

CRS Report for Congress

Fishery, Aquaculture, and Marine Mammal Legislation in the 110th Congress

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Prepared for Members and
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Summary

Fish and marine mammals are important resources in open ocean and nearshore coastal areas; many federal laws and regulations guide their management. Bills to reauthorize and amend major legislation — the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) and the Marine Mammal Protection Act (MMPA) — were acted upon by the 109th Congress; the authorization of appropriations for both laws had expired at the end of FY1999. P.L. 109-479 reauthorized and extensively amended the MSFCMA; a bill proposing to reauthorize and amend the MMPA (H.R. 4075) passed the House, but received no further action.

Commercial and sport fishing are jointly managed by the federal government and individual states. States generally have jurisdiction within 3 miles of the coast. Beyond state jurisdiction and out to 200 miles, the federal government manages fisheries under the MSFCMA through eight regional fishery management councils. Beyond 200 miles, the United States participates in international agreements relating to specific areas or species. The 110th Congress has enacted P.L. 110-28, providing \$60.4 million for Pacific salmon emergency disaster assistance as well as \$110 million for hurricane recovery assistance to the Gulf of Mexico shrimp and fishing industries.

Aquaculture — the farming of fish, shellfish, and other aquatic animals and plants in a controlled environment — is expanding rapidly abroad, with more modest advances in the United States. In the United States, important species cultured include catfish, salmon, shellfish, and trout. The Administration has drafted legislation to promote the development of aquaculture in offshore federal waters; this proposal has been introduced in the 110th Congress as H.R. 2010 and S. 1609. The 110th Congress enacted P.L. 110-85 (H.R. 3580), authorizing the Food and Drug Administration (FDA) to enhance inspection of aquaculture and seafood products and requiring the FDA to report to Congress on environmental risks associated with genetically engineered seafood products, including their impact on wild fish stocks.

Marine mammals are protected under the MMPA. With few exemptions, the MMPA prohibits harm or harassment (“take”) of marine mammals, unless restrictive permits are obtained. It addresses specific situations of concern, such as dolphin mortality, primarily associated with the eastern tropical Pacific tuna fishery. In the 110th Congress, the House agreed to H.Res. 427, expressing the sense of the House urging Canada to halt its commercial seal hunt.

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Most Recent Developments

On October 30, 2007, the House Committee on the Judiciary reported H.R. 2830 (amended), including provisions amending the American Fisheries Act to modify fishing vessel rebuilding and replacement; to modify vessel exemptions; and to modify the fishery cooperative exit language; additional provisions would establish a national ballast water management program and national ballast water discharge standards as well as modify certain safety standards for commercial fishing vessels and establish a fishing safety research grant program. On October 25, 2007, the Senate Committee on Finance reported S. 2242, including provisions specifically authorizing aquaculture for supplemental agriculture disaster assistance. On October 24, 2007, the House Natural Resources Subcommittee on Fisheries, Wildlife, and Oceans held a hearing on H.R. 1187, promoting cooperative research and education efforts with commercial fishermen operating within the Gulf of the Farallones National Marine Sanctuary, the Cordell Bank National Marine Sanctuary, and the Monterey Bay National Marine Sanctuary, and prohibiting most aquaculture within these sanctuaries. On October 22, 2007, the House Committee on Natural Resources reported (amended) H.R. 1205, reauthorizing and amending the Coral Reef Conservation Act of 2000, and H.R. 767, authorizing grants to control harmful nonnative species at national wildlife refuges to protect and restore native fish and their habitat; the House subsequently passed both measures (amended). On October 16, 2007, the Senate passed H.R. 3093 (amended), providing FY2008 appropriations for the National Marine Fisheries Service as well as including a Senate floor amendment to amend the MSFCMA authorizing the Secretary of Commerce to maintain a list of vessels and vessel owners engaged in illegal, unreported, or unregulated fishing. On October 15, 2007, the Senate Committee on Foreign Relations reported S. 2020, amending the Tropical Forest Conservation Act of 1998 to provide debt relief to developing countries that protect coral reefs and associated coastal marine ecosystems. On October 9, 2007, the House passed (amended) H.R. 2185, amending the Tropical Forest Conservation Act of 1998 to provide debt relief to developing countries that protect coral reefs and associated coastal marine ecosystems. On October 4, 2007, the Senate Committee on Commerce, Science, and Transportation reported S.J.Res. 17, directing the United States to initiate international discussions and take steps to negotiate an agreement for managing migratory and transboundary fish stocks in the Arctic Ocean; the Senate subsequently agreed to this measure. On October 1, 2007, the House Committee on Homeland Security reported H.R. 2830 (amended). (Members and staff may request e-mail notification of new CRS reports on marine and freshwater fisheries, aquaculture, and marine mammal issues by contacting Gene Buck at [gbuck@crs.loc.gov] and requesting to be added to his notification list.)

Introduction

Increasing use of coastal and marine resources is driving proposals to alter relationships between environmental protection and sustainable resource management. Recent reports note declines in marine resources and shortcomings in the fragmented and limited approaches to resource protection and management in federal and state waters. A further concern is the increasing pressures and conflicts that arise from economic activity associated with continued human population growth in coastal areas. A common concern is habitat loss or alteration, due to both natural processes, such as climate variation, as well as development, changes in land management practices, competition from invasive species, and other factors, nearly all related to economic, political, or social interests. Congress faces the issue of how to balance these diverse interests (which may fall on various sides of any given controversy) while promoting the sustainable management of fishery and other marine resources.

In the final hours of the 109th Congress, the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) was reauthorized and extensively amended in P.L. 109-479.¹ Reauthorization of the Marine Mammal Protection Act (MMPA) was not finalized. The 110th Congress may consider measures to reauthorize the MMPA, address aquatic habitat concerns, modify or extend fishery disaster assistance, and address fishery-specific concerns, as well as conducting oversight of MSFCMA implementation.

Commercial and Sport Fisheries: Background and Issues

Historically, coastal states managed marine sport and commercial fisheries in nearshore waters, where most seafood was caught. However, as fishing techniques improved, fishermen ventured farther offshore. Before the 1950s, the federal government assumed limited responsibility for marine fisheries, responding primarily to international fishery concerns and treaties (by enacting implementing legislation for treaties, e.g., the Northern Pacific Halibut Act in 1937) as well as to interstate fishery conflicts (by consenting to interstate fishery compacts, e.g., the Pacific Marine Fisheries Compact in 1947). In the late 1940s and early 1950s, several Latin American nations proclaimed marine jurisdictions extending 200 miles or further offshore. This action was denounced by those within the United States and other distant-water fishing nations who sought to preserve access for far-ranging fishing vessels. Beginning in the 1950s (Atlantic) and 1960s (Pacific), increasing numbers of foreign fishing vessels steamed into U.S. offshore waters to catch the substantially unexploited seafood resources. Since the United States then claimed only a 3-mile jurisdiction (in 1964, P.L. 88-308 prohibited fishing by foreign-flag vessels within 3 miles of the coast; in 1966, P.L. 89-658 proclaimed an expanded 12-mile exclusive

¹ For a comprehensive summary of legislation in the 109th Congress on fisheries, aquaculture, and marine mammals, see CRS Report RL33459, *Fishery, Aquaculture, and Marine Mammal Legislation in the 109th Congress*, by Eugene H. Buck.

U.S. fishery jurisdiction), foreign vessels could fish many of the same stocks caught by U.S. fishermen. U.S. fishermen deplored this “foreign encroachment” and alleged that overfishing was causing stress on, or outright depletion of, fish stocks. Protracted Law of the Sea Treaty negotiations in the early and mid-1970s provided impetus for unilateral U.S. action.

The enactment of the Fishery Conservation and Management Act (FCMA) in 1976 (later renamed the Magnuson Fishery Conservation and Management Act and more recently the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA; 16 U.S.C. §§ 1801, et seq.) ushered in a new era of federal marine fishery management. The FCMA was signed into law on April 13, 1976, after several years of debate. On March 1, 1977, marine fishery resources within 200 miles of all U.S. coasts, but outside state jurisdiction, came under federal jurisdiction, and an entirely new multifaceted regional management system began allocating fishing rights, with priority given to domestic enterprise.

Primary federal management authority was vested in the National Marine Fisheries Service (NMFS, also popularly referred to as NOAA Fisheries) within the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce.² The 200-mile fishery conservation zone was superseded by an Exclusive Economic Zone (EEZ), proclaimed by President Reagan on March 10, 1983 (Presidential Proclamation 5030).

Eight Regional Fishery Management Councils were created by the FCMA.³ Council members are appointed by the Secretary of Commerce from lists of candidates knowledgeable of fishery resources, provided by coastal state governors.⁴ The councils prepare fishery management plans (FMPs) for those fisheries that they determine require active federal management. After public hearings, revised FMPs are submitted to the Secretary of Commerce for approval. Approved plans are implemented through regulations published in the *Federal Register*. Together these councils and NMFS have developed and implemented 40 FMPs for various fish and shellfish resources, with 9 additional plans in various stages of development. Some plans are created for an individual species or a few related ones (e.g., FMPs for red drum by the South Atlantic Council and for shrimp by the Gulf of Mexico Council). Others are developed for larger species assemblages inhabiting similar habitats (e.g., FMPs for Gulf of Alaska groundfish by the North Pacific Council and for reef fish by the Gulf of Mexico Council). Many of the implemented plans have been amended (one over 30 times), and three have been developed and implemented jointly by two or more councils. The MSFCMA was reauthorized in the final hours of the 109th Congress by P.L. 109-479, the Magnuson-Stevens Fishery Conservation and

² NMFS programs are described in detail at [<http://www.nmfs.noaa.gov/>].

³ Links to individual Council websites are available at [<http://www.nmfs.noaa.gov/councils/>].

⁴ For the 2005 Report to Congress on Council membership, see [http://www.nmfs.noaa.gov/sfa/reg_svcs/Council_Reporttocongress/05ReporttoCongress.pdf].

Management Reauthorization Act of 2006.⁵ The authorization of appropriations in § 7 of this act expires at the end of FY2013.

Today, individual states manage marine fisheries in inshore and coastal waters, generally within 3 miles of the coast. Interstate coordination occurs through three regional (Atlantic, Gulf, and Pacific) interstate marine fishery commissions, created by congressionally approved compacts. Beyond state waters, out to 200 miles, the federal government manages fish and shellfish resources for which FMPs have been developed under the MSFCMA. Individual states manage fishermen operating state-registered vessels under state regulations consistent with any existing federal FMP when fishing in inshore state waters and, in the absence of a federal FMP, wherever they fish.

Under initial FCMA authority, a substantial portion of the fish catch from federal offshore waters was allocated to foreign fishing fleets. However, the 1980 American Fisheries Promotion Act (Title II of P.L. 96-561) and other FCMA amendments orchestrated a decrease in foreign catch allocations as domestic fishing and processing industries expanded. Foreign catch from the U.S. EEZ declined from about 3.8 billion pounds in 1977 to zero since 1992. Commensurate with the decline of foreign catch, domestic offshore catch in federal waters increased dramatically, from about 1.6 billion pounds (1977) to more than 6.3 billion pounds. Total (U.S. and foreign) offshore fishery landings from the U.S. EEZ (i.e., federal waters) increased about 24% between 1977 and 1986-1988 to a peak of 6.65 billion pounds.⁶ Since this peak, annual landings have declined slightly and stabilized at around 6 billion pounds.

In 2006, U.S. commercial fishermen landed more than 7.8 billion pounds of edible, unprocessed fish and shellfish from combined state, federal, and international waters, worth almost \$3.9 billion at the dock.⁷ Imports of mostly processed products supplied 5.4 billion pounds, worth \$13.4 billion. U.S. consumers spent an estimated \$69.5 billion on edible seafood in 2006, with almost \$46.6 billion of that amount spent in restaurants and other food service establishments. In addition, marine recreational anglers caught an estimated 475.7 million fish in 2006, of which the retained catch was about 257.1 million pounds.⁸ In 2006, a nationwide survey estimated that recreational anglers spent more than \$40 billion each year pursuing their sport.⁹

⁵ A detailed summary of the Sustainable Fisheries Act, including an explanation of issues and legislative history, can be found at [<http://www.nmfs.noaa.gov/sfa/sfaguide/>].

⁶ This total includes both landings for human food and landings for industrial purposes, e.g., bait and animal food, reduction to meal and oil, etc.

⁷ For additional domestic commercial fishery harvest statistics, see [<http://www.st.nmfs.noaa.gov/st1/commercial/index.html>]. Statistics for 2006 are available at [<http://www.st.nmfs.gov/st1/fus/fus06/>].

⁸ Recreational fishing programs at NMFS are discussed at [<http://www.st.nmfs.gov/st1/recreational/index.html>].

⁹ Preliminary results of the 2006 survey can be found at [http://library.fws.gov/nat_survey]
(continued...)

NMFS reports annually on the status of fish stocks managed under the MSFCMA.¹⁰ For 2006, NMFS made determinations for 242 fish stocks and complexes,¹¹ finding that 48 (20%) of them were subject to overfishing¹² and 194 (80%) were not. In addition, NMFS made determinations for 187 stocks and complexes, finding that 47 (25%) were overfished¹³ and 140 (75%) were not. These numbers reflect a slight increase in the overfishing percentages compared to 2005 (when 19% were subject to overfishing) and a slight improvement in the overfished numbers compared to that year (when 26% were overfished).

In addition, NMFS developed a Fish Stock Sustainability Index (FSSI) in 2005 to evaluate progress nationwide in addressing overfishing.¹⁴ Out of a possible maximum FSSI of 920, this index has increased from 481.5 (third quarter of calendar year 2005) to 508.5 (first quarter of calendar year 2007).

Magnuson-Stevens Act

The MSFCMA was reauthorized in the final hours of the 109th Congress in 2006 by P.L. 109-479, the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006.¹⁵ Some of the major issues addressed by this comprehensive measure included:

- modifying requirements for the appointment and training of members of regional councils as well as the conduct of business by regional council committees and panels to enhance transparency of the regional council process;
- setting a firm deadline to end overfishing by 2011 and modifying how depleted fisheries are to be rebuilt;

⁹ (...continued)

2006.pdf]; final survey results are scheduled to be released in November 2007.

¹⁰ See [http://www.nmfs.noaa.gov/sfa/domes_fish/StatusofFisheries/2006/2006RTCFinal_Report.pdf].

¹¹ NMFS reviewed 530 individual stocks and stock complexes but had insufficient information to make determinations on all of them.

¹² A stock that is subject to overfishing has a fishing mortality (harvest) rate above the level that provides for the maximum sustainable yield.

¹³ A stock that is overfished has a biomass level below a biological threshold specified in its fishery management plan.

¹⁴ FSSI is a performance measure for the sustainability of 230 fish stocks selected for their importance to commercial and recreational fisheries. The FSSI will increase as overfishing ends and stocks rebuild to the level that provides maximum sustainable yield. FSSI is calculated by assigning a score for each fish stock based on rules available at [http://www.nmfs.noaa.gov/sfa/domes_fish/StatusofFisheries/2006/4thQuarter/Q4-2006-FSSI-Description.pdf].

¹⁵ For the White House press release, see [<http://www.whitehouse.gov/news/releases/2007/01/print/20070112-3.html>]; also see the White House fact sheet at [<http://www.whitehouse.gov/news/releases/2007/01/20070112-1.html>].

- increasing the consideration of economic and social impacts in fishery management;
- modifying research programs and improving data collection and management;
- increasing protection for deep sea corals and bottom habitat;
- implementing a pilot program of ecosystem-based management;
- promoting new gear technologies to further reduce bycatch;
- establishing national guidelines for individual fishing quota (limited access privilege) programs;
- modifying regional council fishery management plan procedures, including better coordinating environmental review under the National Environmental Policy Act (NEPA; 42 U.S.C. §§ 4321, et seq.); and
- strengthening the role of science in fishery management decision-making.¹⁶

Implementation of P.L. 109-479. NMFS has prepared a draft of tasks associated with implementing P.L. 109-479¹⁷ and has begun implementation:

- On January 19, 2007, NMFS published an emergency rule increasing summer flounder total allowable landings for the 2007 fishing year as provided in § 120(a).¹⁸
- On February 5, 2007, NMFS published a proposal to amend a Bering Sea/Aleutian Islands crab plan to authorize conversion of catcher vessel owner quota shares and processor quota shares to newly created catcher/processor owner quota shares, as directed in § 122(a).¹⁹
- On February 7, 2007, NMFS published a proposed rule that would increase total allocations of Pacific cod under Alaska's Community Development Quota program, as required by § 305(i)(1)(B)(ii)(I).²⁰
- On February 14, 2007, NMFS published its intent to prepare an environmental impact statement to analyze alternatives regarding annual catch limit and accountability measures and other overfishing provisions as required by §§ 103(b)(1) and (c)(3) and §§ 104(a)(10), (b), and (c).²¹

¹⁶ For additional highlights and commentary on this enactment, see [<http://cbbulletin.com/Free/199763.aspx>]; a detailed summary of enacted provisions is available at [<http://www.olemiss.edu/orgs/SGLC/National/Magnuson.pdf>].

¹⁷ Available at [http://www.nmfs.noaa.gov/msa2007/Reauthorization_tasks.pdf].

¹⁸ 72 *Fed. Reg.* 2458-2462 (January 19, 2007).

¹⁹ 72 *Fed. Reg.* 5255-5257 (February 5, 2007).

²⁰ 72 *Fed. Reg.* 5654-5674 (February 7, 2007).

²¹ 72 *Fed. Reg.* 7016-7019 (February 14, 2007).

- NMFS has also begun soliciting public comment on environmental review provisions, as directed in § 107.²²
- On April 12, 2007, NMFS published a definition of illegal, unreported, or unregulated (IUU) fishing, as directed in § 403.²³
- On June 11, 2007, NMFS published advanced notice of proposed rulemaking to develop certification procedures to address illegal, unreported, or unregulated (IUU) fishing activities and bycatch of protected living marine resource, as directed in § 403(a).²⁴
- On July 10, 2007, NMFS announced completion of the Klamath River coho salmon recovery plan, as directed in § 315(b)(1).²⁵
- In mid-August 2007, NMFS sought public input on guidance needed for the limited access privilege program (LAPP) provisions in § 303A of the MSFCMA as amended by P.L. 109-479, especially on the application of LAPP provisions and what topics might need interpretation.²⁶

Additional information on NMFS's implementation of P.L. 109-479 can be found at [<http://www.nmfs.noaa.gov/msa2007/>].

Congressional Action. In the 110th Congress, several bills would either amend the MSFCMA or modify how it would be implemented:

- H.R. 21 would reorient U.S. ocean policy (including fisheries), emphasizing ecosystem management, creating a Council of Advisors on Ocean Policy to advise the President, organizing Regional Ocean Partnerships, and developing Ocean Ecosystem Resource Information Systems; on April 26, 2007, the House Natural Resources Subcommittee on Fisheries, Wildlife, and Oceans held a hearing on this bill.
- H.R. 27 would designate the U.S. EEZ as the “Ronald Wilson Reagan Exclusive Economic Zone of the United States.”
- Several bills propose to amend either the MSFCMA (S. 741 and H.R. 2565) or the Coastal Zone Management Act (H.R. 3223) to establish a grant program to ensure waterfront access for commercial fishermen and aquaculture operators.
- H.R. 2625 would prohibit the commercial harvesting of Atlantic striped bass in coastal waters and the EEZ; H.R. 2939 would prohibit the commercial harvesting of Atlantic blackfish (tautog) in coastal waters and the EEZ; H.R. 3840 and H.R. 3841 would prohibit the commercial harvesting of Atlantic menhaden in coastal waters and the EEZ.

²² See [http://www.nmfs.noaa.gov/msa2007/docs/notice_to_public_5.pdf].

²³ 72 *Fed. Reg.* 18404-18405 (April 12, 2007).

²⁴ 72 *Fed. Reg.* 32052-32055 (June 11, 2007).

²⁵ 72 *Fed. Reg.* 37512-37513 (July 10, 2007).

²⁶ See [<http://www.nmfs.noaa.gov/msa2007/limitedaccess.html>].

- Section 301(b) of H.R. 2830 would amend the American Fisheries Act to modify fishing vessel rebuilding and replacement provisions in § 208(g); modify vessel exemption provisions in § 203(g); and modify the fishery cooperative exit provisions in § 210(b); on September 20, 2007, the House Committee on Transportation and Infrastructure reported, amended, this bill (H.Rept. 110-338, Part I). On October 1, 2007, the House Committee on Homeland Security reported, amended, H.R. 2830 (H.Rept. 110-338, Part II). On October 30, 2007, the House Committee on the Judiciary reported (amended) H.R. 2830 (H.Rept. 110-338, Part III).
- On June 29, 2007, the Senate Committee on Appropriations reported S. 1745 (S.Rept. 110-124), containing language that would (1) direct \$15 million from NMFS to alleviating economic impacts associated with the New England Fishery Management Council's Framework Adjustment 42 on the Massachusetts groundfish fishery; and (2) authorize the Secretary of Commerce to conduct a voluntary capacity reduction program to remove all commercial fishing capacity in the area of the Papahānaumokuākea Marine National Monument prior to June 15, 2011.
- As amended on the Senate floor on October 16, 2007, H.R. 3093 would amend the MSFCMA to authorize the Secretary of Commerce to maintain a list of vessels and vessel owners engaged in illegal, unreported, or unregulated fishing.

Pacific Salmon

Background. Five species of salmon spawn in Pacific coastal rivers and lakes, after which juveniles migrate to North Pacific ocean waters where they mature before returning to freshwater to spawn. Management is complicated because these fish may cross several state and national boundaries during their life spans. In addition to natural environmental fluctuations, threats to salmon include hydropower dams blocking rivers and creating reservoirs, sport and commercial harvests, habitat modification by competing resource industries and human development, and hatcheries seeking to supplement natural production but sometimes unintentionally causing genetic or developmental concerns. In response to declining salmon populations in Washington, Oregon, Idaho, and California, discrete population units have been listed as endangered or threatened species under the Endangered Species Act.²⁷ On September 13, 2006, a San Joaquin Restoration Settlement Agreement was announced, ending an 18-year legal dispute over the operation of Friant Dam, CA. This Agreement provides for river channel improvements and water flow to sustain Chinook salmon upstream from the confluence of the Merced River tributary while providing water supply certainty to Friant Division water contractors.

²⁷ For additional background on this issue, see CRS Report 98-666, *Pacific Salmon and Anadromous Trout: Management Under the Endangered Species Act*, by Eugene H. Buck; and out-of-print CRS Report RL31546, *The Endangered Species Act and Science: The Case of Pacific Salmon*, by Eugene H. Buck, M. Lynne Corn, and Pamela Baldwin, available from the author at [gbuck@crs.loc.gov].

To address some of their concerns about Pacific salmon management, the United States and Canada negotiated a bilateral agreement on Pacific salmon in 1985. However, by the mid-1990s, controversy stalled renegotiations to adjust cooperative management of these fish. This deadlock was resolved in June 1999 when a new accord was concluded. Annex IV of this bilateral agreement outlines, in detail, the fishery regimes to be followed by Canada and the United States in cooperatively managing the six species of anadromous Pacific salmon and trout. Annex IV expires at the end of 2008 and is to be renegotiated.²⁸

Congressional Action. Title V, Chapter 2, of P.L. 110-28 provided \$60.4 million for Pacific salmon emergency disaster assistance. In the 110th Congress, numerous other bills were introduced to address salmon issues:

- H.R. 24 and S. 27 would authorize the implementation of the San Joaquin River Restoration Settlement providing for the reintroduction of chinook salmon; the House Natural Resources Subcommittee on Water and Power held a hearing on H.R. 24 on March 1, 2007, and the Senate Energy and Natural Resources Subcommittee on Water and Power held a hearing on S. 27 on May 3, 2007.
- S. 264 would authorize federal participation in funding fish passage improvements at Wallowa Lake Dam, OR; this bill was reported (amended) on February 16, 2007, by the Senate Committee on Energy and Natural Resources (S.Rept. 110-23).
- Section 103 of H.R. 860 and S. 493 would designate salmon restoration areas in California.
- H.Res. 217 would express the sense of the House of Representatives concerning the 50th anniversary of the flooding of Celilo Falls on the Columbia River and the changes this action imposed on Native Americans; the House agreed to this measure on April 17, 2007.
- H.R. 1507 would direct the Secretary of Commerce to seek scientific analysis of federal efforts to restore salmon and steelhead populations listed under the Endangered Species Act.
- H.R. 1495 would require a feasibility study of fish passage improvements in Oregon (§ 4060) and would increase the authorization for appropriations for research on Columbia and Snake River salmon survival, including methods to reduce avian predation on juvenile salmon (§ 5022); this bill was reported (amended, new § 4062 and § 5023) by the House Committee on Transportation on March 29, 2007 (H.Rept. 110-80). The House passed this bill (amended) on April 19, 2007. On May 16, 2007, the Senate passed this bill (amended), excluding these provisions. On July 31, 2007, a conference report was filed on H.R. 1495 (H.Rept. 110-280), including the Oregon fish passage provision in § 4073; the House

²⁸ For additional information on the Pacific Salmon Treaty and renegotiation of its Annex IV, see CRS Report RL30234, *The Pacific Salmon Treaty: The 1999 Agreement and Renegotiation of Annex IV*, by Eugene H. Buck.

agreed to the conference report on August 1, 2007, and the Senate agreed on September 24, 2007.

- H.R. 1769 would amend the Marine Mammal Protection Act to authorize taking of California sea lions to reduce their predation on endangered Columbia River salmon.
- Section 3107 of S. 1248 would retain Army Corps of Engineers authority over avian predator management at McNary Dam, while transferring administrative jurisdiction to the Secretary of the Interior; this bill was reported by the Senate Committee on Environment and Public Works on April 30, 2007 (S.Rept. 110-58). On May 16, 2007, the Senate passed H.R. 1495 (amended), including this provision at § 3129. On July 31, 2007, a conference report was filed on H.R. 1495 (H.Rept. 110-280), including the McNary Dam provision in § 3164; the House agreed to the conference report on August 1, 2007, and the Senate agreed on September 24, 2007.
- S. 1522 and H.R. 3830 would reauthorize (through FY2014) and amend the Fisheries Restoration and Irrigation Mitigation Act of 2000; the Senate Energy and Natural Resources Subcommittee on Water and Power held a hearing on S. 1522 on July 26, 2007.
- H.R. 2733 would establish a Trinity River Restoration Fund; the House Natural Resources Subcommittee on Water and Power held a hearing on this bill on September 18, 2007.
- Title I, § 112 of H.R. 2643 would require FWS to implement a system of mass marking of salmonid stocks that are released from federally operated or federally financed hatcheries.²⁹ The House passed this bill (amended) on June 27, 2007.
- H.Con.Res. 184 would express the sense of the Congress opposing the removal of dams on the Columbia and Snake Rivers for fishery restoration purposes.
- S. 1766 would provide funds from a Climate Change Wildlife Conservation sub-account in the Treasury for the Secretary of the Interior to improve fish passage and dam removal and for the National Fish Habitat Plan (§ 402(e)(3)(C)).
- On July 31, 2007, the House Committee on Natural Resources held an oversight hearing on allegations of political intervention influencing scientific and policy decisions at the Department of the Interior, with respect to Klamath River salmon.
- Section 5022 of H.R. 1495 would increase Army Corps of Engineers funding for their research and development program for Columbia and Snake River salmon survival; this bill was reported (amended, now § 5023) by the House Committee on Transportation on March 29, 2007 (H.Rept. 110-80). The House passed this bill (amended) on April 19, 2007. On May 16, 2007, the Senate passed H.R. 1495, without this provision. On July 31, 2007, a conference report was

²⁹ Controversy related to mass-marking programs is discussed in CRS Report RL30234, *The Pacific Salmon Treaty: The 1999 Agreement and Renegotiation of Annex IV*, by Eugene H. Buck.

filed on H.R. 1495 (H.Rept. 110-280), with this provision in § 5025; the House agreed to the conference report on August 1, 2007, and the Senate agreed on September 24, 2007.

- Section 912 of S. 1892 would exclude small Alaska salmon fishing vessels from the definition of *fish processing vessel*.

Miscellaneous Issues

Assistance. Title IV, Chapter 2 of P.L. 110-28 provided \$110 million for recovery assistance to the Gulf of Mexico shrimp and fishing industries.

Seafood Safety and Nutrition. Section 1006 of P.L. 110-85 (H.R. 3580) authorized the Food and Drug Administration to enhance inspection of seafood products. Section 102 of H.R. 1148 and S. 654 would consolidate food safety and inspection programs, including seafood inspection. Section 3 of H.R. 1533 and § 4 of S. 843 would establish a interagency national mercury monitoring program, with provisions in subsection (d) focusing on aquatic plants and animals. H.Con.Res. 125 would express the sense of Congress in recognizing the health benefits of eating seafood as part of a balanced diet, and supporting the goals and ideals of National Seafood Month. H.R. 3077 would amend the Federal Food, Drug, and Cosmetic Act to address safety concerns with imported seafood and seafood products by requiring seafood importing countries to be certified as having equivalent safety systems to the United States; S. 1776 would impose this certification requirement on all imported food products.

Invasive Species. Several bills introduced in the 110th Congress focus primarily on invasive species concerns related to ballast water management:³⁰

- H.R. 801 would amend the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 to require all vessels to exchange ballast water or use alternative ballast water management methods before entering any Great Lakes port.
- Title I of H.R. 889 would amend the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 to establish vessel ballast water management requirements; the remainder of the bill focuses on improving coordination among various national and international efforts at invasive species control.
- While §101 of H.R. 1350, Title I of S. 725, and §111 of S. 791 focus primarily on ballast water management, other sections of each bill would authorize various research, development, and demonstration programs to address invasive species concerns, with H.R. 1350 and S. 791 focusing on the Great Lakes region.
- H.R. 2423, S. 1578, and Title V of H.R. 2830 would establish a national ballast water management program and national ballast water discharge standards. On September 20, 2007, the House Committee on Transportation and Infrastructure reported, amended,

³⁰ For additional information on ballast water management, see CRS Report RL32344, *Ballast Water Management to Combat Invasive Species*, by Eugene H. Buck.

H.R. 2830 (H.Rept. 110-338, Part I). On October 1, 2007, the House Committee on Homeland Security reported, amended, H.R. 2830 (H.Rept. 110-338, Part II). On October 30, 2007, the House Committee on the Judiciary reported (amended) H.R. 2830 (H.Rept. 110-338, Part III). On September 27, 2007, the Senate Committee on Commerce, Science, and Transportation ordered S. 1578 reported (amended).

Additional bills address other invasive species concerns:

- H.R. 83, S. 726, and § 171 of S. 791 would amend the Lacey Act to add four species of carp to the list of injurious species that are prohibited from being imported or shipped.
- H.R. 260 would authorize various marine and freshwater research, development, and demonstration programs to address invasive species concerns.
- H.R. 553, S. 336, and § 172 of S. 791 would direct the Army Corps of Engineers to operate and maintain a system of dispersal barriers in the Chicago Sanitary and Ship Canal. In addition, § 172 of S. 791 would authorize a National Dispersal Barrier Program.
- H.R. 767 would authorize grants to control harmful nonnative species at national wildlife refuges to protect and restore native fish and their habitat. The House Natural Resources Subcommittee on Fisheries, Wildlife, and Oceans held a hearing on this bill on June 21, 2007. The Committee on Natural Resources reported this bill (amended) on October 22, 2007 (H.Rept. 110-397); and the House subsequently passed this measure (amended).
- H.R. 1495 would coordinate management of two dispersal barriers on the Chicago Sanitary and Ship Canal (§ 3043) and authorize an Upper Mississippi River dispersal barrier project (§ 5016); this bill was reported (amended, new §§ 3047 and 5016) by the House Committee on Transportation on March 29, 2007 (H.Rept. 110-80). The House passed this bill (amended) on April 19, 2007. On May 16, 2007, the Senate passed H.R. 1495, including provisions to authorize an Upper Mississippi River Asian carp dispersal barrier demonstration project (§ 4021) and a feasibility study for a Lake Champlain Canal dispersal barrier project (§ 4032) as well as coordinate management of two dispersal barriers on the Chicago Sanitary and Ship Canal (§ 5015). On July 31, 2007, a conference report was filed on H.R. 1495 (H.Rept. 110-280), including provisions related to the Upper Mississippi dispersal barrier (§ 5016), the Lake Champlain Canal dispersal barrier (§ 5146), and the Chicago Sanitary and Ship Canal dispersal barriers (§ 3061); the House agreed to the conference report on August 1, 2007, and the Senate agreed on September 24, 2007.
- S. 1949 would establish a 100th Meridian Invasive Species State Revolving Fund to fund projects to prevent and control invasive species.

Climate Change. A number of bills have been introduced dealing with aquatic and marine aspects of climate change:

- Section 202(b)(5) of H.R. 620, S. 280, H.R. 2238, § 7456 of H.R. 3220/H.R. 3221, § 4702 of S. 2191, and § 114 of S. 2204 as well as Title IV, Subtitle D of H.R. 2337, would authorize funding of efforts to strengthen and restore habitat to improve the ability of fish and wildlife to adapt successfully to climate change. The House passed H.R. 3221 (amended) on August 4, 2007.
- Section 301 of H.R. 620 and § 465 of H.R. 2337 would amend the Coastal Zone Management Act of 1972 (16 U.S.C. §§ 1451, et seq.) to require the Secretary of Commerce to prepare a report on the observed and projected effects of climate change on marine life, habitat, and commercial and recreational fisheries; on August 3, 2007, the House Committee on Natural Resources reported (amended) H.R. 2337 (H.Rept. 110-296, Part I).
- S. 317, S. 1177, and S. 1554 would amend the Clean Air Act (42 U.S.C. §§ 7401, et seq.) to fund (among many programs) efforts to identify coastal and marine resources (such as coral reefs, submerged aquatic vegetation, shellfish beds, and other coastal or marine ecosystems) at greatest risk of damage by climate change; to monitor for impacts; and to restore damaged resources.
- S. 1766 would provide funds from a Climate Adaptation Fund for the Sport Fish Restoration Act (§ 402(a)(2)(D)(ii)) and from a Climate Change Wildlife Conservation sub-account in the Treasury for the Secretary of the Interior to improve fish passage and dam removal and for the National Fish Habitat Plan as well as for the Secretary of Commerce to sustain fisheries, protect marine species, and conserve marine habitat (§ 402(e)(3)(C)).

Several measures would address ocean acidification:

- Section 7471 of H.R. 3220/H.R. 3221 and § 201 of S. 2211 would direct the Secretary of Commerce to develop a national strategy to predict, plan for, and mitigate climate change effects, including ocean acidification, on ocean and coastal ecosystems to ensure the recovery, resiliency, and health these ecosystems; the House passed H.R. 3221 (amended) on August 4, 2007.
- S. 485 would amend the Clean Air Act to direct the Administrator of the Environmental Protection Agency to study ocean acidification and the ways that process affects ocean ecosystems and U.S. fisheries.
- On May 10, 2007, the Senate Commerce, Science, and Transportation Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard held a hearing on the effects of climate change and ocean acidification on living marine resources.
- S. 1581 would establish an interagency committee to develop an ocean acidification research and monitoring plan and would establish an ocean acidification program within NOAA.

- Section 7001 of S. 2191 would require the National Academy of Sciences to analyze predicted changes in ocean acidity.

Habitat Restoration. H.R. 17, S. 380, S. 779, and H.R. 1635 would amend the Secure Rural Schools and Community Self-Determination Act of 2000 (P.L. 106-393) to reauthorize federal funding for projects to protect, restore, and enhance fish habitat. S. 424 would direct the U.S. Army Corps of Engineers to implement the Penobscot River Restoration Project, benefitting endangered Atlantic salmon and shortnose sturgeon. Section 1006 of H.R. 1495 identifies more than two dozen small aquatic ecosystem restoration projects to be studied by the Army Corps of Engineers; this bill was reported (amended) by the House Committee on Transportation on March 29, 2007 (H.Rept. 110-80), and passed by the House (amended) on April 19, 2007. On May 16, 2007, the Senate passed H.R. 1495 (amended), identifying fourteen small aquatic ecosystem restoration projects to be studied. On July 31, 2007, a conference report was filed on H.R. 1495 (H.Rept. 110-280), including 43 small aquatic ecosystem restoration projects to be studied in § 1006; the House agreed to the conference report on August 1, 2007, and the Senate agreed on September 24, 2007. Section 1006 of S. 1248 identifies five small aquatic ecosystem restoration projects to be studied by the Army Corps of Engineers; this bill was reported by the Senate Committee on Environment and Public Works on April 30, 2007 (S.Rept. 110-58). Section 106(d) of H.R. 1551 and S. 919, and § 506(d) of H.R. 2401, would amend the Wildlife Habitat Incentive Program to direct more attention to fish habitat. S. 1029 would amend the Food Security Act of 1985 to create a Stream Habitat Improvement Program that would provide incentives to landowners to protect and improve stream habitat. Title III of H.R. 2262 would modify environmental standards for mining and reclamation to address concerns for fish and wildlife. S. 1766 would provide funds from a Climate Adaptation Fund for the Sport Fish Restoration Act (§ 402(a)(2)(D)(ii)) and from a Climate Change Wildlife Conservation sub-account in the Treasury for the Secretary of the Interior to improve fish passage and dam removal and for the National Fish Habitat Plan as well as for the Secretary of Commerce to sustain fisheries, protect marine species, and conserve marine habitat (§ 402(e)(3)(C)).

Oysters. Section 1005(6) of H.R. 1495 directs the Army Corps of Engineers to study improving the environmental quality of Delaware Bay for oyster restoration; this bill was reported (amended) by the House Committee on Transportation on March 29, 2007 (H.Rept. 110-80), and passed by the House (amended) on April 19, 2007. S. 1248 would (1) direct the Army Corps of Engineers to restore Long Island Sound oyster habitat at \$25 million (§3072); and (2) modify the authorization for oyster restoration in Chesapeake Bay and increase the funding authorization for this restoration to \$50 million (§3103); this bill was reported by the Senate Committee on Environment and Public Works on April 30, 2007 (S.Rept. 110-58). On May 16, 2007, the Senate passed H.R. 1495 (amended) to include the language of S. 1248, with Long Island oyster restoration at §3086, Chesapeake Bay oyster restoration at §3124, and increasing the federal funding for preparing an environmental impact statement on introducing non-native oysters to Chesapeake Bay in § 3068(b), but excluding the Delaware Bay oyster restoration provision. On July 31, 2007, a conference report was filed on H.R. 1495 (H.Rept. 110-280), including restoring Long Island Sound oyster habitat at \$25 million (§ 3120), modifying the authorization for oyster restoration in Chesapeake Bay and increasing authorized

funding for this restoration to \$50 million (§ 5021), and studying how to improve the environmental quality of Delaware Bay for oyster restoration (§ 1005(6)); the House agreed to the conference report on August 1, 2007, and the Senate agreed on September 24, 2007.

Recreational Fishing. Section 1(c) of S. 307 would amend § 9 of the Flood Control Act of 1944 to include maintenance of a healthy fishery on the Bighorn River, MT, downstream from the Yellowtail Dam as one of the authorized purposes of the Yellowtail Unit of the Pick-Sloan Missouri River Basin Program. H.R. 611 would amend the Social Security Act to eliminate the requirement that states collect Social Security numbers from applicants for recreational licenses. H.R. 2473, S. 1502, and § 2302 of H.R. 2419, as reported by the House Committee on Agriculture (H.Rept. 110-256), would establish a grant program to encourage private landowners to provide public access for fishing and other outdoor recreation; the House passed H.R. 2419 (amended) on July 27, 2007. H.Res. 458 would express the sense of the House supporting the goals and ideals of National Fishing and Boating Week. Section 402(a)(2)(D)(ii) of S. 1766 would provide funds from a Climate Adaptation Fund for the Sport Fish Restoration Act. H.R. 3227 would direct the Secretary of the Interior to continue stocking fish in certain lakes in the North Cascades National Park, Ross Lake National Recreation Area, and Lake Chelan National Recreation Area. Section 914 of S. 1892 would convene an interagency study group to review ship disposal practices including their use as artificial reefs. H.Res. 634 would express the sense of the House encouraging participation in fishing and supporting the goals of National Hunting and Fishing Day; the House agreed to this measure on September 24, 2007.

Great Lakes. H.R. 469 would authorize the Great Lakes Fishery Commission to investigate the effects of migratory birds on fish stock productivity. Section 5012 of H.R. 1495 would allow nonfederal participants in Great Lakes fisheries restoration to provide as much as 100% of their nonfederal share through in-kind contributions; this bill was reported (amended) by the House Committee on Transportation on March 29, 2007 (H.Rept. 110-80), and passed by the House (amended) on April 19, 2007. Section 3119 of S. 1248 would modify Great Lakes fisheries restoration provisions; this bill was reported by the Senate Committee on Environment and Public Works on April 30, 2007 (S.Rept. 110-58). On May 16, 2007, the Senate passed H.R. 1495 (amended), including the language from S. 1248 modifying Great Lakes fisheries restoration in § 3141. On July 31, 2007, a conference report was filed on H.R. 1495 (H.Rept. 110-280); § 5011 modifies Great Lakes fisheries restoration, including allowing nonfederal participants to provide as much as 100% of their nonfederal share through in-kind contributions. The House agreed to the conference report on August 1, 2007, and the Senate agreed on September 24, 2007.

Hydropower and Water Projects. Section 6 of S. 564, § 2014 of H.R. 1495, and § 2008 of S. 1248 would amend the Water Resources Development Act of 1986 (P.L. 99-662; 33 U.S.C. §§ 2201 et seq.) to modify requirements for mitigating aquatic resource losses at Army Corps of Engineers projects. H.R. 1495 was reported (amended) by the House Committee on Transportation on March 29, 2007 (H.Rept. 110-80), and passed by the House (amended) on April 19, 2007. On April 30, 2007, the Senate Committee on Environment and Public Works reported S. 1248 (S.Rept. 110-58). On May 16, 2007, the Senate passed H.R. 1495

(amended), with the mitigation language in § 2008. On July 31, 2007, a conference report was filed on H.R. 1495 (H.Rept. 110-280), including § 2036, modifying requirements for mitigating aquatic resource losses at Army Corps of Engineers projects; the House agreed to the conference report on August 1, 2007, and the Senate agreed on September 24, 2007. S. 1522 would reauthorize (through FY2014) and amend the Fisheries Restoration and Irrigation Mitigation Act of 2000.

Coral. S. 485 and H.R. 1590 would direct the National Academy of Sciences to assess the probability of a loss of more than 40% of world coral reefs because of increased ocean temperature or acidity. H.R. 1205, S. 1580, and S. 1583 would reauthorize and amend the Coral Reef Conservation Act of 2000. On March 6, 2007, the House Natural Resources Subcommittee on Fisheries, Wildlife, and Oceans held a hearing on H.R. 1205; on June 28, 2007, the House Committee on Natural Resources reported this bill (amended) on October 22, 2007 (H.Rept. 110-394, Part I), and the House subsequently passed this measure (amended). H.R. 1679 would seek to protect Florida coral reefs and other coastal marine resources from Cuban petroleum exploration and development. H.R. 2185 and S. 2020 would amend the Tropical Forest Conservation Act of 1998 to provide debt relief to developing countries that protect coral reefs and associated coastal marine ecosystems; on September 11, 2007. On October, 15, 2007, the Senate Committee on Foreign Relations reported S. 2020 (S.Rept. 110-196). The House passed H.R. 2185 (amended) on October 9, 2007.

Hypoxia and Algal Blooms. H.R. 1091 and § 526 of H.R. 3093 (as passed by the House on July 26, 2007) would reauthorize the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998 through FY2010; the Senate passed H.R. 3093 (amended) on October 16, 2007, without the reauthorization language. As reported by the House Committee on Transportation on March 29, 2007 (H.Rept. 110-80), § 5019 of H.R. 1495 would authorize the Army Corps of Engineers to participate in assessing hypoxia in the Gulf of Mexico. The House passed H.R. 1495 (amended) on April 19, 2007. On May 16, 2007, the Senate passed H.R. 1495 (amended), excluding the Gulf of Mexico hypoxia provision. On July 31, 2007, a conference report was filed on H.R. 1495 (H.Rept. 110-280), including authorization for the Army Corps of Engineers to participate in assessing hypoxia in the Gulf of Mexico in §5022; the House agreed to the conference report on August 1, 2007, and the Senate agreed on September 24, 2007.

Marketing. H.R. 167 and H.R. 293 would provide assistance for the construction, improvement, and rehabilitation of farmers markets, including those selling local aquaculture and commercial fishing products. On May 9, 2007, the Senate passed S. 1082 (amended), containing § 518 requiring the Food and Drug Administration to prepare a report on the taxonomic and consumer perception differences between lobster and langostino. H.R. 3115 and § 14 of H.R. 3610 would amend the Federal Food, Drug, and Cosmetic Act to restrict the use of carbon monoxide in meat, poultry, and seafood; the House Energy and Commerce Subcommittee on Health held a hearing on H.R. 3610 on September 26, 2007. H.Res. 582 expresses the sense of the House supportive of local fishermen and fishing communities, education of seafood consumers, and consumption of healthy seafood, especially locally caught products.

International Fisheries. H.Con.Res. 94 and S.Res. 208 would express the sense of Congress encouraging the elimination of subsidies that contribute to commercial fishing fleet overcapacity worldwide and lead to the overfishing. On May 17, 2007, the Senate agreed to S.Res. 208. On June 5, 2007, the House agreed to H.Con.Res. 94. S.J.Res. 17 would direct the United States to initiate international discussions and take steps to negotiate an agreement for managing migratory and transboundary fish stocks in the Arctic Ocean; the Senate Committee on Commerce, Science, and Transportation reported this measure on October 4, 2007, and the Senate subsequently agreed to this measure.

Vessel Safety. S. 687 would amend the Internal Revenue Code of 1986 to provide a business credit against income for purchasing fishing safety equipment. Section 307 of H.R. 2830 would modify certain safety standards for commercial fishing vessels and establish a fishing safety research grant program; on September 20, 2007, the House Committee on Transportation and Infrastructure reported, amended, this bill (H.Rept. 110-338, Part I). On October 1, 2007, the House Committee on Homeland Security reported, amended, H.R. 2830 (H.Rept. 110-338-Part II). On October 30, 2007, the House Committee on the Judiciary reported (amended) H.R. 2830 (H.Rept. 110-338, Part III).

Trade. Section 321(b) of S. 122, § 501(b) of H.R. 910, § 202 of H.R. 3801, and § 402 of S. 1848 would amend the Trade Act of 1974 (19 U.S.C. 2271, et seq.) to clarify that commercial fishermen are eligible for trade adjustment assistance. On July 18, 2007, the Senate Committee on Commerce, Science, and Transportation held a listening session on the safety of Chinese imports, including oversight and analysis of the federal response.

Tuna. H.R. 3669 would amend 46 U.S.C. to promote the U.S. distant water tuna fleet. H.Con.Res. 229 would express the sense of the Congress that the United States should seek a review of compliance with the International Commission for the Conservation of Atlantic Tunas' conservation and management recommendations for Atlantic bluefin tuna.

National Marine Sanctuaries. Section 7(d)(8) of H.R. 1187 would promote cooperative research and education efforts with commercial fishermen operating within the Gulf of the Farallones National Marine Sanctuary, the Cordell Bank National Marine Sanctuary, and the Monterey Bay National Marine Sanctuary. The House Natural Resources Subcommittee on Fisheries, Wildlife, and Oceans held a hearing on this bill on October 24, 2007.

Tax Provisions. H.R. 2133 would amend the Internal Revenue Code to provide commercial fishermen a temporary income tax credit to offset high fuel costs. H.R. 2110 would amend the Internal Revenue Code to provide for tax-exempt qualified small issue bonds to finance fish processing property.

Health Care. Section 2 of H.R. 241, § 202 of H.R. 324, and § 101 of H.R. 1012 would amend the Employee Retirement Income Security Act of 1974 (ERISA; P.L. 93-406; 29 U.S.C. §§ 1001, et seq.) to authorize fishing industry associations to provide health care plans for association members.

National Fish and Wildlife Foundation. H.R. 3891 would amend the National Fish and Wildlife Foundation Establishment Act to increase the number of Directors on the Foundation's Board of Directors.

Sea Turtles. Section 901 of S. 1892 would require a Coast Guard report on efforts taken from FY2000 through 2007 to protect sea turtles.

Maritime Liens. Section 505 of S. 1892 would prohibit the attachment of maritime liens to fishing permits.

Aquaculture: Background and Issues

Aquaculture is broadly defined as the farming or husbandry of fish, shellfish, and other aquatic animals and plants, usually in a controlled or selected environment.³¹ The diversity of aquaculture is typified by such activities as: fish farming, usually applied to freshwater commercial aquaculture operations (e.g., catfish and trout farms);³² shellfish and seaweed culture; net-pen culture, used by the salmon industry, wherein fish remain captive throughout their lives in marine pens built from nets; and ocean ranching, used by the Pacific Coast salmon industry, whereby juvenile salmon are cultured, released to mature in the open ocean, and caught when they return as adults to spawn. Fish hatcheries can be either publicly or privately operated to raise fish for recreational and commercial stocking as well as to mitigate aquatic resource and habitat damage.

The U.N. Food and Agriculture Organization (FAO) has characterized aquaculture as one of the world's fastest growing food production activities. World aquaculture production more than doubled in 10 years, from about 10 million metric tons in 1984 to 25.5 million metric tons in 1994; by 2002, global aquaculture production had reached almost 40 million metric tons. By mid-2006, FAO estimated that 43% of all fish consumed by humans came from aquaculture.³³ FAO predicts that world aquaculture production could exceed 130 million metric tons by 2030.³⁴

U.S. aquaculture, until recently and with a few exceptions, has been considered a minor industry. The U.S. Department of Agriculture's *2005 Census of Aquaculture* reported that U.S. sales of aquaculture products had reached nearly \$1.1 billion, with more than half this value produced in Alabama, Arkansas, Louisiana, and

³¹ For more background information, see CRS Report RL32694, *Open Ocean Aquaculture*, by Harold F. Upton, Rachel Borgatti and Eugene H. Buck, and out-of-print CRS Report 97-436, *Aquaculture and the Federal Role*, by Geoffrey S. Becker and Eugene H. Buck, available from the author at [gbuck@crs.loc.gov].

³² For statistics on freshwater production, see [<http://www.usda.gov/nass/pubs/stathigh/2002/livestock02.pdf>].

³³ For more details, see [<http://www.fao.org/newsroom/en/news/2006/1000383/index.html>].

³⁴ For more discussion of FAO projections for 2030, see Part 3 of [<http://www.fao.org/docrep/007/y5600e/y5600e00.htm>].

Mississippi.³⁵ Despite considerable growth, the domestic aquaculture industry faces strong competition from imports of foreign aquacultural products, from the domestic poultry and livestock industries, and from wild harvests.³⁶ With growth, however, aquaculture operations face increasing scrutiny for habitat destruction, pollution, and other concerns. The major statute affecting U.S. aquaculture is the National Aquaculture Act of 1980, as amended (16 U.S.C. §§ 2801 et seq.).

In November 2006, NOAA released a draft 10-year plan for its marine aquaculture program.³⁷ The 110th Congress may consider legislation the Administration has drafted to modify the regulatory environment to promote the development of U.S. offshore, open-ocean aquaculture.

Congressional Action

Food Safety. Section 1006 of P.L. 110-85 (H.R. 3580) authorized the Food and Drug Administration to enhance inspection of aquaculture products. H.R. 1148 and S. 654 would establish a Food Safety Administration, with food production facilities defined as including aquaculture facilities in § 3(14). H.R. 3077 would amend the Federal Food, Drug, and Cosmetic Act to address safety concerns with imported seafood and seafood products by requiring seafood importing countries to be certified as having equivalent safety systems to the United States; S. 1776 would impose this certification requirement on all imported food products.

Genetic Modification. Section 1007 of P.L. 110-85 (H.R. 3580) required the Food and Drug Administration to prepare a report on environmental risks associated with genetically engineered seafood products, including their impact on wild fish stocks.

Assistance. Several bills propose to amend either the MSFCMA (S. 741 and H.R. 2565) or the Coastal Zone Management Act (H.R. 3223) to establish a grant program to ensure waterfront access for aquaculture operators and commercial fishermen. Section 3109 of H.R. 1591 would appropriate \$5 million for the Department of Agriculture to compensate aquaculture operators for losses due to limitations on fish transport in the Great Lakes region to combat outbreaks of viral hemorrhagic septicemia; this bill was reported by the House Committee on Appropriations on March 20, 2007 (H.Rept. 110-60). The House passed H.R. 1591 on March 23, 2007. On March 29, 2007, the Senate passed H.R. 1591 (amended), without the aquaculture operator compensation provision. On April 24, 2007, a conference report was filed on H.R. 1591, without the aquaculture operator compensation provision (H.Rept. 110-107); this conference report was agreed to by the House (April 25, 2007) and Senate (April 26, 2007). President Bush vetoed H.R. 1591 on May 1, 2007. Section 101 of S. 2242, as reported by the Senate Committee

³⁵ See [<http://www.nass.usda.gov/aquaculture/index.asp>].

³⁶ For the latest information on domestic production and statistics, see [<http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1375>].

³⁷ Available at [<http://www.nmfs.noaa.gov/mediacenter/aquaculture/plan.htm>].

on Finance on October 25, 2007 (S.Rept. 110-206), would include aquaculture in the authorization for supplemental agriculture disaster assistance.

National Aquaculture Act Reauthorization. S. 1094 would reauthorize the National Aquaculture Act through FY2014 (§ 379) and reauthorize various regional aquaculture research centers through FY2014 (§ 318). H.R. 2398 and H.R. 2419 would reauthorize the National Aquaculture Act through FY2012 (§ 379 in H.R. 2398; § 7307 in H.R. 2419) and reauthorize various regional aquaculture research centers through FY2012 (§ 318 in H.R. 2398; § 7019 in H.R. 2419). On July 23, 2007, the House Committee on Agriculture reported H.R. 2419 (H.Rept. 110-256, Part I), reauthorizing regional aquaculture research centers (§ 7230) and the National Aquaculture Act (§ 7508); the House passed H.R. 2419 (amended) on July 27, 2007.

Open Ocean Aquaculture. S. 533 would amend the National Aquaculture Act of 1980 to prohibit issuing marine aquaculture facility permits until permit requirements are enacted. H.R. 2010 and S. 1609 would authorize the Secretary of Commerce to establish and implement a regulatory system for offshore aquaculture; on July 12, 2007, the House Natural Resources Subcommittee on Fisheries, Wildlife, and Oceans held a hearing on H.R. 2010.

Turtles. H.R. 924 and S. 540 would require the Food and Drug Administration to permit the sale of baby turtles as pets so long as the seller uses proven methods to effectively treat *Salmonella*. On May 1, 2007, this provision was also proposed as an amendment (Title VII) to S. 1082; this amendment (as revised) was agreed to on May 8, 2007, and S. 1082 (amended) was passed by the Senate on May 9, 2007.

Trade. Section 402 of S. 1848 would amend the Trade Act of 1974 (19 U.S.C. 2271, et seq.) to clarify that aquaculture producers are eligible for trade adjustment assistance. On July 18, 2007, the Senate Committee on Commerce, Science, and Transportation held a listening session on the safety of Chinese imports, including oversight and analysis of the federal response.

Algal Biomass. Section 4416 of H.R. 3220/H.R. 3221 and § 16 of H.R. 2773, as reported (amended) on August 3, 2007 (H.Rept. 110-032), would require a report by the Secretary of Energy on the progress of research and development on the use of algae as a feedstock for the production of biofuels. The House passed H.R. 3221 (amended) on August 4, 2007.

Marketing. H.R. 167 and H.R. 293 would provide assistance for the construction, improvement, and rehabilitation of farmers markets, including those selling local aquaculture and commercial fishing products. H.R. 3115 would amend the Federal Food, Drug, and Cosmetic Act to restrict the use of carbon monoxide in meat, poultry, and seafood.

National Marine Sanctuaries. Section 6(b) of H.R. 1187 would prohibit most aquaculture in the Gulf of the Farallones National Marine Sanctuary, the Cordell Bank National Marine Sanctuary, and the Monterey Bay National Marine Sanctuary. The House Natural Resources Subcommittee on Fisheries, Wildlife, and Oceans held a hearing on this bill on October 24, 2007.

Asian Carp. H.R. 83, S. 726, and § 171 of S. 791 would amend the Lacey Act to add four species of carp to the list of injurious species that are prohibited from being imported or shipped.

Tax Provisions. H.R. 2110 would amend the Internal Revenue Code to provide for tax-exempt qualified small issue bonds to finance aquacultural processing property.

Crop Insurance. Section 9016 of S. 1424 and § 702 of H.R. 2144 would expand the Adjusted Gross Revenue Insurance Pilot Program to include coverage for shellfish.

Marine Mammals: Background and Issues

In 1972, Congress enacted the Marine Mammal Protection Act (MMPA; 16 U.S.C. §§ 1361, et seq.), due in part to the high level of dolphin mortality (estimated at more than 400,000 animals per year) in the eastern tropical Pacific tuna purse-seine fishery. While some critics assert that the MMPA is scientifically irrational because it identifies one group of organisms for special protection unrelated to their abundance or ecological role, supporters note that the MMPA has accomplished much by way of promoting research and increased understanding of marine life as well as encouraging attention to incidental bycatch mortalities of marine life by the commercial fishing and other maritime industries.

The MMPA established a moratorium on the “taking” of marine mammals in U.S. waters and by U.S. nationals on the high seas. It also established a moratorium on importing marine mammals and marine mammal products into the United States. The MMPA protected marine mammals from “clubbing, mutilation, poisoning, capture in nets, and other human actions that lead to extinction.” It also expressly authorized the Secretary of Commerce and the Secretary of the Interior to issue permits for the “taking” of marine mammals for certain purposes, such as scientific research and public display.

Under the MMPA, the Secretary of Commerce, acting through NMFS, is responsible for the conservation and management of whales, dolphins, porpoises, seals, and sea lions. The Secretary of the Interior, acting through the Fish and Wildlife Service (FWS), is responsible for walruses, sea and marine otters, polar bears, manatees, and dugongs. This division of authority derives from agency responsibilities as they existed when the MMPA was enacted. Title II of the MMPA established an independent Marine Mammal Commission (MMC) and its Committee of Scientific Advisors on Marine Mammals to oversee and recommend actions necessary to meet the requirements of the MMPA.

Prior to passage of the MMPA, states were responsible for marine mammal management on lands and in waters under their jurisdiction. The MMPA shifted marine mammal management authority to the federal government. It provides, however, that management authority, on a species-by-species basis, could be returned to states that adopt conservation and management programs consistent with the

purposes and policies of the MMPA. It also provides that the moratorium on taking can be waived for specific purposes, if the taking will not disadvantage the affected species or population. Permits may be issued to take or import any marine mammal species, including depleted species, for scientific research or to enhance the survival or recovery of the species or stock. The MMPA allows U.S. citizens to apply for and obtain authorization for taking small numbers of mammals incidental to activities other than commercial fishing (e.g., offshore oil and gas exploration and development) if the taking would have only a negligible impact on any marine mammal species or stock, provided that monitoring requirements and other conditions are met.

The MMPA's moratorium on taking does not apply to any Native American (Indian, Aleut, or Eskimo) who resides in Alaska near the coast of the North Pacific (including the Bering Sea) or Arctic Ocean (including the Chukchi and Beaufort Seas), if such taking is for subsistence purposes or for creating and selling authentic Native articles of handicrafts and clothing, and is not done wastefully.

The MMPA also authorizes the taking of marine mammals incidental to commercial fishing operations. In 1988, most U.S. commercial fish harvesters were exempted from otherwise applicable rulemaking and permit requirements for a five-year period, pending development of an improved system to govern the incidental taking of marine mammals in the course of commercial fishing operations. This exemption expired at the end of FY1993, and was extended several times until new provisions were enacted in 1994 by P.L. 103-238, which reauthorized the MMPA through FY1999. The eastern tropical Pacific tuna fishery was excluded from the incidental take regimes enacted in 1988 and 1994. Instead, the taking of marine mammals incidental to that fishery is governed by separate provisions of the MMPA, and was substantially amended in 1997 by P.L. 105-42, the International Dolphin Conservation Program Act.

Section 319 of P.L. 108-136 amended the MMPA to provide a broad exemption for "national defense." This section also amended the definition of "harassment" of marine mammals, as it applies to military readiness activities, to require greater scientific evidence of harm, and the consideration of impacts on military readiness in the issuance of permits for incidental takings. On January 23, 2007, the Department of Defense announced the authorization of a two-year exemption under these provisions for mid-frequency active sonar use.³⁸

Marine Mammal Protection Act Reauthorization

Background. The MMPA was reauthorized by P.L. 103-238, the Marine Mammal Protection Act Amendments of 1994; the authorization for appropriations expired on September 30, 1999. The 1994 amendments indefinitely authorized the taking of marine mammals incidental to commercial fishing operations and provided for assessing marine mammal stocks in U.S. waters, for developing and implementing take-reduction plans for stocks that may be reduced or are being

³⁸ See [http://www.news.navy.mil/search/display.asp?story_id=27415].

maintained below their optimum sustainable population levels due to interactions with commercial fisheries, and for studying pinniped-fishery interactions.³⁹

Congressional Action. In the 109th Congress, several bills were introduced, proposing to extensively amend the MMPA and authorize appropriations for several marine mammal programs. Although the House passed H.R. 4075 (amended), no further action was taken before 109th Congress adjourned. The 110th Congress may again consider measures to amend and reauthorize the MMPA as well as bills to address specific marine mammal regulatory and management issues.⁴⁰

In the 110th Congress, several bills have been introduced to amend the MMPA:

- H.R. 1006 would modify provisions relating to the John H. Prescott Marine Mammal Rescue Assistance Grant Program, including reauthorizing funding for the Marine Mammal Unusual Mortality Event Fund; the House passed this bill on March 19, 2007.
- H.R. 1007 would repeal the long-term goal for reducing the incidental mortality and serious injury of marine mammals to zero in commercial fishing operations, and to modify the goal of take reduction plans for reducing such takings.
- H.R. 1769 would authorize taking of California sea lions to reduce their predation on endangered Columbia River salmon; the House Natural Resources Subcommittee on Fisheries, Wildlife, and Oceans held a hearing on this bill on August 2, 2007.
- H.R. 2327 and S. 1406 would delete the authorization for importing polar bear sport hunting trophies from Canada. On June 26, 2007, the Senate Committee on Appropriations reported S. 1696 (S.Rept. 110-91), in which § 120, in Title I, would prohibit the expenditure of funds for issuing permits to import polar bear sport hunting trophies during FY2008.
- Section 901 of S. 1892 would require a Coast Guard report on efforts taken from FY2000 through 2007 to enforce the MMPA. H.R. 3156 and S. 1860 would modify how certain MMPA offenses might be prosecuted.

Miscellaneous Issues

Climate Change. H.R. 2338, § 202(b)(5) of H.R. 620, S. 280, and § 7456 of H.R. 3220/H.R. 3221 would authorize funding for efforts to strengthen and restore habitat to improve the ability of wildlife to adapt successfully to climate change; § 301 of H.R. 620 would also amend the Coastal Zone Management Act of 1972 (16 U.S.C. §§ 1451, et seq.) to require the Secretary of Commerce to prepare a report on the observed and projected effects of climate change on marine life and habitat. The

³⁹ For more background and information on the 1994 amendments, see out-of-print CRS Report 94-751 ENR, *Marine Mammal Protection Act Amendments of 1994*, by Eugene H. Buck, available from the author at [gbuck@crs.loc.gov].

⁴⁰ For additional background on potential reauthorization issues, see CRS Report RL30120, *The Marine Mammal Protection Act: Reauthorization Issues*, by Eugene H. Buck.

House passed H.R. 3221 (amended) on August 4, 2007. Section 101 of S. 317 would amend the Clean Air Act (42 U.S.C. §§ 7401, et seq.) to create a Climate Action Trust Fund, funding (among many programs) efforts to identify coastal and marine resources (such as coral reefs, submerged aquatic vegetation, shellfish beds, and other coastal or marine ecosystems) at greatest risk of damage by climate change; to monitor for impacts; and to restore damaged resources.

Military Sonar. On May 11, 2007, the House Committee on Armed Services reported H.R. 1585, expressing concern in the committee report (H.Rept. 110-146) about the Navy issuing a two-year MMPA exemption, in January 2007, for the use of mid-frequency sonar in naval training exercises and directing the Navy to assess the number and species of marine mammals injured and killed as a result of activities conducted under the two-year exemption. On May 17, 2007, the House passed H.R. 1585 (amended). The Senate passed H.R. 1585 (amended) on October 1, 2007.

Canadian Seal Hunt. S.Res. 115, S.Res. 118, and H.Res. 427 would express the sense of the House urging Canada to halt its commercial seal hunt. On July 30, 2007, the House agreed to H.Res. 427.

Southern Sea Otter. H.R. 3639 would establish a research program for the recovery of the southern sea otter.

NMFS Appropriations

On February 5, 2007, the Bush Administration released its FY2008 budget request, including almost \$796 million for NMFS. (See **Table 1**.) The FY2008 request for funding for NMFS under the Operations, Research, and Facilities (OR&F) Account is \$37.4 million (5.6%) above the funding enacted for FY2006. However, total NMFS funding would decrease by \$7.9 million (1.0%) from that enacted for FY2006, primarily due to decreases in Procurement, Acquisitions, and Construction.

Major increases requested in excess of enacted FY2006 funding in NMFS's portion of the OR&F Account include:

- Fisheries Research and Management Programs: + \$27.7 million
- Pacific Salmon Management Activities: + \$11.4 million
- Survey and Monitoring Projects: + \$10.7 million
- Observers/Training: + \$9.1 million
- Protected Species Research and Management: + \$8.5 million
- Improve Stock Assessments & Data Collection: + \$7.9 million
- Economics & Social Science Research: + \$6.5 million

Major decreases requested from enacted FY2006 funding include:

- Alaska Composite Research & Development: - \$50.3 million
- Hurricane supplemental: - \$17.1 million
- Cooperative Research: - \$8.9 million
- Other Projects: - \$6.1 million
- Marine Turtles: - \$3.6 million

Table 1. NMFS Appropriations
(in thousands of dollars)

	FY2006 Enacted	FY2007 Request	FY2007 Hse Pasd	FY2007 Sen Rptd	FY2008 Request	FY2008 Hse Pasd	FY2008 Sen Pasd
Fisheries	352,585	347,023	317,600	436,261	402,096	398,463	443,828
Protected Resources	145,039	144,924	108,000	180,991	165,095	165,195	177,920
Habitat Conservation	46,629	39,896	40,000	56,927	50,415	51,815	54,415
Enforcement Surveillance	72,675	80,697	73,500	84,500	86,973	86,973	86,973
SUBTOTAL	667,226^a	648,988^a	539,100	813,679^a	704,579	702,446	763,136
Procurement, Acquisition, Construction	30,444	0	0	0	0	500	2,000
Pacific Coastal Salmon Recovery	66,571	66,825	20,000	90,000	66,825	64,825	90,000
Other Accounts	39,579	21,088	287	0	24,550	0	1,000
TOTAL	803,820	736,901	559,387	903,679	795,954	767,771	856,136

Sources: Budget Justifications, House and Senate Committee Reports, and floor debate.

a. Includes funds for “Alaska Composite Research and Development Program” — \$50.3 million for FY2006; the Administration’s FY2007 request was \$36.45 million; the FY2007 Senate-reported amount was \$55 million.

Some of the changes in FY2008 funding appear to represent a reallocation of the “Alaska Composite Research & Development” funding back into more generic programs/activities. On June 29, 2007, the Senate Committee on Appropriations reported S. 1745 (S.Rept. 110-124), proposing more than \$856 million for NMFS and related programs for FY2008. On July 19, 2007, the House Committee on Appropriations reported H.R. 3093 (H.Rept. 110-240), proposing more than \$767 million for NMFS and related programs for FY2008; the House passed this measure (amended) on July 26, 2007. On October 16, 2007, the Senate passed H.R. 3093 (amended), proposing more than \$856 million for NMFS and related programs for FY2008.

Since the 109th Congress did not enact FY2007 appropriations for NMFS/NOAA, funding for these programs has been provided under a continuing resolution (P.L. 110-5) for all of FY2007. This continuing resolution funds NMFS programs for FY2007 at enacted FY2006 levels, with certain exclusions, minus an agency-wide 1.28% funding rescission.