



SEA GRANT CONTRIBUTIONS TO THE NATION IN

FISHERIES

ADDRESSING FISHERIES ISSUES IN THE MODERN ERA

The goal of the Sea Grant Fisheries Initiative is to provide the nation with information required for managing fisheries in an environmentally sensitive, economically sound and sustainable manner through an integrated research and outreach program. Sea Grant seeks to address fisheries issues in nine key areas (new approaches to fisheries management, population dynamics, socio-economics, advanced sampling technology, stock enhancement, essential fisheries habitat, harvest technology/conservation engineering, fisheries oceanography and Great Lakes fisheries) in partnership with state and Federal natural resource agencies and organizations and with stakeholders.

Sea Grant Produces National Benefits

Recent investment in Sea Grant fisheries programming has resulted in the following outcomes.

- An economic analysis of proposed regulations for the Maryland blue crab harvest for 2002 saved the processing industry \$4.5 million by allowing the importation of smaller legal crabs from other states.
- The incidence of the human pathogen *Listeria monocytogenes* in ready-to-eat seafood declined by 80 percent following studies to identify sources and successful control strategies.
- A study that combined side-scan sonar and a digital high-resolution sub-bottom profiler provided a reliable method for making detailed and reliable “3-D pictures” of shallow coastal water bottoms.
- Educational efforts by Sea Grant extension agents helped defuse serious tensions between Vietnamese fishermen and state and Federal enforcement agents in the northern Gulf of Mexico.
- Program and educational materials developed by Sea Grant specialists in the Great Lakes provided HACCP training to hatchery personnel and baitfish handlers to help prevent the spread of aquatic nuisance species.
- Meetings facilitated by Great Lakes Sea Grant extension staff produced a four-state consensus on commercial and recreational catch regulations.
- Sea Grant researchers were the first to discover that a major cause of PCB pollution in water bodies comes from atmospheric deposition.
- A Sea Grant researcher found that the standard practice of fishing for the largest size fish can change the genetic balance of the population.
- A Sea Grant initiative established a task force to coordinate research, communication and outreach on botulism that recently killed thousands of waterfowl and fish in Lake Erie.
- Sea Grant coordinated 900 volunteers who restored 53 oyster reefs at 20 sites along the South Carolina coast since 2000.
- Sea Grant research on the Kemp’s ridley sea turtle in the Gulf of Mexico provided valuable information on the population status and ecology that has contributed to the recovery of this endangered species.
- Data from Sea Grant research on critical nursery habitats for red drum in Galveston Bay are used by fishery managers to more efficiently manage this species and the habitats it utilizes.
- Sea Grant advocacy and support led to the creation of the Alaska Marine Safety Education Association, which trained 600 instructors and 200 teachers and produced a 50 percent reduction in fishing deaths in Alaska in the past 10 years.
- Sea Grant research on sediment samples in several large Alaska lakes documented historical boom and bust cycles in sockeye salmon escapement caused by fishing and climate change.
- The annual Maine Fishermen’s Forum, initiated and organized by a Sea Grant project in 1976, is the largest educational event of its kind in the nation.
- Research sponsored by Sea Grant led to the development and implementation of the Lobster Zone Management process in Maine, a new paradigm in fisheries management involving 7000 fishermen.
- Findings from a study of the genetic makeup of several important Atlantic groundfish species were important in the development of fishing restrictions to protect the stocks.
- Four Sea Grant Programs in the Northeast collaborated to promote and fund \$9.3 million in cooperative research and development projects with commercial fishermen and researchers.
- Sea Grant research demonstrated that acoustic pingers reduced harbor porpoise mortality from gillnet entanglements by 90 percent in the Gulf of Maine.
- The Atlantic sea scallop fishery benefited from a wide array of Sea Grant biological, economic, technological and outreach efforts that led to adjusted fishing regulations, more equitable enforcement and increased revenue.

- Advice by Sea Grant extension staff and researchers led to improved technological efficiency, reduced mortality of animals and better stock protection in the blue crab fishery in Chesapeake Bay.
- Two Sea Grant programs partnered with state and Federal agencies to coordinate a massive research initiative to address lobster mortalities in Long Island Sound.
- Research results and other information provided by many Sea Grant researchers and extension staff afforded valuable and timely input to regulatory decisions by fishery management bodies.
- In close cooperation with commercial fishermen, vessel operating procedures and safety training courses were developed on the Atlantic and Gulf of Mexico coasts to control vessel insurance costs and save lives.
- Sea Grant published the award-winning "Guide to Marine Mammals & Turtles of the U.S. Atlantic & Gulf of Mexico," the only existing field guide covering U.S. Atlantic species of whales, dolphins, porpoises, seals, manatee and sea turtles.
- Sea Grant published the 588-page, peer-reviewed "Managing California's Living Marine Resources: A Status Report" with input from several hundred experts from universities, agencies and the private sector.
- Sea Grant worked with municipal authorities to construct artificial reefs from sports stadium rubble in the nearshore zone of Lake Erie that are estimated to attract 12 to 66 times more fish than surrounding areas and produce \$1 million of annual economic benefit.
- Research in the Great Lakes documented the biological pathway for contaminants from zebra mussels to round gobies to smallmouth bass and to humans, and outreach efforts encouraged catch and release fishing techniques to avoid human health problems.
- Research isolated a specific attractant from horseshoe crabs in Delaware Bay for developing an artificial bait for the eel and conch fisheries to replace the traditional use of horseshoe crabs as bait and thus

reduce fishing pressure on the greatly reduced crab population.

Building the Future on Successes of the Past

Sea Grant will build on its established record of accomplishment in fisheries of more than 30 years by collaborating with NOAA's National Marine Fisheries Service, other Federal agencies, state and regional fisheries agencies and organizations and the commercial and recreational fishing sectors in identifying the most pressing fisheries needs in coastal, marine and Great Lakes waters and in developing a research and outreach agenda aimed at prioritizing and addressing those needs. Collaborative initiatives to solve critical problems by merging physical, fiscal and intellectual resources of the partners will forge cost-effective and credible new information required for the wise management and promotion of sustainable U.S. fisheries resources.



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