

Fisheries Conservation and Management
Data Hungry - Partnership Intensive

Office of Science & Technology
National Marine Fisheries Service, NOAA
Silver Spring, Maryland

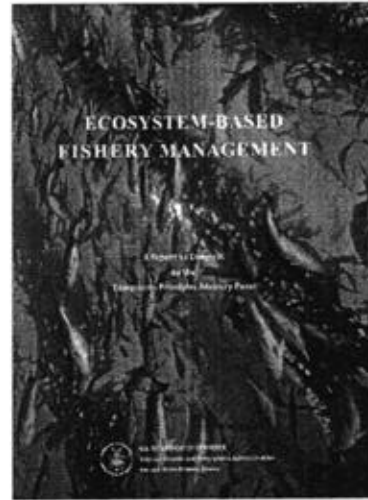
Mission

Stewardship of living marine resources for the benefit of the Nation through their science-based conservation and management and promotion of the health of their environment.



Data Requirements Are Projected to Grow Significantly

- ⇒ Application of ecosystem considerations in stock assessments and management advice
 - e.g., trophic dynamics, disease, migration
- ⇒ Changes in laws guiding marine stewardship create the need for more data
 - e.g., habitat, economic impact
- ⇒ Increase in legal challenges to science
- ⇒ Days at sea needed to meet growing data requirements > double (6,000 DAS) the current level



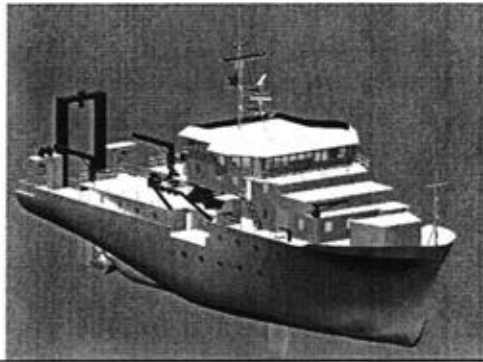
Meeting At-Sea Data Requirements

- ⇒ Fisheries/Oceanographic data requirements will continue to grow and will be met through
 - Dedicated FRVs
 - Academic research charters
 - Fishing industry charters
 - Observers
 - Satellite and airborne remote sensing
 - Data buoys
 - Commercial and recreational catch statistics

Fisheries Research Vessels

⇒ Design Specifications

- Length - 63.6 m
- Beam - 15.0 m
- Draft - 5.9 m (centerboard up)
- Radiated Noise - ICES curve
- Trial Speed - 14 knots
- Bottom Trawl Speed - 4 knots
- Accommodations - 39 (19 Sci.)
- Endurance - 40 days
- RV safety standards -
(USCG, SOLAS, USC, etc.)



FRV Design Drivers

Ship Design Standards

- SOLAS
- IMO
- MARPOL
- USCG
- Communications Gear
- Flooding Prevention
- Rescue Equipment
- Ship Stability Features
- Pollution Control Systems

Acoustic Requirements

- ICES Underwater Radiated Noise
- IMO/USCG Airborne Noise
- Sonar Self Noise
- Quiet Hull Form
- Skewed Propeller
- Electric Drive Propulsion
- Centerboard-mounted Sonar
- Acoustic Insulation

Mission Capabilities

- Hydroacoustic Fish Surveys
- Deep Water Trawling
- Deep Water Hydrography
- Deep Water Oceanography
- EEZ Fish Stock Assessment
- Marine Mammal Observation
- Range & Speed
- Commercial-size Trawl Gear
- Oceanographic & Hydrographic Winches
- Scientific Laboratory Spaces
- Crew and Scientific Accommodations
- Fuel Tankage
- Storage Volumes

Partnerships - An Essential Element in Meeting Our Growing Data Requirements

- ⇒ NMFS benefited from many partnerships working to meet its stewardship mission
- ⇒ In FY2000 NMFS partnered with
 - Nearly 120 academic institutions
 - Over 75 fishing industry, private and non-profit groups
 - Over 50 state agencies
 - Nearly 60 foreign and international entities
- ⇒ Role of partnerships will increase

Academic Partners - Nearly 120

<p>Arizona State University Ball State University Boston University California State University Cape Fear Community College College of William and Mary Colorado State University Columbia University Cornell University Coastal Carolina University Dartmouth College Duke University East Carolina University East Tennessee State University Eastern Michigan University Florida A&M University Florida State University Florida University Florida State University Hawaii University Harvard University Iowa State University Jackson State University James Cook University</p>	<p>Kansas State University Louisiana State University Massachusetts Institute of Technology North Carolina State University Nova Southeastern University Oregon State University Rutgers University Sonoma State University State University of New York University of Delaware University of Durham</p>	<p>University of Florida University of Hawaii University of Idaho University of Maryland University of Massachusetts University of Mississippi University of New Brunswick University of New Hampshire University of North Carolina University of Oxford University of Padua University of Puerto Rico University of Queensland University of Rhode Island University of South Alabama Woods Hole Oceanographic Institute Worcester Polytechnic Institute</p>
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Oregon State University
 RV Alpha Helix, CIFAR/survey to tag right whales, deploy acoustic recorders/Bering Sea

Rutgers University
 Bluefish migration and habitat
 Winter flounder habitat

University of Alaska at Fairbanks
 NMFS/Sea Grant Fellowship, adaptive sampling methodology
 Juvenile rockfish use of eelgrass habitat
 Fatty acid profiles as a predictor of marine mammal diets
 Role of phytoplankton in the distribution of hydrocarbons

Industry, Private & Non-Profit Partners >75

<p>ISBIO AZH/TAH Conservation Alaska Druggers Association Aquacord, Inc. Aquatic Farms, Hawaii ARS Conservation At Sea Processors Association Bandon Pacific Seafoods Bradford Fisheries, Inc. Ecosystem's Solutions Ecosystem Farms Industries Inc. CSC Technologies Communication Partnership for Science and the Sea Dabrock Fisheries Inc. Dabrock Farming Fisherman's Marketing Association FV Vestalgaard FV Anna D FV Nova FV Alaska Lizard FV Ocean Pioneer Greenfish Forum Inc. Gut and Tissue Marine Fishery Development Foundation Halimco, Seafoods Hella Sea World Research Institute International Gamefish Association Kenaco Aquaculture Corp. Lake Marine Tackle/Wiggins Inc. Marine Animal Clinic Midwater Trawlers Association</p>	<p>Marine Charity Committee Massachusetts Audubon Monterey Bay Aquarium Research Lab Pacific Whiting Greenpeace Coop Pacific Shrimp Scientific Fisheries Systems, Inc. Washington Fish Control Association Whiting Conservation Cooperative Fish & Shellfish Columbia Island Corporation Bahama Aquaculture Center for Marine Conservation Chesapeake, Inc. Children's Fisheries Chesapeake Bay Conservation Research and Education Dolphin Ecology Project Environmental Defense Fund Florida Power and Light</p>	<p>Herz Center Herring Island Authority Johnston Center John S. Turner Research & Center International Network Laboratory Joseph Walsh National Aquaculture Institute National Geographic Society National Geographic Ocean Fisheries National Fish and Wildlife Foundation Naval Weapons Institute Naval Research Defense Council New England Aquaculture North Carolina Private Company North Carolina Coastal Federation, Inc. Ocean Impact Co. Oregon Network Oregon Foundation Oregon Science Applications International Corporation Simons Inc. The Oregon Project Trecate Virginia Power Company William Anderson's, Wyoming World Bank World Wildlife Fund World Seafoods, Inc.</p>
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Alaska Druggers Association
Bycatch reduction gear experiments

National Geographic Society
UN Atlas of the Oceans

American Fisheries Society
Fisheries and Climate Change Symposium

International Partners - Nearly 60

<p>International Australia - University of Queensland Brazilian National Institute for Research on the Amazon Canada-BC Ministry of Environment, Lands and Parks Chile - Univ. China - Over Danish Institute of Marine Fisheries Ghana - Fisheries Laboratory Grand Cayman Island - Cayman Turtle Farm Greece - National Centre Japan - National Research Fisheries Agency Japanese Fisheries Japanese Hokkaido Mexico - Centro de Investigacion Cientifica y de Educacion Superior de Ensenada (CICESE) Instituto Nacional de la Pesca (INP), Mexico Morocco - Mozambique - Fisheries Research Institute Nigerian Institute For Oceanography & Marine Research Norway - Akvaforsk Institute of Marine Research Bergen, Norway Russian - Pacific Research Institute of Fisheries and Oceanography Russian (PINRO) Laboratory Soropqil, Center For Research in Oceanography</p>	<p>Japanese Hokkaido University (RV Oshoro Maru) Juvenile pollock recruitment processes research North Pacific salmon high seas research</p> <p>Medical Research Center, Edinburg, UK Fish Physiology/Endocrinology</p> <p>Dept. of Environmental Affairs and Tourism, South Africa Aquaculture</p>	<p>South Africa - Sea Fisheries Institute of South Africa Dept. of Marine & Coastal Management South Australia - Fisheries Department Spain - Ministerio de Agricultura, Pesca y Alimentacion, Taiwan (I) French Institute of China Commission for the Conservation of Antarctic Marine Living Resources Inter-American Tropical Tuna Commission Commission, Euro- Pacific Region Commission of Atlantic Tuna Commission of the Sea (CCS) International Pacific Halibut Commission International Whaling Commission North Pacific Anadromous Fish Commission South Pacific Forum Fisheries United Nations Food and Agriculture Organization Development Program Development Organization Educational, Scientific and Cultural Organization</p>
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Summary

- ⇒ Growth trend in NMFS data requirements is projected to continue
- ⇒ Top priority for FRVs is long-term surveys to maintain continuity
- ⇒ Plans for at-sea data collection exceed capacity of the NMFS fleet
- ⇒ Partnerships will play a growing role in meeting the NMFS mission