and wildlife. The obvious lack of agreement on what constitutes a healthy ecosystem is problematic. (Gillis)
- It is important for the Oceans Commission to understand and promote a unified vision for what "ecosystem management" means, and to ultimately answer the question "can an ecosystem be managed". (Gillis)
- Responsible, on-going fisheries development must remain a goal of U.S. ocean policy. (Jones)
- Oceans policy must provide the freedom and support necessary to solve problems and encourage development of underutilized stocks. It must be recognized that the ocean environment changes and so do the fish stocks within it. Policy and regulation must be flexible enough to allow reaction to new situations. (Jones)
- Oceans policy must also consider that increasingly the oceans will be looked at as the source for meeting the food supplies of an ever-expanding global population. (Jones)
- Support the proposed amendments to the Marine Mammal Protection Act regarding improvements to co-management and Section 119 of the Act. (Riedel)
- Support participatory involvement by Alaska Natives through the co-management process, which in part is based on our long history of traditional knowledge. (Riedel)
- Provide that NMFS—not Fisheries Management Councils—is responsible for the development of fishery management plans. [Further description provided.] (Sterne)
- Amend the Sustainable Fisheries Act, and appropriate sufficient monies into a newly established Fishing Fleet Capacity Reduction Fund, with which commercial fishing fleets in the U.S. EEZ can be retired. (Steiner)
- Management regimes must achieve restoration. (Davis)
- The Joint Strategic Plan is one of the best examples of cooperative fishery management anywhere on earth. (Gaden)

- Fisheries: We think we have to move away from single species management towards ecosystem managements and, again, we would like to see through these regional councils working with fishery councils, the implementation of tools that would allow for that kind of approach to sustainable fisheries. We are looking at how do you separate the scientific decision about how many fish ought to be caught from the process of dealing with whom should catch them. (Panetta)
- Recommend arresting the further depletion and restoration of marine living resources. Global overcapitalization of vessels engaged in fishing must be attended by international agreements. There is a need to augment the present international agreements to take a census of marine life presently underway under the aegis of CORE. (White)
- The OC must recognize that sound marine fisheries depend on healthy and sustainable fishery resources. (Radonski)
- Sustainable Fisheries Management—four recommendations presented. (Eichenberg)
- Concerning IFQs, we have a set of mandatory standards that we have been pushing for. (Weissman)
- Concerning nominations, the council is one thing that I think the Ocean Conservancy would definitely like to see. (Weissman)
- Specific recommendations are presented for: marine mammals; whaling; sea turtles; overfishing; ecosystem alteration; habitat impacts, and bycatch. (Rufe)
- Government fishery scientists and managers would likely find an increased level of cooperation, understanding and support if they dedicated more resources to public outreach programs. (Loftus)
- Coastal and marine restoration and conservation (includes four specific recommendations) (CSO)
- Fisheries management and community impacts (includes five specific recommendations) (CSO)
- Specific recommendations are presented. (Allen)

TOPIC: *LIVING MARINE RESOURCES*

KEY ISSUE: *Ocean-Use Planning and Ecological Zonation*

ISSUES RAISED

- In state and territory MPAs "no-take" does not mean "no impact" where tourism is critical component of economy. (Colom-Agaran)
- Description of the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve provided. (Johns)
- Majority of coral reefs of U.S. lie within NWHI and deserves special attention from the Commission. (Raney)
- "No take" zones in MPAs are a cost effective and efficient management strategy with demonstrated benefits for biomass increase and less demonstrated benefits for biomass overflow. (Etnoyer)
- Concept of adaptive management and notion of "phasing in" reserve networks piece at a time are sensible management options and deserve serious consideration. (Amoroso)
- Completing an innovative process of cooperation between state and Channel Islands NMS regarding the identification and potential designation of marine reserves in both state and federal waters. (Baird)
- Issues at the federal level that may benefit from CA experience:
  1) Federal authority to create "no-take marine reserves" outside of a marine sanctuary isn't clear;
  2) Terminology for marine protected areas needs to be clarified at the federal level;
  3) Federal process for establishing policy for MPAs must seek out stakeholder involvement from the beginning;
  4) Federal scheme for MPAs must include the critical elements: clear purpose and design for the site or system; plan for management and enforcement; plan for education and outreach; plan for evaluation and research. (Baird)
- MPAs are useful and flexible tools for solving multiple problems and achieving multiple goals. Marine reserves can help protect marine biodiversity [discussion with statistics provided]. Marine reserves can help achieve the primary goal of fisheries management: protection of sufficient spawning biomass to sustain fisheries. (Fujita)
- Marine reserves are more cost effective than harvest control for at least two reasons:
  1) Greater assurance that a given number of fish are actually protected;
  2) Each fish is likely to create many times more eggs within reserve because they are generally larger and older. (Fujita)
- Reserves can improve fisheries management and help change management from single species to ecosystem approach; particularly helpful where fishing mortality is not well known, like sport fisheries. Recent information indicates certain game species many times more abundant in reserves than in fished areas. Reserves help fill ecosystem gap in fisheries management by protecting representative habitat types. (Fujita)
- Clear mandate to establish marine reserves would be helpful as long as it didn't include specific siting recommendations; need lots of stakeholder involvement. (Fujita)
- Confusion and tension over MPAs comes from:
  1) Continuing uncertainty on the terminology used to define what is an MPA, or what activities will be prohibited if an MPA is established;
  2) Mistaken belief that there is some specific percentage of the marine environment targeted to be set aside from all use. (Hogarth)

- What are MPAs and how they are used:
  1) Term broadly used to describe specific marine areas given some sort of special protection; many types of MPAs and management practices; short-term and long-term protection. [detailed discussion of variations, purposes, and uses of MPA's is provided]
  2) If established, MPAs must include: enforcement of any conservation measures that have been enacted; and, monitoring of effectiveness to verify the site is fulfilling goals for which it was created. (Hogarth)
- Maximum stakeholder participation is an overarching need through all phases of MPAs. (Hogarth)
- Executive Order 13158 - [detailed description provided]. NOAA's FY 2002 budget contained $3 million to help implement E.O., same level requested in President's request for FY 2003. (Hogarth)
- Science is mixed as to MPA issues, depending on the question. Does science think a MPA would be useful tool to try? Yes. Important step for MPAs is to try to assure the independence of the scientific judgment. (Kennel)
- Thoughts about MPAs: One size does not fit all; region-based appropriate; reserve systems will prove to be an important part of whatever proposals Commission puts together. (Ford)
- As a result of MPA Executive Order, the Channel Islands National Marine Sanctuary asserted itself as a stakeholder and influenced consensus of forum. Sanctuary program's new role as stakeholder advocating a policy of percentages needs to be addressed. (Miller)
- Concerned about MPAs being used as fishery management tool too early on; destructive to the freedom of the people involved and the oceans. (Raftican)
- One-size-fits-all does not work; i.e., no fishing zones are broad-brush; often arbitrary closures. (Dodds)
- MPAs have clear role in protecting habitat. (Mahood)
- Clear that single-species approach does not work, SAFMC now considering MPAs. (Sedberry)
- Coastal and marine ecosystems of the southeastern U.S. and northern Caribbean are critically important, ecologically complex and geographically linked [discussion provided]. These critically important ecosystems are increasingly threatened by a combination of water quality degradation, coastal habitat destruction, and overfishing [discussion provided]. Most serious overall threat to ecosystems is fragmentation of management systems [discussion/example provided]. (Rader)
- Commercial and recreational fishing industry is familiar with, and has generally accepted use of MPAs as management tools, particularly for regulating gear use. Marine reserves where all fishing is prohibited is newer concept and less acceptable to industries, especially to certain elements of recreational sector. Currently states, NOS, USFWS, and NPS have authority to establish MPAs. If framework allows some other entity to create MPAs then some of industry will not be favorably disposed. Arguments on both sides can be made concerning effectiveness of reserves. (Swingle)
- Marine reserves are tools to protect ecosystems and give rise to productive fish and shellfish populations. (Hopkins)
- More marine fish stocks are fully or over utilized today than prior to M-S Act. Long-term sustainability of fisheries and ecosystem function requires new approaches; large, interconnected systems of marine reserves one tool. (Rassam)
- Less than one-half of one percent of U.S. waters are protected by marine sanctuaries. (Rufe)
- Provides typical criteria for selection of MPAs in categories: ecological; cultural; economic; feasibility. Appropriate site and design of MPAs should be strongly influenced by specific objectives. (Rufe)

- No country has good fishery management model. U.S. behind many countries in using MPAs. (Safina)
- There is a lot of good information that the Commission should look at concerning MPAs. Use of MPAs is not a conspiracy to kick fishers off the oceans. (Chandler)
- Marine zoning is similar to land-based zoning; both are predicated on recognition that some activities are not logically compatible and need separation. Differences: land-based zoning usually affects property owned by private citizens or the public; marine zoning affects areas that are deemed as "commons" with shared public access. (Causey)
- No disconnect between MPA and marine sanctuary management: confusion is over term MPA and marine reserve. Sanctuary is MPA and may, or may not, have marine reserve. (Causey)
- Single authority or jurisdiction for all MPAs, parks, etc. may have some advantage but many drawbacks. Multiple agencies can leverage and share resources and information. (Causey)
- The U.S. needs a national system of MPAs, including no-take reserves and ocean wildness areas, to bolster and sustain dwindling fish populations; to restore health of ocean ecosystems; to deepen understanding of the complexity of ocean life and our impacts on that life; and to ensure that our use of economically valuable marine resources is sustainable. (White)
- Science tells us MPAs work [a specific example is provided]. (White)
- The U.S. lags behind other countries in establishing MPAs. (White)
- Process of establishing national system of MPAs should incorporate guidelines:
  1) All stakeholders, not just fishing and conservation interests, must be involved in collaborative process from beginning;
  2) Education is a key first step; include primer on MPAs, lessons learned from other sites, and review of current status including available biological and socioeconomic information;
  3) Discussion should begin by exploring specific objectives;
  4) Scientific information is critical and should be referenced at every step of the process. (White)
- Sea needs wilderness areas too. [discussion provided] (Hayes)
- One of the potential roles of the marine protected areas is to use them as a tool, apart from the strategy, to help keep up with inadequate science. (Fletcher)
- The Surfrider Foundation's definition of a "fully protected marine reserve": A marine protected area that prohibits dredging, hooking, dragging, netting, blasting, drilling, spearing and dumping, has strict water quality protection provisions and is fully accessible to non-extractive vessel traffic and recreational use. (Evans, C.)
- Less than half of one percent of the U.S. exclusive economic zone is presently protected marine reserves. This is an atrociously small amount. (O'Keefe)
- A lot has changed in the last five years. Among other things, there is increased capacity to be more specific about our knowledge of the ocean and to be clearer about zoning boundaries, etc. (Reilly)
- The ecosystem is pretty efficient at growing fish if it's given half a chance, and if it's not overharvested. So a future of a completely engineered ocean zone is not particularly attractive or necessary as long as it is managed appropriately. (Shelley)
- The Sierra Club still supports the designation of Marine Protected Areas for both environmental and species protection and research. (Nelson)
- MPAs also have their place in fisheries management, if they are based on sound scientific research and fisheries management principles. MPAs seem more appropriate where a fish spends its whole life in that area. (Winther)
- There is much confusion over terms that apply to marine protected areas. Definition of terms is presented. (Weissman)

- The establishment of Marine Protected Areas may well be appropriate to address certain identified risks, but two cautions need to be borne in mind. First, if the at-risk species or eco-system is threatened by non-maritime sources. Second, enforceability must be a key criterion considered before adopting any new regulatory regime. (Collins)
- Difference between Marine Protected Area and refugia is explained. (Eichbaum)
- The MAC recognizes the value of MPAs as a fishery management tool as part of a comprehensive management plan and in the past has called for such protection over artificial reefs (then called Special Management Zones) constructed with private funds meant to be solely for the use of recreational anglers. The MAC does object to MPAs whose objectives are undefined and exclusionary. (Radonski)
- Marine Protected Areas (MPAs) are gaining wide acceptance as major tools of an effective ocean policy. These zones are effective fishery management tools because they reduce fishing mortality, leading to increases in abundance of spawning fish and enhancing yields in nearby fished areas. (Munson)
- Our National Park System is home to 50 park units with marine components, and has a statutory mandate to protect marine resources while providing for education and recreation. Marine Parks offer an excellent opportunity to serve as models for new marine management techniques. (Munson)
- EPAs proposal to establish a no-discharge zone for Florida Keys would prohibit the use of available technology for treating waste on recreational and other vessels. (Husick)
- There is much confusion over terms that apply to marine protected areas. Definition of terms is presented. (Weissman)
- Protecting critical coastal and marine ecosystems: Discussion of background and current issues for: coral reefs; and, MPAs and ocean wilderness. (Rufe)

PRESENTER RECOMMENDATIONS

- Support of strong management regime for the Northwestern Hawaiian Islands Reserve; at least for 2-3 years until better science and data can be produced to show that there has not been a measurable and constant decline in the fishery landings of the Reserve [detailed discussion and statistics are provided]. (Agard)
- Promote implementation of NWHI Coral Reef Reserve (Raney)
- Look at recent CA MPA activities as models:
  1) Established a clear authority and process for creating marine protected areas;
  2) Established a process to consolidate, clarify, and specifically re-define classifications for state “marine protected areas;”
  3) Redefined approach to establishing a master plan for MPAs, to seek out additional stakeholder and technical input;
  4) Defined area of interest in a regional manner captured ecological and oceanographic differences. (Baird)
- Developing objective criteria for MPAs will help avoid politicization of process. (Baird)
- Create legislative mandate for existing federal agencies or for new Oceans Department to protect marine biodiversity and ecosystem health with a national network of marine reserves, while allowing uses that are compatible with this overarching goal. (Fujita)
- Define distinct biogeographical provinces and inventory the nation’s marine biodiversity to support the development of a national network of marine reserves. (Fujita)
- Create marine reserve planning and research processes at workable scales, and integrate them at larger scales (e.g., community-based planning and management integrated with regional planning and management) using decision-support tools. (Fujita)

- Create legislative mandate for more funding for MPA management and research. (Fujita)
- Amend M-S Act to emphasize need to protect marine biodiversity and ecosystem health with marine reserves, (perhaps modeled after CA Marine Life Management Act and Protection Act). (Fujita)
- Amend M-S Act to reconfigure regional fishery management councils as ecosystem management councils to carry out this mandate. (Fujita)
- Reject any policies, such as the Freedom to Fish Act, that pre-empt the ability of the federal government or states to establish marine reserves. (Fujita)
- Commission should consider the following MPA recommendations:
  1) Have clear understanding of the goals and objectives of MPAs; create regional network of MPAs; rank according to effectiveness; identify gaps;
  2) Set realistic management objectives based on resources available;
  3) Take long-term approach to MPA management and resource conservation;
  4) Garner local community support and high level agency support for the MPA;
  5) Consider full range of management alternatives; employ multiple techniques based on goals and objectives. (Causey)
- Articulate quantifiable no-take targets for National Marine Sanctuary. Management needs a number or range of numbers. (Etnoyer)
- Establish a network of marine protected areas that includes a full range of ocean ecosystems. (Danson)
- Congress should pass, and the President sign, new legislation to establish a national system of fully protected marine reserves that protect, within biologically sound, viable borders, the "best" places in America's undersea lands and preserve representative samples of all ecosystem types in each of the nation's marine biogeographic regions. Primary purpose of system is to protect and recover biodiversity within America's EEZ. (Werny)
- Enact new legislation to establish a national system of fully protected marine reserves that protect, within biologically sound, viable borders, the "best places" in America's undersea lands and representative samples of all ecosystem types in each of the nation's marine biogeographic regions. Primary purpose of system is to protect and recover biodiversity within America's EEZ. [reasons why this would make a difference, and who should do it, are provided] (Norse)
- Resolve the science on reserves, either we are taking a community-based approach to the MPA E.O. or we are under a policy of minimum percentages [discussion provided].
- Develop a clear process for looking at an over all design for reserves along the West Coast [discussion provided]
- Create a comprehensive mitigation strategy for reserves' initial loss to fishery yield.
- Create regional data management councils where the community has independent technical support and oversight [discussion of each provided] (Miller)
- Strengthen habitat protection by establishing process to create MPAs that contain stronger water quality protection policies and end overfishing. (Wan)
- MPAs should start as community-based for buy-in and build from there, with monitoring of effectiveness. (Sedberry)
- MPAs will be an essential component of an effective ecosystem-based network in the Southeast. [discussion provided] (Rader)
- Amend existing federal and state laws to place increased emphasis on ecosystem protection; enact new laws to fill gaps in current MPA system; eliminate destructive fishing practices and other resource extraction activities in reserves; increase funding for, and research on, MPAs. Build national system of MPAs. (Rufe)

- Concept of zoning must be moved off the land into the sea; zone for fishing gear types. (Safina)
- Zoning: map sea floor according to habitat types; 80% should be zoned for various or mixed use; reserve boundaries based on sea floor maps and good science advice. (Safina)
- Make a firm and consistent commitment to the use of MPAs as a marine management tool. A decision must be made that an adequate national system of MPAs, including "no-take" and ocean wilderness areas, is essential to protecting the public interest and will be developed. (White)
- Enact new legislation creating a system of marine reserves that fully protect sample of all major ecosystems in nation's biogeographic regions. [discussion provided] (Hayes)
- Marine Protected Areas:
  1) Enact legislation to establish a National system of fully protected marine reserves that protect hotspots of marine biodiversity and the system of habitat types that will allow depleted marine resources to rebound.
  2) Support the continuation of the Northwest Straits Initiative.
  3) Marine Sanctuaries, like Olympic Coast NMS, need to identify and establish protected areas within their boundaries, both in intertidal and subtidal. (Fletcher)
- Congress should pass and the President should sign into law new legislation to establish a national system of fully protected marine reserves that protect, within biologically sound, viable borders, the "best places" in America's undersea lands. The primary purpose of this system is to protect and recover biodiversity within America's EEZ. (Evans, C.)
- The Federal government should speed up the processes for designating Marine Protected Areas and Marine Reserves, both through the National Marine Sanctuary Program and the fishery management council process. (Hamilton)
- Explore the possibility of extending the opportunities to preserve U.S. territory/land as Wilderness—to off-shore. (McCaffrey)
- Establish a networked system of marine protected areas and reserves. (Revell)
- Establish three additional National Estuarine Research Reserves located on the West Coast—in CA's Humboldt Bay, in Willapa Bay, and in a major port of the Puget Sound, such as Bellingham, Tacoma, Seattle, or Olympia—to analyze how ecosystems are affected by the human environment and provide a forum to promote public education and research. (Scranton)
- The Commission on Ocean Policy should take a proactive role in protecting ocean biodiversity and vital ocean ecosystems by creating a legislative mandate for the establishment of a national network of marine protected areas, including fully protected marine reserves, incorporating the local, statewide, and regional initiatives that are currently taking steps to develop small-scale networks of MPAs. (Taylor)
- Also recommended is the strengthening of the MPA Executive Orders to provide more funding for MPA management and research. It is only by gaining more knowledge of how our ocean ecosystems function that we can preserve bountiful and diverse oceans for the future. (Taylor)
- Look into zonal management and put more marine reserves in place as part of precautionary management for the future. Look at assessing capacity, both the capacity of the ecosystem to produce, and the capacity of humans to be able to extract from it. (Wing)
- We want marine protected areas, firstly, for intrinsic value. The defense of the wilderness is an inherent part of the American character. They can also provide an insurance policy against overexploitation. So even if we predict wrongly how many fish we are going to have, then we will have some percentage where we haven't been fishing at all and those fish will be there to repopulate the other areas. (O'Keefe)
- The Commission should recommend that we enhance and expand our network of marine reserves to where it is a fully representative national network through the U.S. EEZ. (O'Keefe)

- There should be areas designated out there that have that special designation of MPA so that not only the marine fish species are protected, but also the ecosystem as a whole. (Durand)
- Conserve the most biologically important marine areas:
  1) Use networks of protected areas to conserve the oceans' web of life.
  2) Focus on the tropical oceans—in particular, highlight the importance of the U.S. leadership in global coral conservation efforts and voice even stronger support for the International Coral Reef Initiative. (Reilly)
- Improve ocean governance: Establish marine zoning regimes, particularly in the near shore environment. (Reilly)
- There should be very clear scientific hypotheses associated with every MPA that is established. Research is needed for all MPAs. For biodiversity purposes, there have to be some no-take areas. (Shelley)
- A new ocean policy should include a national system of marine protected areas that would provide the framework for comprehensive management of critical areas and a forum for agency coordination as well as opportunities for the application of stewardship principles while balancing the increasing number of competing uses of ocean resources. [discussion provided] (Delaney)
- Establish a network of no-take Marine Protected Areas to protect and restore representative ocean ecosystems. (Phillips)
- There is a need for overall coordination regarding the Marine Protected Areas. (Buchsbaum)
- Some MPA management should be top-down and some should be bottom-up. MPAs should not be forced because 82% of the resource in the Aleutian Islands is in state waters. There are already areas closed there. On the other hand, coordinated work should take place with groups that are trying to find the Gorgonian coral beds because it's in our state and national interest to close destructive types of fishing in those areas. Areas should not be closed because of fear of Washington. (Tillion)
- The new national oceans policy should authorize and obligate the Secretary to designate marine protected areas. (Van Tuyn)
- Immediately identify special management areas in need of protection, and take action to protect them until research and proper management plans can be completed. (Ayers)
- Enact legislation to establish new and expanded Marine Protected Areas and Ocean Wilderness. [Further description provided.] (Steiner)
- Marine zoning for the protection of ocean resources is increasingly seen as a powerful management tool for addressing current problems we are facing. Zoning in the near shore environment is a relatively low-cost, effective management option of dealing with conflicting uses and interests. The concept of Marine Management Areas (MMAs) based on a comprehensive system of zoning can provide a variety of options for the management of species, habitats and uses of marine resources and waters. (Eichbaum)
- Concerning MPAs, I suggest that we must adopt a systems approach and make sure that we are tackling the right problem. In many cases, that problem is ashore. (Collins)
- Protected areas or reserves should be part of a toolbox and developed at the local level. (Panetta)
- We urge you to express strong support for employing Marine Protected Areas (MPAs) as tools to achieve resource protection and healthy marine ecosystems. (Munson)
- To ensure the long-term survival and health of our marine systems, we must create a strategically designed system of no-take marine reserves, covering a broad range of representative marine habitats, especially important to spawning. The Park Service, as one of the federal agencies focused on conserving wildlife for future generations, should play a leadership role in implementing such a system. (Munson)

- As far as MPAs, include ocean wilderness areas. (Weissman)
- Specific recommendations are presented for: coral reefs; and, MPAs and ocean wilderness. (Rufe)
- The moratorium on new sanctuaries must be lifted, and serious consideration to the creation of additional sanctuaries must be undertaken. Areas for consideration should include the east coast, and the Gulf of Mexico. (Cousteau)
- The National Marine Sanctuary Program should be given greater authority to use innovative management techniques, such as marine zoning. Implementing such policy changes would allow the NMSP to (actually) manage sanctuaries as ecosystems, with a strong science-based approach. (Cousteau)
- The governance structure within NOAA for the National Marine Sanctuary Program should be changed to allow the Program to have a more direct impact on communities and with its partners at the local, state and federal levels. Therefore, we strongly recommend the NMSP be elevated to 'line office' status within NOAA, making it equivalent to the Fisheries and Weather Services. (Cousteau)
- MPAs are of value as fishery management tool, but not when objectives are undefined and exclusionary. (Loftus)

TOPIC: *LIVING MARINE RESOURCES*

KEY ISSUE: *Conflicting Mandates*

ISSUES RAISED

- 35-40 longline boats have left after excluded from some fishing grounds because of incidental take of leatherback turtles; current fishery management efforts not working. (Colom-Agaran)
- Cooperation at working level of agencies outstanding, lacking at higher levels in Western Pacific primarily due to failure of Western Pacific Regional Fishery Management Council [Four reasons are listed]. (Raney)
- Consider ways to streamline council process and decrease "bureaucracy" associated with adopting regulations and implementing management decisions:
  1) Currently a double process for West Coast groundfish; council and then NMFS;
  2) Consider amending M-S Act to allow Council process to satisfy NMFS. (Bunn)
- Multiple mandates have become unwieldy, subjected the agency to litigation, are not responsive to current state of fisheries, and are inadequately funded [detailed discussion provided]. (Hogarth)
- Critics say council process has become overtly political; appointments and deliberations. (Katsouros)
- Politicalization has eroded balances between national policy and local concerns and between and among user groups and between Congressional oversight and executive action. (Katsouros)
- Administrative rulemaking is highly structured and an insider's game. (Katsouros)
- Critics argue Congress has exercised too much oversight through regulatory intervention, special legislation, line item appropriations and budget language. (Katsouros)
- Fishery governance is a complex and often confusing mix of local, state, regional and federal authorities. (Katsouros)
- Can take two years to do a plan under NEPA and by then stocks have changed. (Hogarth)
- Court challenge to summer flounder management plan lost citing 30 day statute of limitations; absurd to assume harm can be realized in 30 days. (Schill)
- U.S. imports swordfish that violate our own laws and regulations. (Schill)
- When M-S Act, ESA and MMPA are applied together they fuel litigation; conflicting mandates. (Shipman)
- Charter under the Atlantic Coastal Act was developed to guide interstate fishery management program and is not as prescriptive as M-S standards: has worked well for us. M-S Act has become so prescriptive it is imploding on itself. (Shipman)
- Marine Recreational Fisheries Statistics Survey is poorly understood or accepted by constituency it serves. (Radonski)
- Problem between ACFCMA and M-S Act is they employ different management philosophies: ACFCMA uses adaptive management; M-S prescriptive management. Must share a philosophy to be effective. Science is adequate however, government uses risk adverse strategy and commercial fishing industry uses risk prone strategy; same data but operate from opposite ends. (Radonski)
- Detailed discussion of contradictory laws. (Rassam)

- Fishery management measures proposed by Gulf Council must conform to 10 national standards of, M-S Act, NEPA, ESA, etc. This complexity is heavy burden for council; staff inadequate to handle requirements. Complexity of preparing documents pushes councils toward considering one species at a time in order to complete assessments. (Morris)
- Florida's federal conformance procedure works well and allows expedited rulemaking for Florida to conform to new federal rules. (Morris)
- Federal process is too slow when stock in question is commercially valuable and targeted. (Morris)
- Example of efforts to work through Byzantine collection of fishery regulations, including examples of obstacles and voids in understanding and research needed to set priorities. Red grouper is good example; Gulf Council has been working on an amendment for almost three years [a detailed description of the process is provided]. (Morris)
- There are a lot of overlap, conflict, and gaps between various acts. (Kurkul)
- There are conflicting laws—some conflicting objectives of different laws. The Endangered Species Act wants us to protect steller sea lions, and all marine mammals. The Magnuson Act wants us to provide economic opportunity, to provide protein for the nation's tables. The conflict between these two acts is in fact the proper role for the politics of the Council, for the working groups of the agency to address. We don't want to eliminate either law. We look forward to working through the conflicts. (Balsiger)
- The most significant constitutional infirmity in the Magnuson-Stevens Act is Section 304(h), which mandates that the Secretary of Commerce can repeal or revoke a fishery management plan only if three-fourths majority of the voting members of a Fisheries Management Council approves such an action. With the existing Section 304(h), we have officials (i.e., on Fisheries Management Councils) who are outside the Federal system of government exercising supreme authority over the manner in which the Act is implemented, by virtue of their veto power over the Secretary. The Act, therefore, runs afoul of the Appointments Clause of the U.S. Constitution. [Further description provided.] (Sterne)

PRESENTER RECOMMENDATIONS

- Require NMFS to provide timely notification to regional fishery management councils when there is a need to revise proposed fishery management plans and other actions to bring them in compliance with existing laws or executive orders, thereby saving taxpayer dollars and unnecessary adversarial contests with public interest groups. (Raney)
- M-S Act requires balance of interests, although this does not always happen. Might look at appointment process language for incorporation into Act. (Swingle)
- Need to look at NEPA process: too long and cumbersome. (Hogarth)
- Review 30 day statute of limitations for regulations and management plans published in federal register. (Schill)
- Implementation of the MMPA and ESA:
  1) Need scientific research community to obtain permitted exceptions to the laws when appropriate; review ESA and MMPA relative to scientific permitting;
  2) Permit requirements and time frames to obtain permits should be more consistent between the two permitting agencies, USFWS and NMFS. (Haddad)
- Revisit the Magnuson-Stevens Fishery Conservation Management Act and consider the consequences of policies that seemed to make sense at the time but need to be adjusted in keeping with today's realities. (Earle)
- Review and clarify environmental and fishery laws and regulations. (Brown)

- The Saltenstall Kennedy grant program should be re-designed. It should fund development, gear modifications, more science and collaborative research. (Wing)
- NMFS should heed the advice of the Take Reduction Team and place conservation measures for porpoises under the Marine Mammal Protection Act (MMPA) rather than the Magnusson Act. (Young)
- The Commission should look closely at the overall policy and reconcile some of the various Acts so that there is no "catch 22" on procedure. (Benton)
- The following recommendations are regarding existing policies which are contained primarily in the Magnuson Act and the Sustainable Fisheries Act:
  1) Make sure overfishing definitions are standardized and workable.
  2) Should have better definitions of essential fish habitat. Current definitions consider essential fish habitat to be any place where any given fish swims.
  3) Congress should rank the national standards. Congressmen often seem to have a clear intent as to what the national standards mean to them and how they ranked them in importance. This is almost always not the way that the NMFS has interpreted them.
  4) Clearly state what is known and not known relative to any given species.
  5) Address rebuilding schedules. Some of the rebuilding schedules for New England groundfish can only be met by virtually eliminating the commercial and recreational fisheries.
  6) Change the Council Oath. Council members should represent the fish, not be perceived constituencies of user groups.
  7) Create, within the Sustainable Fishery Act, the ability to test experimental management techniques.
  8) Create National Standards to consider ecosystem interactions. Management actions on one species will affect many others.
  9) Adequate funding—if the U.S. is serious about having well managed oceans, the taxpayer must get serious about paying for it. Our agriculture system receives billions of dollars and feeds much of the world. Our oceans receive millions, which allows little more than an ocean policy triage.
  10) Require bureaucrats to spend one week per year observing the industry they oversee. (Goethel)

TOPIC: *LIVING MARINE RESOURCES*

KEY ISSUE: *Effective Enforcement*

ISSUES RAISED

- Enforcement key element of management system; cooperative programs with Coast Guard and states working well. (Hogarth)
- Most glaring inadequacy in fisheries management process is government's inability, or unwillingness, to abide by Congressional mandates: example of summer flounder managed by a "target", resulting in recreational component overshooting target for 7 consecutive years. (Schill)
- Enforcement is an area in which new partnerships could be used. (Shipman)
- Major problems exist with enforcement capability of both NMFS and NOAA General Counsel's office: Not enough personnel to enforce and/or prosecute. (Swingle)
- Cannot see an active enforcement role for Councils; would like greater role in specifying penalties for violations of rules.
- Increase cooperative enforcement agreements with states and provide funds to states for that purpose. (Swingle)
- Currently Coast Guard role in fisheries enforcement is diminished because of 9/11, but needs to be regained at some point. (Loy)
- In Seventh Coast Guard District, 5 main concerns: enforcement of ship reporting system for North Atlantic Right Whale calving grounds; enforcement of fisheries management (i.e., Tortugas Reserve); protection of coral reefs; control of invasive species; illegal discharges of harmful pollutants [Description of each included]. (Carmichael)
- Better enforcement and new technology will help with some of the issues related to bycatch. Technology is a different issue than science. (Brown)
- Protecting our national resources through strong enforcement of environmental law is a top priority for the Department of Justice in Alaska. We carry it out in the following ways: [discussion provided on all three]
  1) Through efforts to protect the security of our marine resources, ports, waterways, and maritime commerce and transportation.
  2) Through the protection of our marine resources from vessel pollution.
  3) Through our fisheries enforcement efforts. (Burgess)
- Even prior to September 11th, law enforcement in Alaska worked steadily to prevent terrorist acts that could seriously harm marine resources and commerce. We work closely with the FBI, the Coast Guard, and other Federal and state law enforcement agencies to ensure the protection of our ports, waterways, and maritime commerce. [discussion provided] (Burgess)
- The existing law does provide that passengers or crewmembers who make reports of discharges on board can receive monetary compensation. For example, when All American Lines was prosecuted in 1998 for direct discharges of oil it was because an engine room crewmember came forward. The Federal District Court awarded that person half of the million-dollar fine for coming forward and reporting the violation. (Burgess)
- The Coast Guard fishery enforcement operations in Alaska emphasize four areas: maritime boundary line in the Bering Sea; high seas driftnet; domestic fisheries; and regulations on endangered species. [Further description provided.] (Underwood)
- Discussion and examples of on-water enforcement in Australia is presented. (McPhail)

PRESENTER RECOMMENDATIONS

- Assist states in marine fisheries and habitat protection law enforcement:
  1) Increase federal funding for ongoing joint cooperative enforcement agreements between NMFS and states to ensure wise management compliance and sustainable harvesting of commercial and recreational fisheries;
  2) Transfer technologies like remote sensing, GIS, and GPS from feds to states to assist in enforcement of fisheries and habitat protection laws. (Carpenter)
- Funding Joint Enforcement Agreements with states should continue. (Morris)
- Increased port security significantly reduced enforcement of fisheries and related environmental laws, including OPA. (Carmichael)
- There is a need for better support for a national fishery observer program – better funding, more standardized training, and more rigorous, and the whole program should be made to be more professionalized. (Spain)
- Each year we work on appropriations and we specifically try to get funding for VMS so that NMFS can conduct their enforcement. (Weissman)

TOPIC: *LIVING MARINE RESOURCES*

KEY ISSUE: *Other*

ISSUES RAISED

- Overcapitalization must be viewed from processors' and boat owners' standpoint; seems limited entry into fishery based on historical participation is fairest way to address overcapitalization. (Amoroso)
- Have tools to deal with overcapitalization. (Gutting)
- It is important to think in terms of not being in the restaurant business selling fish, but actually being in the fish business, operating restaurants. The difference is significant. Long-term sustainability of our oceans should be our focus—just as it is for a conservationist. In order to have our family businesses continue for future generations, it is important to think like conservationists when it comes to the seafood industry. (Berkowitz)
- One factor that has been wrongly ignored during these debates is the bottom-line healthfulness of seafood. Seafood is among the healthiest of all protein, and its importance in everyday diets cannot be undervalued. The Omega-3 fish oils found in seafood lower the "bad cholesterol", LDL, which often contributes to a dangerous buildup of plaque in coronary arteries increasing the risk of heart disease. A diet rich in seafood and low in red meat also decreases one's risk of colorectal and prostate cancer. (Berkowitz)
- To Alaska natives, subsistence is the most important issue after self-determination. Subsistence is not sport. Subsistence is what provides for our cultural, spiritual, and nutritional health. It gives you a perspective that you are part and parcel of the ecosystem, that you are participating in the events of nature. (Johnson)
- Our Alaskan villages depend on fish, wildlife and gathering for a majority of the food put on the table and to continue a relationship with the land and sea begun thousands of years ago. (Quyana)

PRESENTER RECOMMENDATIONS

- Focus laws and policies on habitat reclamation and preservation to ensure sustainable resources and provide incentives to reclaim lost resources:
  1) Provide federal assistance for failing coastal municipal sewage systems;
  2) Provide federal assistance for voluntary acquisition of non-state owned tidally influenced areas;
  3) Conservation Reserve Program should provide for conversion of agricultural lands to natural land cover and Wetlands Reserve Program for conversion of marginal/timberlands to original land cover. Provide federal buyouts and conversion to natural land cover throughout coastal zone;
  4) More clearly define wetlands and map rates/patterns of loss by type over past 30 years;
  5) Conduct and track on nationwide basis, by eco-regions, wetlands mitigation projects efficacy rates. Develop mitigation tracking programs that allow easy follow-up and enforcement;
  6) Study and develop policies on deforestation and other land cover conversion rates and impacts associated with biomass alterations on health of coastal, estuarine and ocean environs;
  7) Develop financial assistance program for immediate relief after natural coastal and ocean disasters, with thorough advance mapping, planning, and logistics for coastal zone in detail. (Carpenter)