



Fishery, Aquaculture, and Marine Mammal Issues in the 112th Congress

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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 as well as the management of their habitat. Aquaculture or fish farming enterprises seek to supplement food traditionally provided by wild harvests.

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 in the federal exclusive economic zone (EEZ), the federal government manages fisheries under the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) through eight regional fishery management councils. Beyond 200 miles, the United States participates in international agreements relating to specific areas or species. The 112th Congress may oversee implementation of the MSFCMA as well as address individual habitat and management concerns for U.S. commercial and sport fisheries in an attempt to modify the balance between resource use and protection. Additional concerns might include providing additional flexibility in managing harvests to eliminate overfishing; determining the appropriate level of funding for fishery disaster assistance; determining whether to modify fishing vessel capacity reduction and limited access privilege (catch-share) programs; modifying programs to better control bycatch of non-target species; amending various fishery laws to strengthen enforcement to stop illegal, unreported, and unregulated fishing; amending and reauthorizing the Oceans and Human Health Act; amending and reauthorizing the Coral Reef Conservation Act; enhancing efforts to monitor, restore, and protect marine ecosystems in the Gulf of Mexico; implementing the Antigua Convention for eastern tropical Pacific tuna; authorizing a national strategy to address harmful algal blooms and hypoxia; and providing additional support to maintain the character of traditional fishing communities.

Aquaculture—the farming of fish, shellfish, and other aquatic animals and plants in a controlled environment—is expanding rapidly abroad, yet with little growth in the United States. In the United States, important species cultured include catfish, salmon, shellfish, and trout. The 112th Congress may consider whether National Oceanic and Atmospheric Administration policies and regulations can balance development and regulation of the aquaculture industry in the U.S. EEZ, and whether to prohibit regional fishery management councils from authorizing aquaculture in federal offshore waters through fishery management plans and their amendments under the MSFCMA.

Marine mammals are protected under the Marine Mammal Protection Act (MMPA). With few exceptions, the MMPA prohibits harm or harassment (“take”) of marine mammals, unless permits are obtained. It also addresses specific situations of concern, such as dolphin mortality associated with the eastern tropical Pacific tuna fishery. The 112th Congress may consider bills to reauthorize and amend the MMPA, including the John H. Prescott Marine Mammal Rescue Assistance Grant Program, as well as measures to address specific marine mammal habitat and management concerns, such as how to deal with the effects of increasing noise in the ocean and an expanded research program for the recovery of the southern sea otter.

The level of appropriations for fisheries, aquaculture/hatchery, and marine mammal programs administered by the National Marine Fisheries Service and the Fish and Wildlife Service may be an issue during the 112th Congress amid pressures to reduce federal spending.

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Introduction

Increasing use of marine resources is driving proposals for Congress and the Administration to alter current relationships between environmental protection and sustainable resource management. In response to reports by the U.S. Commission on Ocean Policy and the Pew Oceans Commission noting declines in marine resources and shortcomings in what are perceived as fragmented and limited approaches to resource protection and management in federal and state waters,¹ the Obama Administration released the final recommendations of its Ocean Policy Task Force on July 19, 2010.² A further concern is the increasing pressures and conflicts that arise from economic activity associated with continued human population growth. A common concern is habitat loss or alteration, due both to natural processes, such as climate variation and ocean acidification, and to development, competition from invasive species, and other factors, primarily related to economic and social interests. Congress faces the issues of how to balance these diverse interests (which may fall on various sides of any given controversy), and whether to alter current laws that promote the sustainable management of fishery and other marine resources and protect the marine environment.

The primary laws governing fisheries, aquaculture, and marine mammals are the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA; 16 U.S.C. §§ 1801 et seq.), the National Aquaculture Act of 1980 (16 U.S.C. §§ 2801 et seq.), and the Marine Mammal Protection Act (MMPA; 16 U.S.C. §§ 1361 et seq.). Congress last reauthorized and extensively amended the MSFCMA in the 109th Congress (P.L. 109-479); the current funding authorization expires on September 30, 2013. The Marine Mammal Protection Act was last reauthorized in 1994 by P.L. 103-238, and funding authorization expired on September 30, 1999. The 112th Congress may consider measures to reauthorize the MMPA, address aquatic habitat concerns, provide funding for disaster assistance, consider whether to provide greater flexibility in rebuilding fish populations, and address fishery-specific concerns, as well as conducting oversight of MSFCMA implementation.

Commercial and Sport Fisheries

Background

Historically, coastal states managed marine sport and commercial fisheries in nearshore waters, where almost all seafood was caught. However, as fishing techniques improved, fishermen ventured farther offshore. Before 1950, the federal government assumed limited responsibility for marine fisheries, responding primarily to international fishery concerns and treaties (e.g., by enacting laws implementing treaties, such as was done by the Northern Pacific Halibut Act in 1937) as well as to interstate fishery conflicts (e.g., by consenting to interstate fishery compacts, such as was accomplished by enactment of the Pacific Marine Fisheries Compact in 1947). In the late 1940s and early 1950s, several Latin American nations proclaimed marine jurisdictions

¹ See *An Ocean Blueprint for the 21st Century*, http://www.oceancommission.gov/documents/full_color_rpt/000_ocean_full_report.pdf, and *America's Living Oceans: Charting a Course for Sea Change*, http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Protecting_ocean_life/env_pew_oceans_final_report.pdf.

² See http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf.

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,³ 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 as well as actions by other coastal nations provided impetus for unilateral U.S. action.⁴

Such unilateral action occurred when the United States enacted the Fishery Conservation and Management Act (FCMA); later renamed the Magnuson Fishery Conservation and Management Act and more recently the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), ushering 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. This 200-mile fishery conservation zone was superseded by a 200-mile exclusive economic zone (EEZ), proclaimed by President Reagan on March 10, 1983 (Presidential Proclamation 5030).

With the enactment of the FCMA, 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.⁵ In addition, the FCMA established eight Regional Fishery Management Councils,⁶ with members appointed by the Secretary of Commerce from lists provided by coastal state governors of candidates knowledgeable about fishery resources.⁷ Each regional council prepares 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 more than 40 FMPs for various fish and shellfish resources, with additional FMPs 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 more than 30 times), and three have been developed and implemented jointly by two or more councils.

³ Subsequently 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 U.S. fishery jurisdiction.

⁴ The United Nations Convention on the Law of the Sea was reported favorably in the 110th Congress by the Senate Committee on Foreign Relations (S.Exec.Rept. 110-9) on December 19, 2007.

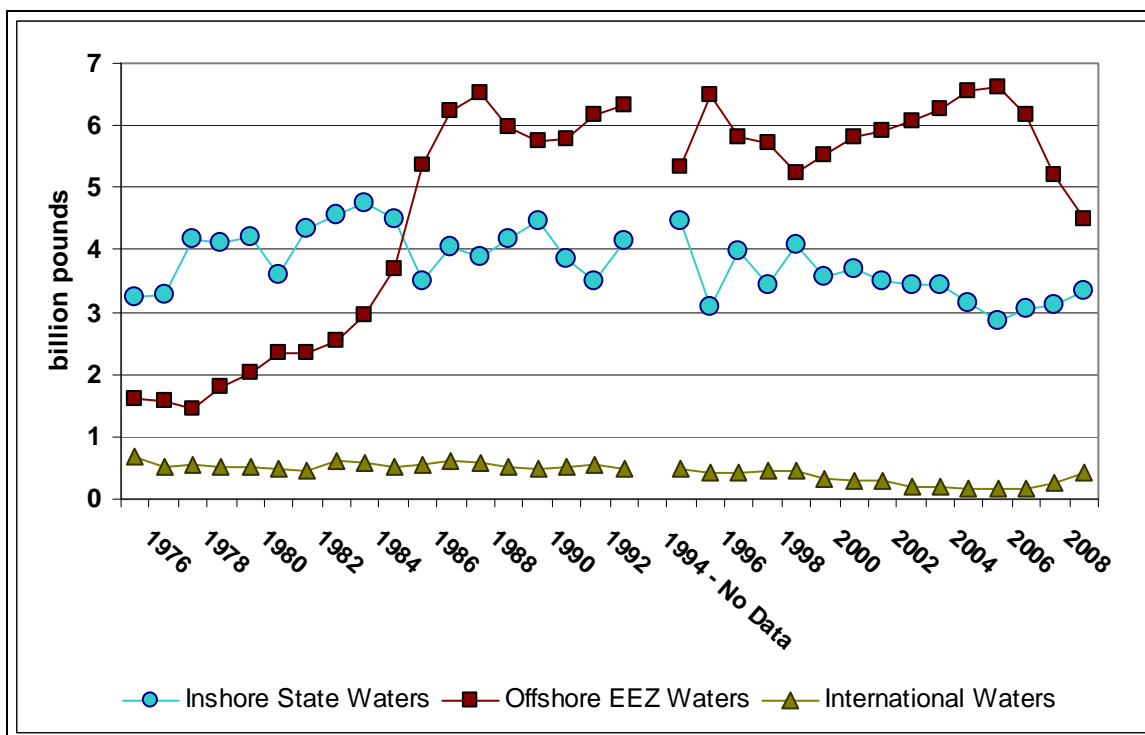
⁵ NMFS programs are described in detail at <http://www.nmfs.noaa.gov/>.

⁶ Links to individual council websites are available at <http://www.nmfs.noaa.gov/councils/>.

⁷ For the 2009 report to Congress on council membership, see http://www.nmfs.noaa.gov/sfa/reg_svcs/Council_Reporttocongress/2009ApportionmentReportToCongress.pdf.

Under initial FCMA authority, a substantial portion of the fish caught 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 EEZ waters increased dramatically, from about 1.6 billion pounds (1977) to more than 6.3 billion pounds in 1986-1988.⁸ After this peak, annual landings hovered around 6 billion pounds until about 2006, when Bering Sea pollock stocks began a decline and increased efforts to reduce overfishing in federal EEZ waters began to take effect (Figure 1).

Figure 1. U.S. Commercial Fish and Shellfish Harvest, 1976-2009



Source: NMFS, *Fisheries of the United States* (various years), Current Fishery Statistics series.

Current Performance Measures

The economic status of U.S. commercial fisheries is updated and reported annually.⁹ In 2009 (the most recent data available), U.S. commercial fishermen landed slightly more than 6.0 billion pounds of edible, unprocessed fish and shellfish from combined state, federal, and international waters, worth more than \$3.7 billion at the dock. U.S. imports of mostly processed products

⁸ 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.).

⁹ For additional information on domestic commercial fisheries, see <http://www.st.nmfs.noaa.gov/st1/commercial/index.html>. Additional data for 2009 are available at http://www.st.nmfs.noaa.gov/st1/fus/fus09/fus_2009.pdf.

supplied 5.2 billion pounds, worth \$13.1 billion. U.S. consumers spent an estimated \$75.5 billion on edible seafood in 2009, with \$50.3 billion of that amount spent in restaurants and other food service establishments. In addition, marine recreational anglers caught an estimated 391 million fish in 2009, of which the retained catch was about 212 million pounds.¹⁰ In 2006 (the most recent data available), a nationwide survey, conducted every five years, estimated that recreational anglers spent more than \$40 billion annually pursuing their sport.¹¹

NMFS reports annually on the status of fish stocks managed under the MSFCMA through two determinations.¹² For 2009, NMFS made determinations for 250 fish stocks and complexes,¹³ finding that 38 (15%) of them were subject to overfishing¹⁴ and 212 (85%) were not. In addition, NMFS made separate determinations for 203 stocks and complexes, finding that 46 (23%) were overfished¹⁵ and 157 (77%) were not. These numbers reflect a slight decline in the overfishing percentage compared to 2008 (when 16% were subject to overfishing) as well as a stable overfished percentage compared to that year (when 23% were overfished). In 2005, NMFS began using these same fish stock status data to portray nationwide progress in addressing overfishing through a numerical Fish Stock Sustainability Index (FSSI).¹⁶ Out of a possible maximum FSSI score of 920, this index of success in curbing overfishing has increased (i.e., improved) from 481.5 (third quarter of calendar year 2005) to 583 (fourth quarter of calendar year 2010).

Magnuson-Stevens Act

The MSFCMA was reauthorized in the 109th Congress by P.L. 109-479, the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006.¹⁷ Some of the major issues addressed by this comprehensive measure included

- modifying requirements for appointing and training members of regional councils as well as for conducting 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;
- increasing the consideration of economic and social impacts in fishery management;
- modifying research programs and improving data collection and management;

¹⁰ Recreational fishing programs at NMFS are discussed at <http://www.st.nmfs.gov/st1/recreational/index.html>.

¹¹ Results of the 2006 survey can be found at http://library.fws.gov/pubs/nat_survey2006_final.pdf.

¹² See http://www.nmfs.noaa.gov/sfa/statusoffisheries/sos_full28_press.pdf.

¹³ NMFS reviewed 522 individual stocks and stock complexes but had insufficient information to make determinations on all of them.

¹⁴ A stock that is subject to overfishing has a fishing mortality (harvest) rate greater than the level that provides for the maximum sustainable yield from this stock.

¹⁵ A stock that is overfished has a biomass level less than a biological threshold specified in that stock's FMP.

¹⁶ 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/statusoffisheries/2010/fourth/Q4%202010%20FSSI%20Summary%20Changes.pdf>.

¹⁷ For additional summary information on this measure, see <http://www.nmfs.noaa.gov/msa2005/MSA%202006%20Implementation%20Overview.pdf>.

- 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 coordination of environmental review under the National Environmental Policy Act (NEPA; 42 U.S.C. §§ 4321, et seq.);
- strengthening the role of science in fishery management decision-making; and
- authorizing appropriations for federal fishery management through FY2013.¹⁸

NMFS has summarized various tasks associated with implementing P.L. 109-479.¹⁹ Examples of implementation activities include (1) a report by NMFS to Congress on implementing new provisions relating to better control of illegal, unreported, and unregulated (IUU) fishing activities;²⁰ and (2) final guidance amending National Standard 1, designed to end overfishing through new requirements for annual catch limits and other accountability measures.²¹ In addition, NMFS released a new national policy encouraging the consideration and use of catch shares as an alternative to managing fisheries through open access harvesting.²²

The 112th Congress may continue oversight of implementation of the 2006 amendments to the MSFCMA, including progress on addressing overfishing and restoring overfished stocks and controlling bycatch of non-target species. Legislation may be considered to address regional marine habitat and fishery management concerns to balance interests in promoting both sustainable resource use and habitat protection. Particular legislative attention may be focused on providing additional flexibility in managing harvests to eliminate overfishing while providing additional support to maintain the character of traditional coastal fishing communities. As the 112th Congress faces daunting fiscal concern, attention might be given to determining the appropriate level of fishery disaster assistance that might be authorized and appropriated. To address economic concerns of the commercial fishing industry, the 112th Congress might consider legislation determining whether to encourage additional or modify existing fishing vessel capacity reduction and limited access privilege (catch share) programs.

In the 112th Congress, introduced bills address a number of issues.

- S. 238 would amend MSFCMA to require that annual fishery impact statements evaluate the effects of management actions on fishing communities.

¹⁸ 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>.

¹⁹ Available at http://www.nmfs.noaa.gov/msa2007/Reauthorization_tasks.pdf. Additional information on NMFS's implementation of P.L. 109-479 can be found at <http://www.nmfs.noaa.gov/msa2007/>.

²⁰ Available at http://www.nmfs.noaa.gov/msa2007/docs/biennial_report011309.pdf.

²¹ 74 *Federal Register* 3178-3213, January 16, 2009.

²² See http://www.nmfs.noaa.gov/sfa/domes_fish/catchshare/docs/noaa_cs_policy.pdf.

Pacific Salmon

Steelhead trout and 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 the same freshwater rivers and lakes to spawn. Management is complicated because these fish may cross several state and national boundaries during their life spans, and their different subpopulations or stocks intermingle on fishing grounds. In addition to natural environmental fluctuations, factors influencing the abundance of salmon include hydropower dams that block rivers and create reservoirs, sport and commercial harvests, habitat modification by competing resource industries and other human development, and hatcheries seeking to supplement natural production but sometimes unintentionally causing genetic or developmental concerns.

The Northwest Power and Conservation Council took the lead in the Columbia River Basin under the 1980 Pacific Northwest Electric Power Planning and Conservation Act, by attempting to protect salmon and their habitat while also providing inexpensive electric power to the region. Under this effort, federal agencies and public utilities have spent hundreds of millions of dollars on technical improvements for dams, habitat enhancement, and water purchases to improve salmon survival. Recent years have seen an increased interest by state governments and tribal councils in developing comprehensive salmon management efforts.

In response to declining salmon populations in Washington, Oregon, Idaho, and California, discrete population units were listed as endangered or threatened species under the Endangered Species Act.²³ In 2006, a San Joaquin River Restoration Settlement Agreement ended an 18-year legal dispute over the operation of Friant Dam in California that had eliminated salmon from much of this river. This agreement provides for river channel improvements and water flow to sustain Chinook salmon upstream (south) from the confluence of the Merced River tributary while reducing or avoiding water supply losses to Friant Division long-term water contractors that may result from restoration flows provided in the agreement. Congress authorized the implementation of this agreement through P.L. 111-11. In 2010, two agreements were concluded for the Klamath River Basin to address fishery and water supply issues.

Issues in the 112th Congress may include measures to better protect freshwater and coastal habitat from a multitude of threats and improve habitat quality so as to benefit Pacific salmon. Under the authority of the Pacific Salmon Treaty with Canada, additional efforts might be made to improve coordination of salmon management with Canada. In addition, expanded survey and research initiatives might be authorized to obtain additional environmental data to improve understanding of oceanic factors affecting salmon abundance. The 112th Congress might act to authorize targeted salmon restoration programs, such as implementation of the Klamath River agreements. Oversight of the San Joaquin Restoration Settlement, operation of the federal Central Valley Project, and pumping of water from the Sacramento River Delta may also be topics of interest for the 112th Congress.

In the 112th Congress, Section 305(b) of S. 52 would reauthorize the Pacific Salmon Treaty Act through FY2013. H.R. 1 (seeking to provide continuing appropriations for the remainder of FY2011) includes language that would limit funding for the Pacific Coastal Salmon Recovery to \$50 million (Section 1307, Division B, Title III) and prohibit funds from being used by NMFS

²³ For additional background on this issue, see CRS Report 98-666, *Pacific Salmon and Steelhead Trout: Managing Under the Endangered Species Act*, by Eugene H. Buck and Harold F. Upton.

and FWS for implementing certain actions described in a biological opinion for the operations of the Central Valley Project and the California State Water Project (Section 1475, Division B, Title IV).

Additional Fishery Issues in the 112th Congress

Additional fishery concerns that could be addressed in the 112th Congress include several measures that were introduced and acted upon favorably by the 111th Congress, but were not enacted before that Congress adjourned. In response to the *Deepwater Horizon* oil spill in 2010, efforts might be made in the 112th Congress to enhance efforts to monitor, restore, and protect marine ecosystems in the Gulf of Mexico. Several additional issues that were unresolved in the 111th Congress might receive consideration in the 112th Congress, including amending and reauthorizing the Oceans and Human Health Act and authorizing a national strategy to address harmful algal blooms and hypoxia in coastal waters.

Legislation has been introduced in the 112th Congress to address several issues related to fisheries.

Coral

S. 46 would amend and reauthorize the Coral Reef Conservation Act of 2000.

Tax Provisions

Section 202(a)(74) of S. 13 would repeal Section 7873 of the Internal Revenue Code of 1986 relating to federal tax treatment of income derived by Indians from exercise of fishing rights secured by treaty. H.R. 278 would amend the Internal Revenue Code of 1986 to provide for tax-exempt qualified small issue bonds to finance fish processing property. Section 5 of H.R. 390 would amend the Internal Revenue Code of 1986 to provide for an exclusion from the gross estate for certain farmlands and lands subject to qualified conservation easements managed to provide habitat in support of fish and wildlife-dependent recreation.

Seafood Safety

S. 50 would direct the Departments of Commerce and of Health and Human Services, the Federal Trade Commission, and other federal agencies to coordinate and strengthen programs to better ensure that seafood in interstate and foreign commerce is fit for human consumption.

International Fisheries

S. 52 would amend various statutes implementing international fishery agreements to deter and combat illegal, unreported, and unregulated (IUU) fishing; in addition, Title IV would amend the Tuna Conventions Act of 1950 to implement the Antigua Convention. H.Res. 47 would express the sense of the House of Representatives urging that the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) adopt stronger protections for sharks and bluefin tuna.

Health

Section 201(a) of H.R. 397, Section 232(a) of H.R. 105, and Section 501(a) of H.R. 299 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.

Marketing and Trade

Section 7 of H.R. 480 would establish a Gulf of Mexico seafood marketing program. Section 4(b) of S. 108 would modify the tariff on vulcanized rubber lug boot bottoms for use in fishing waders.

Sport Fisheries

Section 4(b) of S. 108 would modify the tariff on vulcanized rubber lug boot bottoms for use in fishing waders. Sections 203(b) and 401(b) of H.R. 662 would extend the authority to make expenditures from the Highway Trust Fund and other trust funds, including various programs under the Sport Fish Restoration and Boating Trust Fund, through the end of FY2011.

Jobs

Section 7(b)(2)(H) of H.R. 192/S. 179 would promote cooperative research and education efforts with commercial fishermen operating within the Gulf of the Farallones National Marine Sanctuary and the Cordell Bank National Marine Sanctuary. H.R. 594 would establish a jobs creation grant program to support cooperative research and monitoring, recreational fishing registry programs, marine debris removal, and restoration of coastal resources.

Habitat

Section 11 of S. 203 would amend the Oil Pollution Act of 1990 to provide specific funding for rescue, rehabilitation, and recovery of marine species, including marine birds and sea turtles. Section 505 of H.R. 501 would establish an Ocean Resources Conservation and Assistance Fund to provide specific support for rescue, rehabilitation, and recovery of marine species; conservation of marine ecosystems; improvement of marine ecosystem resiliency; and protection of marine biodiversity. H.Res. 80 would express the sense of the House in support of the goals and ideals of National Marine Awareness Day, celebrating the diversity of marine fisheries and wildlife and the richness of marine ecosystems.

A number of bills in the 112th Congress proposed to address various water quality and aquatic/marine ecosystem restoration issues more generally; for more information on these issues, see CRS Report R41594, *Water Quality Issues in the 112th Congress: Oversight and Implementation*, by Claudia Copeland, and CRS Report RL34329, *Crosscut Budgets in Ecosystem Restoration Initiatives: Examples and Issues for Congress*, by Pervaze A. Sheikh and Clinton T. Brass.

Aquaculture

Background

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.²⁴ The diversity of aquaculture is typified by such activities as freshwater fish farming (e.g., catfish and trout farms);²⁵ shellfish and seaweed culture; net-pen culture, used by the salmon industry, wherein fish remain captive throughout their lives in marine pens; 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 grew from approximately 1 million metric tons in the early 1950s to 51.7 million metric tons in 2006 (the most recent FAO data available).²⁶ Meanwhile, the harvest from wild populations has been static for the last two decades, and further growth of fish production for human consumption is expected to rely on aquaculture. In 2006, FAO estimated that 47% of all fish consumed by humans came from aquaculture. FAO predicts that world aquaculture production could exceed 130 million metric tons by 2030, more than double the current wild fish harvest for human consumption.²⁷

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 Mississippi.²⁸ The domestic aquaculture industry faces strong competition from imports of foreign aquacultural products, from the domestic poultry and livestock industries, and from wild harvests. In addition, aquaculture operations face increasing scrutiny for habitat destruction, pollution, and other concerns. The major federal statute affecting U.S. aquaculture is the National Aquaculture Act of 1980, as amended (16 U.S.C. §§ 2801 et seq.). The purpose of this act is to ensure coordination of various federal programs and policies affecting the aquaculture industry, and to promote and support aquaculture research and development.

²⁴ For more background information, see CRS Report RL32694, *Open Ocean Aquaculture*, by Harold F. Upton 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 Eugene Buck at gbuck@crs.loc.gov.

²⁵ For statistics on freshwater production, see <http://www.agcensus.usda.gov/Publications/2002/Aquaculture/index.asp>.

²⁶ For more details, see <ftp://ftp.fao.org/docrep/fao/011/i0250e/i0250e01.pdf>.

²⁷ For a discussion of FAO projections for 2030, see <http://www.fao.org/docrep/007/y5648e/y5648e07.htm#bm07.1>.

²⁸ See <http://www.agcensus.usda.gov/Publications/2002/Aquaculture/AQUACEN.pdf>. For the latest information on domestic production and statistics, see <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1375>.

In October 2007, NOAA released a 10-year plan for its marine aquaculture program.²⁹ On February 9, 2011, the Department of Commerce and NOAA released complementary draft national aquaculture policies to address concerns related to aquaculture development in the EEZ.³⁰ Legislation to modify the regulatory environment and promote the development of U.S. offshore, open-ocean aquaculture was introduced in the 110th Congress, but was not considered by either chamber, and was not reintroduced in the 111th Congress.

In 2009, the Gulf of Mexico Fishery Management Council voted to approve a plan to issue aquaculture permits and regulate aquaculture in federal waters of the Gulf of Mexico. NOAA is also developing a national aquaculture policy to complement this action. Environmentalists and some fishing industry representatives have opposed the plan because of concerns related to environmental protection and potential harm to wild fish populations. Many who oppose the plan support a precautionary approach and development of national aquaculture standards. In response to these concerns, legislation to establish a regulatory system for offshore aquaculture in the U.S. EEZ was introduced during the 111th Congress, but was not considered on the floor in either chamber.

Aquaculture Issues in the 112th Congress

The 112th Congress may consider whether NOAA policies and regulations can balance development and regulation of the aquaculture industry in the U.S. Exclusive Economic Zone, and whether to constrain regional fishery management council authority to permit aquaculture in federal offshore waters through fishery management plans and their amendment.

In the 112th Congress, S. 50 would direct the Departments of Commerce and of Health and Human Services, the Federal Trade Commission, and other federal agencies to coordinate and strengthen programs to better ensure that seafood in interstate and foreign commerce is fit for human consumption. H.R. 278 would amend the Internal Revenue Code of 1986 to provide for tax-exempt qualified small issue bonds to finance fish processing property. S. 229 and H.R. 520 would amend the Federal Food, Drug, and Cosmetic Act to require labeling of genetically engineered fish. S. 230 and H.R. 521 would amend the Federal Food, Drug, and Cosmetic Act to prevent the approval of genetically engineered fish for human consumption. S. 256 would amend the Internal Revenue Code of 1986 to allow a credit against income tax for equity investments in aquaculture small businesses. H.R. 574 would prohibit the Secretary of the Interior and the Secretary of Commerce from authorizing commercial finfish aquaculture operations in the EEZ unless specifically authorized by Congress.

²⁹ Available at <http://aquaculture.noaa.gov/about/tenyear.html>.

³⁰ The draft NOAA policy is available at <http://www.nmfs.noaa.gov/aquaculture/docs/noaadraftaqpolicy.pdf>; the draft Department of Commerce policy is available at <http://www.nmfs.noaa.gov/aquaculture/docs/docdraftaqpolicy.pdf>; these documents are open for public comment through April 11, 2011.

Marine Mammals

Background

In 1972, Congress enacted the Marine Mammal Protection Act (MMPA; 16 U.S.C. §§ 1361 et seq.), due in part to high 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 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, and porpoises (cetaceans), and seals and sea lions (pinnipeds). The Secretary of the Interior, acting through the Fish and Wildlife Service (FWS), is responsible for walrus, 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 a negligible impact on any marine mammal species or stock, provided that monitoring requirements and other conditions are met.

The MMPA 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 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. The eastern tropical Pacific tuna fishery initially was excluded from the incidental take regimes. 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 the International Dolphin Conservation Program Act.

More recently, Section 319 of P.L. 108-136 amended the MMPA in 2003 to provide a broad exemption for “national defense” activities. 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.³¹ The Navy’s use of mid-frequency sonar and its possible effects on marine mammals has been the focus of much controversy and litigation.³²

Marine Mammal Protection Act Reauthorization

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. This reauthorization also included amendments providing for developing and implementing take-reduction plans for stocks that have been reduced or are being maintained below their optimum sustainable population levels due to interactions with commercial fisheries, and for studying pinniped-fishery interactions.³³

A December 2008 study by the Government Accountability Office (GAO) found that limitations in information available make it difficult for NMFS to accurately determine which marine mammal stocks meet the statutory requirements for establishing take reduction teams.³⁴ GAO found that NMFS did not have a human-caused mortality estimate or a maximum removal level for 39 of 113 (35%) marine mammal stocks, making it impossible to determine their strategic status in accordance with MMPA requirements. For the remaining 74 stocks, NMFS data have significant limitations that call their accuracy into question. NMFS contends that funding constraints limit their ability to gather sufficient data. In addition, NMFS has not established take reduction teams for 14 marine mammal stocks for which NMFS data show them to be strategic and interacting significantly with commercial fisheries.

The 112th Congress may consider bills to reauthorize and amend the MMPA, either comprehensively or through specific programs, such as the John H. Prescott Marine Mammal Rescue Assistance Grant Program (16 U.S.C. § 1421f-1). Other measures may address specific marine

³¹ For more background, see CRS Report RS22149, *Exemptions from Environmental Law for the Department of Defense (DOD)*, by David M. Bearden.

³² For more background, see CRS Report RL34403, *Whales and Sonar: Environmental Exemptions for the Navy’s Mid-Frequency Active Sonar Training*, by Kristina Alexander, and CRS Report RL33133, *Active Military Sonar and Marine Mammals: Events and References*, by Eugene H. Buck and Kori Calvert.

³³ 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.

³⁴ U.S. Government Accountability Office, *Improvements Are Needed in the Federal Process Used to Protect Marine Mammals from Commercial Fishing*, GAO-09-78 (December 8, 2008). Available at <http://www.gao.gov/new.items/d0978.pdf>.

mammal habitat and management concerns, such as how to better understand and deal with the effects of increasing noise in the ocean. In some cases, legislation might address individual species issues, such as proposals to expand the research program seeking the recovery of the southern sea otter.

Legislation has been introduced in the 112th Congress to address several issues related to the MMPA.

- Section 3 of H.R. 332 would require compliance by all federal defense agencies with certain environmental laws including MMPA.
- Section 305(a) of S. 52 would amend the MMPA to authorize appropriations thorough FY2013 to study of the effect of intentional encirclement (including chase) on dolphins incidentally taken in purse seine fishing for yellowfin tuna in the eastern tropical Pacific Ocean.
- H.R. 594 would establish a jobs creation grant program to support cooperative research to collect data to improve marine mammal stock assessments.

Additional Marine Mammal Issues in the 112th Congress

Legislation has been introduced in the 112th Congress to address several other issues related to marine mammals generally.

Habitat

S. 203 would direct NOAA to research oil spill prevention and response in the Arctic waters, including assessment of impacts on Arctic marine mammals, and amend the Oil Pollution Act of 1990 to provide specific funding for rescue, rehabilitation, and recovery of marine species, including marine mammals. Section 224 of H.R. 501 would amend Section 20 of the Outer Continental Shelf Lands Act relating to determining the cumulative impacts on marine mammal species and stocks and their subsistence use.

Polar Bears

H.R. 39 would delist the polar bear as a threatened species under the Endangered Species Act of 1973.

Miscellaneous Marine Mammal Issues

Section 34 of H.R. 235 and Section 506(b)(21) of H.R. 408/S. 178 would repeal exchange programs for Alaska Natives, Native Hawaiians, and their historical whaling and trading partners in Massachusetts in Subpart 12 of Part D of Title V of the Elementary and Secondary Education Act of 1965. H.Res. 80 would express the sense of the House in support of the goals and ideals of National Marine Awareness Day, celebrating the diversity of marine wildlife and the richness of marine ecosystems.

Appropriations

Appropriations also play an important role in federal fisheries management, providing funds for various programs and initiatives. In addition, appropriations bills have served as vehicles for some changes in MSFCMA provisions.

National Marine Fisheries Service

For NMFS, funding for fisheries and marine mammal programs including management under the MSFCMA is provided within NOAA's Operations, Research, and Facilities (OR&F) Account. (See **Table 1.**) NMFS employs more than 2,800 scientists, policy analysts, engineers, boat captains, computer modelers, statisticians, enforcement officers, secretaries, fisheries managers, economists, and various other skilled workers to implement its programs. Early in FY2011, NMFS is operating with continued funding at FY2010 levels through March 4, 2011, under a continuing resolution (P.L. 111-322). In the 112th Congress, H.R. 1 (seeking to provide continuing appropriations for the remainder of FY2011) includes language that would limit funding for the Pacific Coastal Salmon Recovery to \$50 million (Section 1307, Division B, Title III) and prohibit funds from being used by NMFS for implementing certain actions described in a biological opinion for the operations of the Central Valley Project and the California State Water Project (Section 1475, Division B, Title IV).

Table 1. NMFS Appropriations, FY2010-FY2011

(in thousands of dollars)

	<i>FY2010 Request</i>	<i>FY2010 Enacted</i>	<i>FY2011 Request</i>	<i>FY2012 Request</i>
Fisheries	499,949	512,097	537,263	
Protected Species	243,538	201,577	210,251	
Habitat Conservation	44,023	50,343	54,918	
Enforcement Surveillance	103,132	106,747	105,345	
Cong.-Directed Projects		33,775		
SUBTOTAL (OR&F)	890,642	904,539	907,777	910,404
Procurement, Acquisition, Construction	0	0	0	0
Pacific Coastal Salmon Recovery	0 ^a	80,000	65,000	65,000
Other Accounts	21,110	23,600	350	17,700
TOTAL	911,752	1,008,139	973,127	993,104

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

- a. The Administration's budget request proposed to transfer \$50 million from species recovery grants within NMFS to fund activities within the Pacific Coastal Salmon Recovery account.

The Administration's FY2012 budget request is expected to be released in early February 2011.³⁵ Appropriations issues in the 112th Congress might include not only what level of funding is adequate to implement the programs required by law, but also what levels of funding might be provided for alleviating the effects of disasters on fisheries and how much funding should be provided to restore salmon habitat and promote the recovery of endangered and threatened salmon stocks.

Fish and Wildlife Service

Within the FWS budget, an account for "fisheries and aquatic resource conservation" includes funding for the National Fish Hatchery operations, aquatic invasive species programs, and marine mammal programs. (See Error! Reference source not found..) These programs employ about 800 individuals, located at 70 National Fish Hatcheries, 65 Fish and Wildlife Conservation Offices, one historic National Fish Hatchery, nine Fish Health Centers, and seven Fish Technology Centers.

Early in FY2011, FWS is operating with continued funding at FY2010 levels through March 4, 2011, under a continuing resolution (P.L. 111-322). In the 112th Congress, H.R. 1 (seeking to provide continuing appropriations for the remainder of FY2011) includes language that would prohibit funds from being used by FWS for implementing certain actions described in a biological opinion for the operations of the Central Valley Project and the California State Water Project (Section 1475, Division B, Title IV).

The Administration's FY2012 budget request was released on February 14, 2011.³⁶ The decrease in the FY2012 request was primarily from a decrease of \$11,609,000 proposed for the National Fish Hatchery System. The central issue in the 112th Congress with these appropriations might be expected to focus on what level of funding is adequate to implement the programs required by law.

Table 2.FWS Appropriations, FY2010-FY2011

(in thousands of dollars)

	FY2010 Request	FY2010 Enacted	FY2011 Request	FY2012 Request
Fisheries and Aquatic Resource Conservation	140,695	148,214	142,477	136,012

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

³⁵ For more information on NMFS FY2010 appropriations, see CRS Report R40840, *The National Oceanic and Atmospheric Administration (NOAA) Budget for FY2010*, by Harold F. Upton.

³⁶ For more comprehensive information on all FWS FY2010 and FY2011 appropriations accounts, see CRS Report R41258, *Interior, Environment, and Related Agencies: FY2011 Appropriations*, coordinated by Carol Hardy Vincent.

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