

PROGRAM CHARTER
FOR
AQUACULTURE

Program Manager: Michael Rubino

Ecosystem Goal Team Lead: Steve Murawski

1. EXECUTIVE SUMMARY

NOAA's Aquaculture Program is a matrix-managed, multi-line office program established in 2003 to develop a science and technology based regulatory framework for a well-managed and productive U.S. marine aquaculture industry. The Aquaculture Program's mission is to foster and manage environmentally responsible and sustainable marine aquaculture for food production and stock enhancement. This mission reflects NOAA's strategy to meet the growing world-wide demand for healthy seafood through a combination of sustainable commercial fisheries and robust domestic aquaculture production. The Aquaculture Program exists to:

- o achieve long-standing national priorities with respect to aquaculture research and management that were identified in the National Aquaculture Act of 1980, as amended, and the FAO Code of Conduct for Responsible Fisheries;
- o advance the goals of the aquaculture policies that were adopted by the Department of Commerce and NOAA in the late 1990s, reaffirmed at the 2007 National Marine Aquaculture Summit hosted by NOAA and the Department of Commerce, and included in the 10-Year Plan for Marine Aquaculture issued by NOAA in 2007;
- o implement the U.S. Ocean Action Plan approved in 2004 to implement the recommendations of the U.S. Commission on Ocean Policy; and
- o provide international leadership on the implementation of Article 9 of the FAO Code of Conduct and collaborate with international partners under bilateral agreements.

The Aquaculture Program supports NOAA's Ecosystems Mission Goal - to protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management. The program advances both of the Goal's outcomes.

- o The Aquaculture Program promotes healthy and productive coastal and marine ecosystems that benefit society.
- o The Aquaculture Program contributes to a well-informed public that acts as a steward of coastal and marine ecosystems.

Aquaculture Program activities occur primarily at NOAA headquarters and the NOAA Library in Silver Spring, Maryland; through Aquaculture Regional Coordinators at NOAA Regional Offices in St. Petersburg, Florida; Gloucester, Massachusetts; and Sacramento, California; at NOAA Fisheries laboratories in Milford, Connecticut; Manchester, Washington; Galveston, Texas; and Auke Bay, Alaska; and at the National Ocean Service laboratory in Beaufort, North Carolina. Additional aquaculture-related activities take place at other NOAA laboratories and regional offices and are coordinated with NOAA headquarters through matrix management and aquaculture points of contact in NOAA Fisheries. Additional Regional Coordinator positions will be established in other NOAA Fisheries regions.

2. PROGRAM REQUIREMENTS

A. Requirement Drivers

1) Legislative Authorities:

- a) The National Aquaculture Act of 1980, as amended - The authority given to the Secretary of Commerce in the National Aquaculture Act of 1980 is delegated to NOAA. This requires NOAA to coordinate with other federal agencies through the Joint Subcommittee on Aquaculture (JSA), to represent the Department of Commerce on the JSA's Executive Committee, and to participate in the development of a National Aquaculture Development Plan. Specific requirements for the Secretary of Commerce/NOAA include:
 - o consulting and cooperating with interested persons, Federal and State agencies, and regional fishery management councils;
 - o encouraging the implementation of aquaculture technology in the rehabilitation and enhancement of publicly owned fish and shellfish stocks as well as in the development of private commercial aquaculture enterprises;
 - o prescribing such regulations as may be necessary to carry out the National Aquaculture Development Plan; and
 - o providing advisory, educational, and technical assistance (including training) with respect to aquaculture to interested persons.

The Act also provides NOAA, as delegated by the Department of Commerce, authority to conduct tests and analyses for purposes of assessing the biological, technical, and economic feasibility of any aquaculture system.

- b) Coastal Zone Management Act of 1972, as amended - The Coastal Zone Management Act of 1972, as amended, requires NOAA to provide assistance to coastal states to support comprehensive planning, conservation, and management for living marine resources, including planning for the siting of aquaculture facilities within the coastal zone.
- c) Saltonstall-Kennedy Act of 1954, as amended - Under this Act, NOAA provides grants or cooperative agreements for fisheries research and development projects addressing any aspect of U.S. fisheries, including, but not limited to, harvesting, processing, aquaculture, marketing, and associated infrastructures.
- d) Magnuson-Stevens Reauthorization Act – Aquaculture activities are subject to review under this Act. Specifically this Act, along with implementing NOAA regulations:
 - o authorize the development of Fishery Management Plans that affect or regulate aquaculture
 - o requires NOAA to review activities in marine waters that may have impacts on a managed species and essential fish habitat
- e) National Sea Grant College Program Authorization Act of 1991, as amended – This Act, in part, provides the authority for NOAA to establish the National Marine Aquaculture Initiative (NMAI). Launched in 1998, NMAI has helped resolve the issues standing in the way of a more robust domestic and environmentally sustainable marine aquaculture industry. Since its launch, the NMAI has provided funding to address a broad range of topics, including aquaculture policy and regulation, offshore aquaculture, marine recirculating systems, shellfish farming, and new species research.

2) Executive Orders, Policy Decisions:

- a) U.S. Ocean Action Plan (2004) – On December 17, 2004, the Bush Administration released the U.S. Ocean Action Plan, which calls for the United States to advance offshore aquaculture by assisting the private sector in obtaining necessary Federal

agency approval for establishing an offshore aquaculture facility, and ensuring that offshore aquaculture enterprises operate in an environmentally sustainable manner that is compatible with existing uses.

NOAA developed and proposed the National Offshore Aquaculture Act of 2007 (S. 1609 and H.R. 2010) as a key step toward implementing the U.S. Ocean Action Plan. This act, or other similar marine aquaculture legislation, would provide the Department of Commerce clear authority to regulate offshore aquaculture and would establish environmental standards for siting and operating offshore aquaculture facilities. As called for in the U.S. Ocean Action Plan, any proposed legislation would give the Secretary of Commerce authority to:

- o issue permits and develop/implement a coordinated permit process for environmentally responsible marine aquaculture in federal waters in cooperation with other federal agencies;
- o develop environmental requirements;
- o establish an integrated, multidisciplinary, scientific research and development program to further offshore aquaculture technologies and industry development that are compatible with the protection of marine ecosystems; and
- o establish and conduct a research and development program for all types of marine aquaculture

The U.S. Ocean Action Plan was developed in response to the recommendations contained in the final report of the U.S. Commission on Ocean Policy, which called on NOAA to:

- o Act as the lead federal agency for marine aquaculture
 - o Design and implement national policies for environmentally and economically sustainable marine aquaculture
 - o Develop a comprehensive, environmentally sound permitting, leasing, and regulatory program for marine aquaculture
 - o Expand marine aquaculture research, development, training, extension, and technology transfer, including a socio-economic component
 - o Set priorities for research and technology, in close collaboration with the National Sea Grant College Program, states, tribes, academia, industry, and other stakeholders
 - o Work with the United Nations Food and Agriculture Organization to encourage and facilitate worldwide adherence to the aquaculture provisions of the Code of Conduct for Responsible Fisheries.
- b) NOAA 10-Year Plan for Marine Aquaculture - In response to a June 2005 request from NOAA's Marine Fisheries Advisory Committee (MAFAC), the NOAA Aquaculture Program developed the 10-Year Plan to frame the agency's vision and goals for increased development of sustainable marine aquaculture in the United States. The plan, which provides a broad framework for U.S. marine aquaculture, goals for the NOAA Aquaculture Program, and an assessment of the challenges the agency will face in its effort to reach those goals, was unanimously endorsed by MAFAC prior to issuance by NOAA.
- c) Department of Commerce Aquaculture Policy (1999) - The Department of Commerce Aquaculture Policy's mission is to create sustainable economic opportunities in aquaculture in a manner that is environmentally sound and consistent with applicable laws and Administration policy. This mission complements the Department's and NOAA's effort to restore and maintain sustainable wild stock fisheries in order to

maximize the benefits of U.S. coastal resources. The Department's mission also calls for aquaculture to make major contributions to the local, regional, and national economies by providing employment in a new and diverse industry and by creating business opportunities both here and abroad.

- d) NOAA Aquaculture Policy (1998) -The NOAA Aquaculture Policy (1998) calls for the development and implementation of a successful NOAA program to meet public needs for aquaculture development and environmental protection.
- e) Joint Subcommittee on Aquaculture (JSA) Research and Development Strategic Plan – JSA, the interagency coordinating body under the National Aquaculture Act of 1980, directs federal agencies, including NOAA, to support development of a globally competitive U.S. aquaculture industry by addressing five major scientific/technological goals:
 - o Improve the efficiency of U.S. aquaculture production
 - o Improve aquaculture production systems
 - o Improve the sustainability and environmental compatibility of aquaculture production
 - o Ensure and improve the quality, safety, and variety of aquaculture products for consumers
 - o Improve the marketing of U.S. aquaculture products
 - o Improve information dissemination, technology transfer, and access to global information and technology in aquaculture.

3) International Agreements

- a) FAO Code of Conduct for Responsible Fisheries (1995) - NOAA is responsible for implementing the United Nations' Food and Agriculture Organization (FAO) Code of Conduct for Responsible Fisheries, which calls for the United States to promote responsible development and management of aquaculture. Specific requirements include:
 - o establish, maintain, and develop an appropriate legal and administrative framework which facilitates the development of responsible aquaculture
 - o produce and regularly update aquaculture development strategies and plans to ensure that aquaculture development is ecologically sustainable and to allow the rational use of resources shared by aquaculture and other activities
 - o evaluate in advance the effects of aquaculture development on genetic diversity and ecosystem integrity, based on the best available science
 - o establish effective procedures specific to aquaculture to undertake appropriate environmental assessment and monitoring with the aim of minimizing adverse ecological changes and related economic and social consequences
 - o establish appropriate mechanisms to collect, share and disseminate data related to aquaculture activities to facilitate cooperation on planning at the national, subregional, regional, and global level
 - o ensure that the livelihoods of local communities, and their access to fishing grounds, are not negatively affected by aquaculture development
- b) Bilateral Agreements - NOAA has bilateral agreements for coordination and collaboration with other countries to enhance development of aquaculture and to engage in scientific exchanges, cooperative studies, and data and information exchange. These include:

- United States - Japan Cooperative Program in Natural Resources (UJNR) / Aquaculture Panel
 - United States - Norway Aquaculture Cooperation
 - United States - Canada - Norway Trilateral Cooperation
 - Korea Ministry of Maritime Affairs and Fisheries / NOAA Arrangement for Marine Science and Technology Cooperation (Aquaculture Panel)
 - United States - China Marine and Fisheries Science and Technology Agreement
 - NOAA Fisheries bilateral cooperation agreements with Chile, Mexico, the European Union, Vietnam and others where aquaculture has been an area of focus for information exchange, cooperative research, and discussion – if not resolution – of trade issues
 - Less formal aquaculture agreements with Israel and France
- c) Other Intergovernmental Organizations - NOAA plays a role in other intergovernmental organizations for coordination and collaboration with other countries to promote and coordinate marine research, enhance development of aquaculture and facilitate economic growth, cooperation, and trade. These include:
- The Committee on Fisheries (COFI), a subsidiary body of the FAO Council
 - Asia-Pacific Economic Cooperation (APEC)
 - International Council for the Exploration of the Sea (ICES)
 - The North Pacific Marine Science Organization (PICES)

B. Mission Requirements:

The following mission requirements are derived from the requirements in the drivers identified and described above:

- 1) Establish a comprehensive regulatory program for the conduct of marine aquaculture operations. Primary drivers are:
 - National Aquaculture Act, U.S. Ocean Action Plan, Magnuson-Stevens Reauthorization Act, NOAA 10-Year Plan for Marine Aquaculture, Coastal Zone Management Act, DOC Aquaculture Policy, NOAA Aquaculture Policy, FAO Code of Conduct for Responsible Fisheries.
- 2) Establish and implement a research and development program to: 1) provide the necessary scientific information to effectively regulate the marine aquaculture industry, 2) monitor and assess environmental impacts from marine aquaculture activities, and 3) foster development of appropriate technologies to support commercial marine aquaculture production and enhancement of wild stocks. Primary drivers are:
 - National Aquaculture Act, U.S. Ocean Action Plan, Magnuson Stevens Reauthorization Act, National Sea Grant College Program Act, NOAA 10-Year Plan for Marine Aquaculture, Coastal Zone Management Act, DOC Aquaculture Policy, NOAA Aquaculture Policy, FAO Code of Conduct for Responsible Fisheries, JSA Research and Development Strategic Plan
- 3) Conduct education and outreach activities to establish a well informed public on marine aquaculture. Primary drivers are:
 - National Aquaculture Act, U.S. Ocean Action Plan, NOAA 10-Year Plan for Marine Aquaculture, Coastal Zone Management Act, FAO Code of Conduct for Responsible Fisheries, DOC Aquaculture Policy, NOAA Aquaculture Policy, National Sea Grant College Program Act, and JSA Research and Development

Strategic Plan

- 4) Meet international obligations to promote environmentally sustainable practices for the conduct of marine aquaculture. Primary drivers are:
 - o International bilateral agreements, COFI, APEC, ICES, PICES, NOAA 10-Year Plan for Marine Aquaculture, FAO Code of Conduct, and JSA Research and Development Strategic Plan

3. LINKS TO THE NOAA STRATEGIC PLAN

A. Goal Outcomes.

The Aquaculture Program supports NOAA's Mission Goal #1 – Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management.

The Aquaculture Program supports the following outcomes for Mission Goal #1:

- 1) Healthy and productive coastal and marine ecosystems that benefit society
- 2) A well-informed public that acts as a steward of coastal and marine ecosystems

B. Goal Performance Objectives.

The Aquaculture Program directly supports the Ecosystem Goal Team's performance objectives to:

- 1) increase environmentally sound aquaculture production
- 2) increase number of fish stocks managed at sustainable levels
- 3) increase number of protected species that reach stable or increasing population levels
- 4) increase number of regional coastal and marine ecosystems delineated with approved indicators of ecological health and socioeconomic benefits that are monitored and understood
- 5) increase number of habitat acres conserved or restored
- 6) increase portion of population that is knowledgeable of and acting as stewards for coastal and marine ecosystems
- 7) increase number of coastal communities incorporating ecosystem and sustainable development principles into planning and management

C. Goal Strategies.

The Aquaculture Program supports all five of the Ecosystem Goal strategies:

- 1) Engage and collaborate with our partners to achieve regional objectives by delineating regional ecosystems, promoting partnerships at the ecosystem level, and implementing cooperative strategies to improve regional ecosystem health.
- 2) Manage uses of ecosystems by applying scientifically sound observations, assessments, and research findings to ensure the sustainable use of resources and to balance competing uses of coastal and marine ecosystems.
- 3) Improve resource management by advancing our understanding of ecosystems through better simulation and predictive models. Build and advance the capabilities of an ecological component of the NOAA global environmental observing system to monitor, assess, and predict national and regional ecosystem health, as well as to gather information consistent with established social and economic indicators.

- 4) Develop coordinated regional and national outreach and education efforts to improve public understanding and involvement in stewardship of coastal and marine ecosystems.
- 5) Engage in technological and scientific exchange with our domestic and international partners to protect, restore, and manage marine ecosystems within and beyond the Nation's borders.

4. PROGRAM OUTCOMES

The Aquaculture Program has three long-term outcomes:

- A. Well-managed and productive marine aquaculture in the United States
- B. A well-informed public that understands NOAA's aquaculture program and has access to information on aquaculture research and industry issues
- C. Worldwide adoption of environmentally sound marine aquaculture

5. PROGRAM ROLES AND RESPONSIBILITIES

This program is established and managed with the procedures established in the NOAA Business Operations Manual. Responsibilities of the Program Manager are described in the BOM. Responsibilities of other major participants are summarized below:

- A. Participating Line Office, Staff Office and Council Responsibilities:
 - o NOAA Fisheries operates regulatory programs to support the development of environmentally sound marine aquaculture, provides leadership for several international and bilateral cooperation initiatives, and provides grants and financial assistance to industry and other partners. Aquaculture scientists at two NOAA Fisheries Science Centers conduct in-house scientific research and development on aquaculture and stock enhancement and engage in collaborative research with academic partners. Aquaculture Coordinators in three NMFS Regional Offices guide marine aquaculture development in the various regions, handling coordination between state and federal aquaculture efforts, and providing technical advice on aquaculture initiatives undertaken by NOAA and other federal partners in the regions.
 - o NOAA Research supports marine aquaculture research and development through the National Marine Aquaculture Initiative, a competitive grants program that addresses key scientific issues in aquaculture and encourages collaboration among governmental entities, academia, the aquaculture industry, and non-government organizations (NGOs). Through the National Sea Grant College Program, NOAA Research provides direction and support to partners at state Sea Grant institutions engaged in aquaculture research, education, extension, and outreach. NOAA Research also provides leadership for a number of bilateral agreements with other countries, including student exchange programs.
 - o NOAA Ocean Service works directly with coastal states through the National Coastal Zone Management Program (CZMP). Through the CZMP, coastal states may receive assistance to plan comprehensively for aquaculture facilities in the coastal zone. Additionally, the Federal Coastal Zone Management Act of 1972, as amended, requires that federal actions that will have reasonably foreseeable effects on the land or water uses or natural resources of a state's coastal zone must be consistent with federally approved state coastal management programs. NOAA Ocean Service also conducts in-house scientific research on marine aquaculture and has extensive GIS mapping capabilities that will assist with the identification of particular zones for marine aquaculture.
 - o NOAA Satellites and Information plays an important cross-cutting role that supports both NOAA's and the public's interests by collecting, analyzing, and disseminating

general aquaculture information and NOAA Aquaculture Program information through the NOAA Library and several websites.

- NOAA Office of General Counsel – NOAA Office of General Counsel is responsible for providing legal advice to support the NOAA Fisheries' programs with respect to the development of regulations and legislation that supports environmentally sound marine aquaculture.
- Enforcement Program - Enforcement services are required for the maintenance of a fully operational regulatory infrastructure for marine aquaculture.
- Fisheries Finance Program – Assists aquaculture development by providing loans to aquaculture operations.
- NOAA Fisheries National Seafood Inspection Laboratory and Seafood Inspection Program – coordinate aquatic animal health management issues with the NOAA Aquaculture Program.
- Other NOAA Programs – Participate in permitting of marine aquaculture facilities through consultations and related regulatory responsibilities for stewardship of marine resources under multiple statutory authorities, including the Endangered Species Act, the Essential Fish Habitat provisions of the Magnuson-Stevens Reauthorization Act, the Marine Mammal Protection Act, and others.

B. External Agency/Organization Responsibilities:

- State and Federal agencies – Issue permits for aspects of marine aquaculture operations under multiple statutory authorities, including the Clean Water Act, the Rivers and Harbors Act, and other state and federal laws.
- National Sea Grant College Program– Sea Grant institutions throughout the country provide education, extension, and outreach on marine aquaculture.

6. END USERS OR BENEFICIARIES OF PROGRAM

- A. General public: The Aquaculture Program benefits the general public by: fostering environmentally responsible and sustainable domestic marine aquaculture production to meet the growing U.S. demand for safe, sustainable, healthy seafood; creating jobs for U.S. coastal communities; increasing regional food supply and security; helping restore depleted commercial and recreational marine species; and safeguarding marine resources and the marine environment. The Aquaculture Program also develops education/outreach initiatives that contribute to public understanding and appreciation of the role of aquaculture as a vital national food source and a fishery management tool.
- B. Coastal communities: The Aquaculture Program aids in increasing domestic aquaculture production, providing jobs, income, and sales opportunities to economically depressed fishing dependent communities, thereby maintaining working waterfronts. Specific beneficiaries include fishermen, seafood processors, boat owners, and seafood storage facilities.
- C. Aquaculture industry: Industry benefits from the development of a regulatory framework which enables the industry to operate in the Exclusive Economic Zone under known and predictable regulatory requirements. Development of regulatory guidelines for NOAA actions on aquaculture permits provides a basis for industry investment decisions. The Aquaculture Program assists NOAA in administrative and regulatory programs that affect marine aquaculture, provides research and development and scientific information for new products, species, and best management practices; and acts as a clearing house for information.
- D. Consumers: The Aquaculture Program benefits consumers by providing local, safe, and environmentally sound options for seafood products.

- E. Aquaculture suppliers: The Aquaculture Program provides additional markets for suppliers of products that support aquaculture operations, including producers of raw materials for fish feeds (e.g., soybean producers), equipment manufacturers, and marine technology companies.
- F. Seafood industry: The Aquaculture Program provides research and development for new products and species, and scientific and policy information.
- G. Commercial fishermen and recreational anglers: The Aquaculture Program provides information on potential effects of aquaculture on existing recreational or commercial fishing activities. The Program's hatchery and scientific work enhances existing wild stocks to improve the quality of the recreational fishing experience and to increase commercial fish stocks. It also provides opportunities for fishermen to use vessels, equipment, and skills to complement their commercial fishing activities and earn additional income by engaging in aquaculture.
- H. Fishery Management Councils: The Aquaculture Program provides information and technical advisory assistance on potential impacts on wild stocks and disseminates information to aid in understanding the implications of aquaculture development for fisheries management.
- I. Federal, state, and local government agencies: The Aquaculture Program provides information, expert advice, and research services to decision makers about aquaculture activities and rebuilding of wild stocks.
- J. Academia: The Aquaculture Program provides research grants to answer scientific questions, develop demonstration projects, and study impacts of aquaculture on the domestic economy.
- K. Resource managers: The Aquaculture Program provides information to federal and state resource managers about the role of aquaculture in ecosystem management, impacts on wild stocks and the environment, and use of aquaculture technology to accelerate rebuilding of wild stocks. The Program disseminates information to aid in understanding the implications of aquaculture development and stock enhancement, and provides guidance on marine aquaculture management, how marine aquaculture can complement commercial fishing, and the use of stock enhancement to rebuild depleted marine species and restore habitats (e.g., oyster beds).
- L. Homeland Security: Regional food supply provided by aquaculture production and wild stocks enhanced through hatchery releases will reduce reliance on imported seafood and the vulnerability of seafood to accidental and intentional contamination.

Appendix
ADDITIONAL REQUIREMENT DRIVERS

Legislative Authorities:

- Anadromous Fish Conservation Act
- Columbia River Basin Fishery Development Program, authorized through the Mitchell Act, Public Law 79-676, 16 U.S.C. 756- 757
- Commercial Fisheries Research and Development Act
- Endangered Species Act
- Fish and Wildlife Act of 1956
- Fish and Wildlife Coordination Act of 1934, as amended
- Interjurisdictional Fisheries Act
- Marine Mammal Protection Act
- Marine Protection, Research and Sanctuaries Act
- National Environmental Policy Act
- Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990
- Rivers and Harbors Act of 1899
- Title XI, Merchant Marine Act of 1936 as amended
- Water Resources Development Act