TWENTY-EIGHT YEARS AND COUNTING: CAN THE MAGNUSON-STEVENS ACT DELIVER ON ITS CONSERVATION PROMISE?

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INTRODUCTION

Soon, the Magnuson-Stevens Fishery Conservation and Management Act (FCMA or the Act) will celebrate its thirtieth anniversary.[1] When passed in 1976, the Act ushered in a new era of federal fishery management in the United States. Driven in part by alarm at the biological effects of foreign fishing in the northwest Atlantic and in part by a desire to capture the economic and social benefits of those fisheries for Americans, the Act specified, without explicitly prioritizing, seven new "national standards" for managing fisheries in the new 200-mile offshore "fishery conservation zone." These parameters represented the multiple, and sometimes, competing interests inherent in the long-term management of this economically valuable public resource.

Federal fishery policy after the passage of the Act struggled to strike the proper balance between conservation and economic development of the nation's living marine resources. The regional fisheries management councils created to implement the Act in federal waters and the federal agency designated to enforce the provisions of the Act often seemed to founder on the various policy choices identified by Congress, though not

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1. Magnuson Fishery Conservation and Management Act, Pub. L. No. 94-265, 90 Stat. 331 (1976), (codified as amended at 16 U.S.C. §§ 1801–1883 (2000)). The Magnuson Fishery Conservation Act was originally entitled the Fishery Conservation and Management Act of 1976, but was renamed as the Magnuson Fishery Conservation Act of 1976, in 1980. American Fisheries Promotion Act, Pub. L. No. 96-561 Title II § 238(a), 94 Stat. 3275, 3287, 3300 (1980). The Act was later renamed the Magnuson-Stevens Fishery Conservation and Management Act. Department of Commerce and Related Appropriations Act, 1997, Pub. L. No. 104–208, div. A, title I, 101(a) [title II, 211(b)], 110 Stat. 3009, 3009–41 (1996).

ranked, which resulted in widely different strategies, practices, and consequences.[2]

In response to growing evidence that fisheries management in the United States increasingly failed to achieve the potential national benefits associated with a well-managed resource, Congress made substantial changes to the original Act in legislation known as the Sustainable Fisheries Act (SFA).[3] The SFA amendments were designed to cure a number of structural deficiencies and gaps in the original legislation. The new provisions obligated the federal marine fisheries management agency, National Oceanic and Atmospheric Administration (NOAA) Fisheries (formerly known as the National Marine Fisheries Service or NMFS) to develop objective and measurable overfishing definitions for all fish populations under management, to end overfishing, to rebuild all overfished populations within a strict timeframe, to monitor and avoid or minimize the bycatch of non-targeted marine species, and to protect essential fish habitat.[4] Through these amendments, a unanimous Congress resolved earlier policy ambiguities and set federal policy firmly on the path to achieving maximum long-term economic benefits for all U.S. fisheries by setting as the paramount objectives the restoration and conservation of fish populations at optimum yield levels and the protection of essential fish habitats.

Or had they? Within three years of passage of the SFA, conservation organizations in New England and elsewhere were back in federal court challenging the implementation of the new provisions of the Magnuson-Stevens Act.[5] Apparently, not even a unanimous and unequivocal congressional mandate was sufficient to budge the intransigent vested interests embedded in the federal fishery process, let alone produce the sustainable, healthy fish populations and fisheries that would create the greatest national benefits from this remarkable resource.

This article looks at the current state of federal fisheries management from a New England perspective. The fisheries of the Northwest Atlantic and their managing council, the New England Fishery Management Council (NEFMC), have played a pivotal role by providing a variety of case studies for Congress throughout the Magnuson-Stevens Act's history, from its birth to its latest incarnation. Looking at the implementation of the new Magnuson-Stevens Act through the prism of the New England groundfish

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2. Symposium, *The Magnuson Fishery Conservation and Management Act: Retrospect and Prospect*, 9 TUL. ENVTL. L.J. 211 *passim* (1996).

3. Sustainable Fisheries Act, Pub. L. No. 104-297, 110 Stat. 3559 (1996).

4. *Id.*

5. *See, e.g.*, Conservation Law Found. v. Evans, 209 F. Supp. 2d 1, 5 (D.D.C. 2001).

fishery allows an examination of where the managers have delivered on the Act's new conservation promises, where they have fallen short, and where one might look to begin to chart a better course for the future of U.S. fisheries management.

I. NEW ENGLAND GROUNDFISH FISHERY PRIOR TO THE SFA AMENDMENTS

New England's groundfish fishery is legendary, and much of this legend is supported by substantial fact.[6] The abundance and diversity of the target fish species, as well as the variety of gear types and vessel sizes utilized by the fishing communities, which are spread out among the many different ports defining the region, have characterized the New England groundfish fishery for hundreds of years.[7] In New England, the term "groundfish" refers to a "multispecies" complex of twelve species of bottom dwelling fish that are managed as twenty different fish populations.[8] These species are frequently found in the same areas of the ocean and are typically susceptible to being caught by the same groundfish fishing gear.[9]

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6. For an overview of the history and first fifteen years of New England federal management history under the Magnuson Act, see Peter Shelley et al., *The New England Fisheries Crisis: What Have We Learned?*, 9 TUL. ENVTL. L.J. 221, 223–33 (1996).

7. The majority of the fishing effort in New England waters comes from Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, and New York, although boats hailing from all along the Atlantic seaboard have participated in the rich Gulf of Maine, Georges Bank, and Great South Channel fisheries over the years.

8. The twelve species currently included in the Northeast Multispecies Fishery Management Plan are Atlantic cod (*Gadus morhua*), witch flounder (*Glyptocephalus cynoglossus*), American plaice (*Hippoglossoides platessoides*), yellowtail flounder (*Limanda ferruginea*), haddock (*Melanogrammus aeglefinus*), pollock (*Pollachius virens*), winter flounder (*Pleuronectes americanus*), windowpane flounder (*Scophthalmus aquosus*), Acadian redfish (*Sebastes fasciatus*), white hake (*Urophycis tenuis*), Atlantic halibut (*Hippoglossus hippoglossus*), and ocean pout (*Zoarces americanus*). Atlantic cod are further managed as two sub-populations: Georges Bank cod and Gulf of Maine cod; yellowtail flounder are managed as four sub-populations: Southern New England yellowtail flounder, Mid-Atlantic yellowtail flounder, Cape Cod/Gulf of Maine yellowtail flounder, and Georges Bank yellowtail founder; haddock are managed as two sub-populations: Georges Bank haddock and Gulf of Maine haddock; windowpane flounder are managed as two sub-populations: Southern New England/mid-Atlantic windowpane flounder and Gulf of Maine/Georges Bank windowpane flounder; and winter flounder are managed as three sub-populations: Southern New England/mid-Atlantic winter flounder, Georges Bank winter flounder, and Gulf of Maine winter flounder. There is currently some scientific uncertainty about the appropriate sub-populations of yellowtail flounder, and NOAA Fisheries now intends to treat Southern New England yellowtail flounder and Mid-Atlantic yellowtail flounder as a single sub-population for management purposes.

9. These characteristics of the fish complex make the development of management measures that try to direct fishing effort away from vulnerable, overfished populations of fish and toward healthier, rebuilt populations extremely challenging. These management measures are often only marginally effective at avoiding the "bycatch" of the non-target species.

By the 1990s, heavy fishing pressure on the New England groundfish complex by the domestic coastal and offshore fleets reduced the estimated total biomass of the twelve groundfish species to the lowest aggregate levels ever noted by scientists.[10] The nadir fell in the 1994–1995 period, the same time that the first comprehensive plan designed to stop overfishing on cod, haddock, and yellowtail flounder populations in the complex went into effect.[11] This plan, known as Amendment 5 to the Northeast Multispecies Fishery Management Plan (Northeast Multispecies FMP), was the result of groundbreaking litigation filed by the Conservation Law Foundation (CLF) and the Massachusetts Audubon Society in 1991 to halt overfishing on Atlantic cod, haddock and the yellowtail flounder complex.[12] The principal management measures implemented by Amendment 5 included: closing the fishery to new entrants with vessels greater than forty-five feet, increasing the mesh size of the fishing gear, creating seasonal and year-round area closures, and reducing over a period of years the number of days that fishermen would have available to go fishing for groundfish.[13]

The population assessments on the groundfish complex by NOAA Fisheries' Northeast Fisheries Science Center (NEFSC) that were conducted during the development of Amendment 5, however, made it immediately apparent to most people involved in the fishery that Amendment 5 was outdated even before it went into effect on March 1, 1994.[14] In late 1993 and into 1994, scientists reported that Georges Bank haddock and southern New England yellowtail flounder stocks had collapsed, and in August 1994, they reported that the Georges Bank cod stock was in "imminent danger" of collapse.[15] A highly unusual special advisory on Georges Bank groundfish declared that measures in Amendment 5 were "clearly inadequate" to prevent the collapse of cod or allow the rebuilding of yellowtail flounder.[16] The scientific advice to managers was to reduce fishing mortality for these two species "to as low a level as possible, approaching zero."[17] Following these grim reports of

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10. *See* Shelley et al., *supra* note 6, at 225, 230–32.

11. *Id.*

12. While other public interest litigation included causes of action framed under the conservation provisions of the Magnuson Act, the CLF/Massachusetts Audubon litigation in New England in 1991 was the first time that conservationists directly challenged a fishery management plan for violations of the Magnuson Act, some fourteen years after implementation of the Act. *See infra* note 30 and accompanying text.

13. Shelley et al., *supra* note 6, at 230.

14. *Id.* at 230, 230 n.52 and accompanying text.

15. NATIONAL MARINE FISHERIES SERVICE, NOAA, REPORT OF THE 18TH NORTHEAST REGIONAL STOCK ASSESSMENT WORKSHOP (18th SAW): THE PLENARY 42, 53 (1994).

16. *Id.* at 54.

17. *Id.* at 53.

actual and impending stock collapses, the National Marine Fisheries Service, through emergency action, closed over 6500 square miles of Georges Bank and southern New England waters to fishing to prevent further damage to these groundfish populations.[18]

The NEFMC immediately launched preparation of an even more comprehensive amendment to the Northeast Multispecies FMP, Amendment 7, to further reduce fishing pressure so that rebuilding could take place on Southern New England yellowtail founder, Gulf of Maine cod, and Georges Bank cod, haddock and yellowtail flounder, and to incorporate the large year-round area closures on Georges Bank and elsewhere that had been implemented by emergency rule.[19] Amendment 7 sought to cut fishing mortality on these stocks of cod, haddock, and yellowtail flounder by some eighty percent over a two-year period from the estimated 1993 mortality levels.[20] Amendment 7 also developed fishing mortality targets for rebuilding these major groundfish stocks.[21] Even with the drastic level of reductions prescribed by Amendment 7, rebuilding to minimally acceptable biomass levels was predicted to take from three to four years in the case of the yellowtail flounder populations and well over ten years in the case of haddock.[22]

By this time, the social and economic costs of the historical mismanagement of the groundfish complex were mounting rapidly. Traditional groundfishing ports in downeast Maine, such as Stonington and Eastport, were no longer participating in the groundfish fishery because of the combination of the lack of access to viable fish populations within reach of their smaller boats and the attraction of the strong lobster populations abundant in their coastal waters.[23] Total New England landings of Atlantic cod fell forty-one percent from 22,877 metric tons (mt)[24] in 1993 to 13,693 mt in 1995, below the previously record low landings in 1960; haddock

18. Northeast Multispecies Fishery, 59 Fed. Reg. 63,926 (Dec. 12, 1994).

19. Northeast Multispecies Fishery; Amendment 7 61 Fed. Reg. 8540, 8540–42 (proposed Mar. 5, 1996) (to be codified at 50 C.F.R. pt. 651).

20. *Id.* at 8542; Northeast Multispecies Fishery; Amendment 7, 61 Fed. Reg. 27,710, 27,714 (May, 31 1996) (to be codified at 50 C.F.R pt. 651).

21. Northeast Multispecies Fishery; Amendment 7, 61 Fed. Reg. at 8542; Northeast Multispecies Fishery; Amendment 7, 61 Fed. Reg. at 27,711.

22. *See* Shelley et al., *supra* note 6, at 233. *See generally* Associated Fisheries of Maine, Inc. v. Daley, 954 F. Supp. 383, 389–90 (D. Me. 1997), *aff'd*, 127 F.3d 104, 118 (1st Cir. 1997). The Federal District of Maine rejected the Associated Fisheries of Maine, Inc.'s challenge to Amendment 7 on the basis of its disastrous effect on the Maine trawler fleet and on its alleged weak scientific and economic analysis. The Court noted the regrettably harsh effect of the amendment on the fishing industry and coastal communities, but found that the Secretary acted within his broad discretion to promulgate regulations implementing fishery management plans. *Id.* at 390.

23. *See Daley*, 954 F. Supp. at 385.

24. A metric ton equals 1.02 U.S. tons.

landings declined sixty-three percent from 878 mt in 1993 to 328 mt in 1994, but had started to inch back up in 1995; and yellowtail flounder landings declined forty-six percent from 3,621 mt in 1993 to a record low 1,928 mt in 1995.[25]

Over the same time frame, landings of American plaice declined twenty percent; witch flounder declined fifteen percent; winter flounder landings declined twenty-seven percent; windowpane flounder declined fifty-four percent; white hake declined forty-two percent; redfish declined forty-five percent; and pollock landings declined forty-one percent to the lowest catch since 1968.[26] While these reductions were the result of a combination of low biological abundance of the species and the combined management measures, the social and economic impacts of these reductions were severe and felt throughout the region. Moreover, the measures were still not adequate to protect the fish populations. At the end of 1997, the NEFMC's science advisors estimated that another seventeen percent reduction on average in fishing mortality from 1996 levels was needed to protect cod, haddock and yellowtail flounder.[27]

Despite the universal consensus in the scientific community that Amendment 7 was critical to reversing further declines in New England groundfish, most members of the New England congressional delegation continued to pressure the Department of Commerce against implementing the amendment.[28] Given the strong conservation tenor of the discussions that were emerging from Congress at this time as part of the reauthorization process of the Magnuson-Stevens Act, and the bi-partisan consensus about the need for major reform, it might seem surprising for New England's elected federal officials to continue to support efforts to stall management

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25. NEW ENGLAND FISHERIES MANAGEMENT COUNCIL, REPORT OF THE NEW ENGLAND FISHERY MANAGEMENT COUNCIL'S MULTISPECIES MONITORING COMMITTEE 7–8 (1997) [hereinafter COMMITTEE REPORT]. Contrary to the apocalyptic economic visions of opponents to Amendments 5 and 7, the economic consequences of the measures were muted by strong prices for the fish that were landed during this period. For example, during the period 1997–1999, landings from the large otter trawl-rigged vessel sector declined from 112.2 thousand mt in 1997 to 106.2 thousand mt in 1999. Ex-vessel revenues, however, rose from $174.2 million in 1997 to $175.9 million in 1999. B. POLLARD ROUNTREE ET AL., NOAA FISHERIES NORTHEAST FISHERIES SCIENCE CTR., FISHERY ECONOMIC TRENDS, *at* http://www.nefsc.noaa.gov/sos/econ/tb2.htm (last revised Apr. 2001).

26. COMMITTEE REPORT, *supra* note 25 at 7–8. For more information on catch data by fish species and year see NOAA Fisheries Statistics and Economics website, *at* http://www.st.nmfs.gov/st1/commercial/landings/annual_landings.html.

27. COMMITTEE REPORT, *supra* note 25, at 81.

28. *See, e.g.*, Letter from Representative Barney Frank, to Secretary of Commerce Ronald H. Brown (February 26, 1996) ("strongly" urging denial of Amendment 7) (on file with author and Vermont Law Review); Letter from Representative Barney Frank, to Mr. D. James Baker, Administrator of the U.S. Department of Commerce (May 1, 1996) (strongly urging "to at a minimum delay [in] implementation of Amendment 7") (on file with author and Vermont Law Review).

reforms of groundfish in New England. It illustrates, however, the strong emotional hold that commercial fishing sectors often have on congressional sentiments and the sensitivity that congressional leaders have for the plight of fishing communities in their districts.

II. THE SUSTAINABLE FISHERIES ACT

As New England struggled in the mid-1990s to develop and implement a Northeast Multispecies FMP that met the Magnuson Act's original conservation objectives, congressional debate over reauthorization of the Act heated up.[29] Despite success in court that forced NOAA Fisheries to begin to address overfishing in New England and elsewhere, conservationists concluded that the original statute was structurally flawed and incapable of effectively controlling the rate of fishing.[30] The statute not only failed to provide an appropriate stewardship and ecosystem framework for producing long-term sustainable fisheries, its resource development objectives promoted the very excessive fishing practices and unsound stewardship practices that the conservation objectives of the statute were aimed at preventing.[31] At the time of the reauthorization debate, NOAA Fisheries estimated that of the 231 recognized fish stocks nationwide, 65 were overfished, 71 were fully exploited, and the status of 42 stocks were unknown.[32]

There were several problems with the Act at that time. The existing Magnuson Act provisions allowed regional management councils to set fishing levels above those that were biologically sustainable in order to meet short-term economic or social demands.[33] The existing law also did not establish any expectation to expeditiously rebuild overfished fish populations. Further, it was well known that bycatch was resulting in tremendous waste due to the catch and discard of so-called "non-target" species, and the Magnuson Act was entirely silent on bycatch.[34] Finally, the Magnuson Act paid scant attention to habitat protection, requiring only that FMPs "include readily available information regarding the effects of

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29. Suzanne Iudicello et al., *Putting Conservation into the Fishery Conservation and Management Act: The Public Interest in Magnuson Reauthorization*, 9 TUL. ENVTL. L.J. 339, 341–42 (1996).

30. Conservation Law Found., Inc. v. Mosbacher, No. 91-11759-MA, 1991 WL 501640 (D. Mass. Aug. 28, 1991), *aff'd sub nom.* Conservation Law Found., Inc. v. Franklin, 989 F.2d 54 (1st Cir. 1993).

31. Iudicello et al., *supra* note 29, at 342.

32. *Id.* at 341.

33. *Id.* at 342 (citing 16 U.S.C. § 1801(6)(5)(B) (1994)).

34. *Id.* at 343. Worldwide, scientists estimate that fishermen discarded about twenty-seven million metric tons of nontargeted fish each year. *Id.*

habitat alteration on fisheries and that councils comment and make recommendations on activities . . . likely to impact anadromous fish habitat."[35]

In an unprecedented effort to address protection of the public's common interest in marine fish resources, more than 100 organizations representing conservationists, recreational fishermen, and even a number of frustrated, smaller-scale coastal fishermen organized as the Marine Fish Conservation Network. They entered the reauthorization fray seeking to reform fisheries management in three key areas: ending overfishing, minimizing bycatch, and increasing habitat protection.[36]

In 1996, during an era in which a Republican-controlled Congress was otherwise engaged in launching unprecedented "attempts to roll back America's environmental laws,"[37] a unanimous Congress responded by enacting the Sustainable Fisheries Act[38] (SFA) "to conserve and manage the fishery resources found off the coasts of the United States."[39]

The SFA substantially revised the Magnuson Act's national standards in a number of areas.[40] The most important change was accomplished through revisions to the definition of "optimal yield." National Standard 1 (NS1) states that: "Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry."[41] The SFA added a new definition for "overfishing," which made clear that Congress intended fishing mortality rates to be set on the basis of producing "maximum sustainable yield[s]" from each fishery.[42] Prior to the amendments, "optimum yield" was defined as the amount of fish that could be removed based on the "maximum sustainable yield from such fishery, *as modified* by

35. *Id.* at 343–44.

36. *Id.* at 342.

37. *Id.* at 339.

38. Sustainable Fisheries Act, Pub.L. No. 104-297, 110 Stat. 3559 (1996).

39. 16 U.S.C. § 1801(b)(1) (2000).

40. While Congressional amendments to the Magnuson Act substantially improved the statutory framework for fisheries management in the United States, it must be stressed that the Act's fundamental goal remains resource development. Conservation objectives from that perspective are not advanced for their own intrinsic merit, or for scientific purposes, rather as necessary conditions for protecting the "valuable and renewable natural resources . . . [that] contribute to the food supply, economy, and health of the Nation and provide recreational opportunities." 16 U.S.C. § 1801(a)(1)(2000).

41. *Id.* § 1851(a)(1).

42. *Id.* § 1802(28)–(29). "Maximum sustainable yield" (MSY) means the largest annual catch that fishers can take continuously from a stock without overfishing it under prevailing ecological conditions. 50 C.F.R. § 600.310(c)(1)(i) (2002).

any relevant economic, social, or ecological factor."[43] The modification parameter was widely interpreted as authorization for developing management measures that allowed maximum sustainable yield to be exceeded in fisheries, so long as there was an economic or social justification for doing so.[44]

The SFA changed the definition of "optimal yield" to indicate that maximum sustainable yield was now the maximum yield that could be authorized from any fishery. Specifically, the new language states that optimum yield is the yield from a fishery that "is prescribed on the basis of the maximum sustainable yield from the fishery, *as reduced* by any relevant social, economic, or ecological factor."[45] This was a significant change to fishery management philosophy and clearly reflected congressional awareness that greater flexibility around this concept was undercutting the long-term objectives of producing high-yield, sustainable fisheries.[46] The new definition also specified that the optimum yield from a fishery that was overfished had to be set at a level that "provides for rebuilding to a level consistent with producing the maximum sustainable yield in such fishery."[47]

Indeed, rebuilding the nation's depleted fish populations is a major focus of the SFA. The cornerstone of the SFA's approach to rebuilding fish populations is its requirement that: (1) each FMP specify "objective and measurable criteria"[48] for determining when a stock is overfished[49] or when overfishing[50] is occurring; and (2) each FMP establish mandatory measures for rebuilding an overfished stock by a certain time or implement measures to prevent overfishing in a situation where the relevant fishery is just

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43. 16 U.S.C. § 1802(21)(B) (1994) (depicting a pre-1996 version of the statute) (emphasis added).

44. The implementing regulations provided that "food production" and "recreational opportunities . . . should receive serious attention when considering the economic, social, or ecological factors used in reducing MSY [maximum sustainable yield] to obtain OY [optimum yield]." 50 C.F.R. § 600.310(f)(2) (2002).

45. 16 U.S.C. § 1802(28)(B) (2000) (emphasis added).

46. This issue was extensively debated by Congress; the vote on the amendments that established maximum sustainable yield as an upper boundary on optimal yield passed 304-113 in the House of Representatives. *See* Magnuson-Stevens Act Provisions; National Standard Guidelines, 63 Fed. Reg. 24,212, 24,216 (May 1, 1998) (50 C.F.R. pt. 600) (NOAA Fisheries commenting on debate of OY/MSY).

47. 16 U.S.C. § 1802(28)(C).

48. *Id.* § 1853(a)(10).

49. A stock is "overfished" or subject to "overfishing" when the "rate or level of fishing mortality . . . jeopardizes the capacity of a fishery to produce the maximum sustainable yield on a continuing basis." *Id.* § 1802(29).

50. Based on the NOAA Fisheries' guidelines for implementing NS 1, overfishing of a stock is defined in relation to whether the fishing mortality rate is above a prescribed threshold as established within a fisheries management plan. 50 C.F.R. § 600.310(d) (2002).

approaching the overfishing or overfished threshold.[51] Congress directed that such rebuilding programs should be "as short as possible" but "not [to] exceed [ten] years [with certain exceptions]."[52]

The SFA also added a new national standard, National Standard 9 that required managers to avoid or minimize bycatch.[53] In addition to the obvious waste of fish and other marine life resulting from bycatch, it can also impede efforts to achieve sustainable fisheries by increasing the uncertainty in measuring total fishing-related mortality, making it more difficult to accurately assess the status of stocks, set appropriate fishing levels, and ensure levels are not exceeded. Bycatch can also preclude more productive uses of fishery resources.[54] The SFA requires all FMPs to "establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery, and include conservation and management measures" adequate to meet the bycatch minimization standard.[55]

Finally, in response to the growing evidence that the productive capacity of the nation's oceans might be suffering long-term degradation from the effects of fishing gear and other perturbations of bottom habitat, Congress found that the declines in certain fish populations were in part due to "direct and indirect habitat losses which have resulted in a diminished capacity to support existing fishing levels."[56] Congress also found that "[o]ne of the greatest long-term threats to the viability of commercial and recreational [species] is the continu[ed] loss of marine, estuarine, and other aquatic habitats."[57] While Congress chose not to articulate national standard language with respect to habitat protection, the SFA added new habitat protection provisions requiring councils to "describe and identify essential fish habitat" (EFH) for all fisheries,[58] and to develop management plans and conservation measures that "minimize to the extent practicable [the] adverse effects" of fishing on EFH.[59]

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51. 16 U.S.C. § 1854(e)(3).

52. *Id.* § 1854(e)(4)(A).

53. "Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch." *Id.* § 1851(a)(9). Bycatch is defined as "fish which are harvested in a fishery, but which are not sold or kept for personal use." *Id.* § 1802(2). The SFA definition of "fish" includes finfish and sea turtles, but not marine mammals or sea birds. *Id.* § 1802(12).

54. 50 C.F.R. § 600.350(b) (2002).

55. 16 U.S.C. § 1853(a)(11).

56. *Id.* § 1801(a)(2)(C).

57. *Id.* § 1801(a)(9).

58. *Id.* § 1853(a)(7). EFH is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." *Id.* § 1802(10).

59. *Id.* § 1853(a)(7).

These amendments appeared to set national fisheries policy firmly on the path of achieving maximum long-term economic benefits by mandating the rebuilding and protection of fish populations and by protecting the marine habitats on which they depend. Earlier ambiguities in the law between the values to be placed on economic activity and fish population protections were resolved by a unanimous Congress. Despite this, within three years of passage, conservationists were compelled to bring a new round of court challenges to fishery management decisions.

III. GROUNDFISH MANAGEMENT IN NEW ENGLAND POST-SFA

In New England, efforts to end overfishing and rebuild groundfish stocks under the Magnuson-Stevens Act's original provisions, as well as the SFA's 1996 amendments, came too late to prevent New England's fabled groundfish populations from hitting historic low levels in the mid-1990s.[60] Under the SFA, however, the NEFMC was required to develop a new FMP for the New England groundfish fishery that complied with the new and improved overfishing, rebuilding, habitat protection, and bycatch requirements. NOAA Fisheries published new guidelines for the new national standards on May 1, 1998,[61] and the SFA required councils to be in compliance with its new provisions within two years of enactment,[62] on October 11, 1998.

A. Amendment 9

The NEFMC adopted "Amendment 9" to the Northeast Multispecies FMP in February 1999 to meet its obligations with respect to overfishing and determining optimum yields from its groundfish fisheries. Amendment 9 set the optimum yield for New England's groundfish and established new status determination criteria, defining a fish population as overfished "when its biomass level (B) is less than 'that which can produce maximum sustainable yield (Bmsy) on a continuing basis.'"[63] The approval of Amendment 9 by NOAA Fisheries on November 15, 1999 also arguably established the beginning of the SFA's rebuilding time schedule for all identified overfished stocks.[64] While Amendment 9 revised the maximum

60. *See* Shelley et al., *supra* note 6, at 225, 230–31.

61. Magnuson-Stevens Act Provisions; National Standard Guidelines. 63 Fed. Reg. 24,212 (May 1, 1998) (to be codified at 50 C.F.R. pt. 600).

62. Sustainable Fisheries Act, Pub. L. No. 104-297, § 108(b), 110 Stat. 3559, 3575 (1996).

63. Conservation Law Found. v. Evans, 209 F. Supp. 2d 1, 8 n.9 (D.D.C. 2001).

64. *Id.* at 7–8. This beginning date was initially acknowledged by NOAA Fisheries. *See* Declaration of Regional Administrator Patricia A. Kurkul (Nov. 2000) supporting Motion in Opposition

annual fishing mortality rates for groundfish, the amendment did not include the fishery management measures necessary to implement its overfishing and rebuilding provisions. Instead, the NEFMC delayed implementation of these provisions to a future action.

Nevertheless, when the NEFMC and NOAA Fisheries developed the next framework adjustment, Framework 33,[65] they bowed to industry pressure and did not include the measures necessary to implement Amendment 9's overfishing and rebuilding provisions. Instead, in Framework 33 the NEFMC sought to implement measures to achieve the earlier rebuilding targets established in Amendment 7 for the five stocks identified there, thus ignoring its own overfishing definitions and optimum yield settings, and authorizing higher levels of fishing than the SFA permitted.[66] Framework 33 was also silent on the SFA's bycatch reporting and assessment requirements and failed to adopt measures to minimize bycatch and bycatch mortality. NOAA Fisheries approved Framework 33 on April 24, 2000.[67]

B. Back to Court

On May 19, 2000, within the thirty days allowed for administrative appeals,[68] CLF, National Audubon Society (NAS), Natural Resources Defense Council (NRDC), and the Center for Marine Conservation (now renamed as The Ocean Conservancy) (hereinafter Conservation Plaintiffs) sued NOAA Fisheries for failing to implement a management plan that met the requirements of the SFA.[69] The suit alleged that Framework 33 and

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to Conservation Plaintiff's Motion for Summary Judgment, Conservation Law Found. v. Evans, No. 1:00CV001134 (D.D.C. Dec. 3, 2002) (on file with author). However, NOAA Fisheries would later argue as part of the ongoing Amendment 13 development that the rebuilding timeline does not begin until the date when NOAA Fisheries adopts the actual measures designed to implement the rebuilding program. In other words, most overfished stocks would not have to be rebuilt by 2009, but rather by 2014 at the latest—ten years after the groundfish rebuilding measures finally included in Amendment 13 were adopted. *See infra* notes 125-127 and accompanying text.

65. In order of declining comprehensiveness, the NEFMC uses a procedural structure of management plans, amendments to those plans, and framework adjustments to those amendments. Framework adjustments are the mechanism used to alter management measures between comprehensive amendments. Framework adjustments are analyzed conceptually in the comprehensive amendment review process, and thus require less analysis thereafter in order to make interim changes to management plans more quickly. *See* Multispecies Framework Specifications, 50 C.F.R. § 648.90(b)(1)(i) (2002). The Northeast Multispecies FMP has had eleven amendments approved since it was originally enacted in 1977 and has had more than thirty framework adjustments since 1994 alone.

66. *Evans*, 209 F. Supp. 2d at 7–8 (asserting that NOAA Fisheries did not dispute Framework 33's failure to implement Amendment 9).

67. *Id.* at 7.

68. 5 U.S.C. § 706 (2000); 16 U.S.C. § 1855(f) (2000).

69. *Evans*, 209 F. Supp. 2d at 5.

Amendment 9 failed to prevent overfishing, failed to rebuild overfished fish populations, and failed to monitor and minimize bycatch and bycatch mortality in the New England groundfish fishery as required by the Magnuson-Stevens Act.[70]

On December 28, 2001, Judge Gladys Kessler of the U.S. District Court for the District of Columbia agreed with the Conservation Plaintiffs on all counts, finding that the federal defendants had violated the Magnuson-Stevens Act and the Administrative Procedure Act by failing to implement Amendment 9, thereby violating the overfishing and rebuilding provisions of the SFA.[71] The court further held that NOAA Fisheries' approval of Amendment 9 and Framework 33 without the specification of new measures for reporting and assessing bycatch violated the bycatch provisions of the SFA.[72]

The district court's decision on liability, although hardly surprising under the circumstances, took everyone in New England by surprise and was immediately followed by a flurry of intervention petitions by interested states and industry groups who wanted to participate in Judge Kessler's deliberations on the remedial phase of the case. Four New England states, a number of commercial fishing organizations, and two municipalities intervened on defendant NOAA Fisheries' side of the case.[73] Interestingly, for the first time in New England, two conservation-minded fishing leaders and their organizations intervened on the side of the Conservation Plaintiffs.[74] Due to the substantive complexity of the issues involved, and the enormous and evident regional interest in the issue, Judge Kessler strongly encouraged the parties to consider mediation to explore settlement opportunities on the remedy.[75] Judge Kessler also appointed a special independent advisor for the court to assist her in understanding the technical

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70. *Id.* at 8.

71. *Id.* at 11. Judge Kessler also affirmed that the Secretary of Commerce is required to reject any framework adjustment that is inconsistent with an underlying FMP or other applicable fishery management statutes. *Id.* at 6.

72. *Id.* at 12–15.

73. Intervenors on the defense side included: (1) the Northeast Seafood Coalition, (2) the Associated Fisheries of Maine Inc., (3) the Trawlers Survival Fund, (4) the City of Portland, Maine (5) the City of New Bedford, Massachusetts, (6) the State of Maine, (7) the State of New Hampshire, (8) the State of Rhode Island, and (9) the Commonwealth of Massachusetts. Conservation Law Found. v. Evans, No. 1:00CV001134, at 2 (D.D.C. Dec. 3, 2002) (joint stipulation with proposed order).

74. On the side of the Conservation Plaintiffs were the following individuals and their organizations: Paul Parker and the Cape Cod Commercial Hook Fishermen's Association and Craig Pendleton and the Northwest Atlantic Marine Alliance. Also intervening on the Conservation Plaintiff's side were two organizations that are part of NAMA, the Stonington Fisheries Alliance, and the Saco Bay Alliance. Conservation Law Found. v. Evans, No. 1:00CV001134, at 2 (D.D.C. Dec. 3, 2002) (joint stipulation with proposed order).

75. *Id.* at 4.

aspects of fishery management, and made the court's mediation services available.[76]

Due to the imminent opening of the next fishing season on May 1, 2002, the parties to the case proceeded on parallel tracks: an attempt was made at mediation and simultaneous briefing occurred on the remedy issues.[77] As directed by the court, the federal government proposed a remedial plan designed to reduce fishing mortality by: reducing the effective number of fishing days,[78] implementing seasonal and year-round closures, increasing fishing net mesh sizes, increasing the minimum cod length and decreasing possession limits for recreational fisherman, and requiring that the NEFMC adopt additional measures by August 2003.[79]

While the fishing defendants argued that the proposed federal remedial plan was too restrictive and would drive many fishermen out of business, Conservation Plaintiffs argued that additional measures were necessary in order to assure accountability in the fishery.[80] Specifically, the Conservation Plaintiffs argued the remedial plan should include enforceable catch limits (hard quotas or hard total allowable catches also referred to as "hard TACs") as a backstop to the indirect controls on mortality preferred by the NEFMC.[81] Under a hard TAC approach, a fishery is normally closed for each stock once the stock's quota limit is reached.[82] Year after year, scientists at NOAA Fisheries had determined the catch limits necessary to prevent overfishing in New England, only to have the NEFMC adopt, and NOAA Fisheries approve, management measures that allowed fishing mortality to significantly exceed such "target" catch limits.[83] Anticipating

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76. *Id.* at 4, 6.

77. *Id.* at 4–5.

78. Under Framework 33, most fishermen received eighty-eight days to fish for groundfish. Controlling fishing effort by limiting how many days a boat can be actively fishing is known as an "indirect control" or an "input control" in fishery management parlance because it indirectly attempts to control mortality by regulating the effort that is applied to a fishery—not directly to the catch or landings themselves. Such controls have been one of the principal means by which fishing mortality was regulated under the Northeast Multispecies Fisheries Management Plan.

79. *See* Federal Defendants' Opposition to Plaintiffs' Request for Injunctive Relief and Statement with Respect to Remedy at 20, Conservation Law Found. v. Evans, 211 F. Supp. 2d 55 (D.D.C. 2002) (No. 00-1134GK) (citing the specific measures listed in the Declaration of Patricia A. Kurkul).

80. Conservation Law Found., Conservation Groups Denounce Government Fish Plan as Status Quo, *at* http://www.clf.org/hot/20020315.htm (last visited Mar. 15, 2002).

81. Statement of Plaintiffs' Position as to Remedy (January 19, 2002) at 10–11. Conservation Law Found. v. Evans, 211 F. Supp. 2d 55 (D.D.C. 2002) (No. 00-1134).

82. *Id.* at 11.

83. Conservation Law Found., Target Catch vs. Landings; Gulf of Maine and Georges Bank Cod, *at* http://www.clf.org/advocacy/new_england_groundfish_charts.htm#2 (last visited Mar. 30, 2004).

arguments against implementing hard quotas, the Conservation Plaintiffs also proposed infrastructure changes that would help such a mechanism work, including mandatory use of electronic vessel monitoring systems capable of providing "real time" data for all vessels catching groundfish, an adequate observer program necessary to assess catch and bycatch, and the development of a plan to minimize bycatch.[84]

The proposal for hard TACs drew tremendous fire from the government and the fishing industry. Opponents argued that hard TACs would result in indirect negative impacts on the fishery, such as "derby" fishing, which would put fishermen at risk as they raced to catch as many fish as possible before fishing was shut down.[85] Numerous state regulators, who had been involved in the New England groundfish fishery in the late 1970s, when a hard quota system was last used for groundfish in the region, recoiled at the prospect of recreating the management chaos that characterized those times.[86]

As briefing and negotiations over the terms and conditions of the mediation progressed, CLF broke with its original conservation co-plaintiffs on the issue of hard TACs. CLF ultimately argued to the court against implementation of a hard TAC system for the coming fishing year because the transition to a hard quota system in New England was fraught with difficulties that would require more time and resources than were immediately available to the parties. CLF was persuaded that there was insufficient real time vessel data and inadequate observer coverage to accurately monitor the progress of the fishery, especially with regard to bycatch. Specifically, CLF found that a poorly planned and hastily implemented hard TAC system would lead to a race to fish, which could produce a glut of fish on the market, lower dockside prices, and increase discards at sea; that the implementation of a hard TAC without effective controls to prevent derby fishing raised safety issues for fishermen who would fish for longer periods and in dangerous weather to avoid being closed out of the fishery; and that without proper controls the race to fish would concentrate fishing efforts at a time of the year when a number of regulated species remain aggregated for spawning, and might actually increase fishing pressure at critical biological times.[87]

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84. Statement of Plaintiffs' Position as to Remedy at 11–13, Conservation Law Found. v. Evans, 211 F. Supp. 2d 55 (D.D.C. Dec. 28, 2001) (No. 00-1134).

85. This is an example of a classic argument against quota-based systems.

86. *See* Shelley et al., *supra* note 6, at 225–26 (discussing New England Fishery Management Council's abandonment of fishing quotas in the early 1980s due to a variety of problems).

87. *See* Conservation Law Foundation's Reply to Responses of National Audubon Society et al. and Northeast Seafood Coalition to the Proposed Settlement Agreement and Stipulated Order at 10,

Moreover, the issue polarized the two sides of the case, preventing the mediation from even beginning. As time passed and the beginning of the new fishing season approached, CLF felt there would be significant advantages to a negotiated remedy that ultimately involved the NEFMC in the remedial process over a court-ordered remedy. While it was not clear how far the trial court was prepared to go to bring the fishery back into compliance with the Magnuson-Stevens Act, CLF's experience with the development of Amendment 5 under federal court order led CLF to value the importance of having the fishing industry engaged in designing the measures that it would subsequently operate under, rather than having those measures dictated by an outside entity.[88]

As described by Judge Kessler, a "Herculean effort" at mediation took place in Washington, D.C. for five straight fourteen-hour days, involving more than forty people representing all of the parties.[89] While the mediation did not result in an immediate agreement, discussions continued after the parties returned home until agreement was reached between CLF, the plaintiff fishing interests, NOAA Fisheries, and all but one of the parties who intervened on the defendant's side.[90] The settlement agreement submitted to Judge Kessler on April 16, 2002 included interim measures designed to substantially decrease fishing mortality until the NEFMC developed and NOAA Fisheries implemented a compliant FMP amendment. On April 26, 2002, four days prior to the start of the new fishing season, Judge Kessler issued a remedial order and remedial order opinion.[91]

In issuing her order, Judge Kessler noted that fashioning an appropriate remedy in the case was one of the toughest tasks the court had ever undertaken because of its potential effects on fishermen, fishing communities,[92] and "the future of a precious natural resource—the once-rich, vibrant and healthy—and now severely depleted New England . . . fishery."[93] Judge Kessler also noted that the task was made

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Conservation Law Found. v. Evans, 211 F. Supp. 2d 55 (D.D.C. 2002) (No. 00-1134GK) [hereinafter CLF Reply to Non-Settling Parties].

88. *See* Shelley et al., *supra* note 6, at 229–30.

89. Conservation Law Found. v. Evans, No. 1:00CV001134, at 5 (joint stipulation with proposed order).

90. Objections to this Settlement Agreement were filed by the remaining Conservation Plaintiffs and by Intervenor Northeast Seafood Coalition. *Id.* at 7 n.4.

91. *Id.* at 1.

92. The court appended a file of all the letters and pleas it had received from New England fishermen and their families. It comprises a six megabyte file on the electronic website for the District Court for the District of Columbia.

93. Conservation Law Found. v. Evans, No. 1:00CV001134, at 7 (joint stipulation with proposed order).

even more difficult because of the lack of "rigorous, focused, scientific research, data, and understanding which are absolutely necessary to develop long-term strategies for rebuilding stocks, preventing overfishing, and minimizing bycatch and its mortality."[94] In a blistering footnote, Judge Kessler laid blame at the feet of NOAA Fisheries and harshly criticized the agency for frequently missing its own deadlines for complying with statutory mandates, for foot dragging when completing vital marine research, and for the fact that federal courts must be called upon to force the agency to live up to its own statutory obligations.[95]

The court's extreme frustration with NOAA Fisheries was no doubt fueled by an incident on March 19, 2002, six weeks before the beginning of the new fishing season. In the midst of the remedial phase of the lawsuit, NOAA Fisheries filed a new report prepared by the Northeast Fisheries Science Center (NEFSC) on the biological reference points[96] (2002 Working Group Report) that "completely changed the scientific landscape—or seascape,"[97] rendering the Amendment 9 control rules no longer usable as the best scientific information available.[98] The new biological reference points contained in the 2002 Working Group Report were different by a factor of two or three in some cases, thus making it clear that implementing the biological objectives outlined by Amendment 9, as directed in Judge Kessler's December 28, 2001 decision, could lead to absurd results.[99]

Judge Kessler recognized that the settlement agreement represented an extraordinary degree of consensus on what was necessary and achievable in the short- and long-term to protect and improve the groundfish fishery while the NEFMC and NOAA Fisheries went about applying the latest science to develop and implement a new plan amendment, "Amendment 13," that complied with legal requirements. Thus, Judge Kessler issued her

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94. *Id.* at 8.

95. *Id.* at 8 n.6.

96. *See* WORKING GROUP ON RE-EVALUATION OF BIOLOGICAL REFERENCE POINTS FOR NEW ENGLAND GROUNDFISH, U.S. DEP'T OF COMMERCE, RE-EVALUATION OF BIOLOGICAL REFERENCE POINTS FOR NEW ENGLAND GROUNDFISH (Mar. 2002), *available at* http://www.nefsc.noaa.gov/nefsc/publications/crd/crd0204/crd0204.pdf (charting the biological reference points that include the target biomass of fish necessary to meet fisheries objectives). [hereinafter WORKING GROUP REPORT].

97. Conservation Law Found. v. Evans, No. 1:00CV001134, at 9 (joint stipulation with proposed order).

98. National Standard 2 requires that fishery "management measures . . . be based upon the best scientific information available." 16 U.S.C. § 1851(a)(2) (2000).

99. Conservation Law Found. v. Evans, No. 1:00CV001134, at 9 (joint stipulation with proposed order). For example, the biomass target for Georges Bank cod was estimated to be 2.5 times higher than before, and the court noted that the target catch using Amendment 9 control rules for Georges Bank cod would be 48,550 mt, more fish than the 2002 Working Group Report indicated even exist. *Id.* at 9 n.8.

Remedial Order using the settlement agreement as a baseline to establish a set of interim remedial measures designed to reduce overfishing during the interval in which Amendment 13 would be developed and approved, setting a deadline for the development of Amendment 13, and continuing the court's jurisdiction until full compliance with the court's December 2001 ruling could be achieved.[100]

The key interim management measures included the following: significant new restrictions on the number of days fishermen could fish; changes in mesh sizes to reduce fishing mortality and bycatch; significant new area closures designed to protect vulnerable Gulf of Maine and Georges Bank cod; increases in minimum cod size and reductions in recreational possession limits; significant reductions in unused days-at-sea (DAS) ("latent effort");[101] increased observer coverage; collection of additional bycatch data, and a firm schedule for the adoption of a new plan amendment that was compliant with the overfishing, rebuilding, and bycatch provisions of the SFA—Amendment 13.[102]

Judge Kessler's Remedial Order, however, went beyond the terms of the Settlement Agreement in terms of reducing overfishing and minimizing bycatch, by closing additional areas to fishing, further reducing the DAS for many fishermen by changing the formula used to calculate the baseline amount of days, and eliminating a category of days-at-sea that were critical to smaller, coastal fishermen. CLF calculated that the additional measures would result in disproportionate reductions in DAS for some fishermen, would eliminate from the fishery about 350 small vessels from Massachusetts and eastern Maine, and would likely promote the transfer of effort onto some of the most depleted stocks such as Georges Bank cod, and Cape Cod/Gulf of Maine and Southern New England yellowtail flounder.[103]

CLF filed a motion for reconsideration of Judge Kessler's Remedial Order, which was joined by all the intervening parties, except the former conservation co-plaintiffs.[104] On May 23, 2002, Judge Kessler set aside her April 26 order and issued a new order limited to implementing the terms of

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100. *Id.* at 11–14.

101. Perhaps the greatest management problem extant in the fishery at the time of the remedial order was the enormous amount of latent effort represented in the total number of permitted days-at-sea in the fishery, effort that was becoming active in the fishery nearly as fast as stocks could recover. CLF Reply to Non-Settling Parties, at 5–8, Conservation Law Found. v. Evans, 211 F. Supp. 2d 55 (D.D.C. 2002) (No. 00-1134GK).

102. Conservation Law Found. v. Evans, No. 00-1134, at 11–12. The Court expressly rejected calls for implementing a hard quota program as part of the interim remedial package, relying heavily on the concerns outlined in CLF's arguments. *Id.* at 15–18.

103. Conservation Law Foundation's Motion for Reconsideration of Remedial Order, at 2, Conservation Law Found. v. Evans, 211 F. Supp. 2d 55 (D.D.C. 2002) (No. 00-1134GK).

104. *Id.*

the prior settlement agreement.[105] In doing so, Judge Kessler recognized that the court's changes in the "complex and carefully crafted Settlement Agreement . . . would produce unintended consequences" that might further imperil the particularly vulnerable species the court was trying to protect and "cause grave economic and social hardship, as well as injustice to individuals, to families, [and] to fishing communities."[106]

The new order retained the deadline set in Judge Kessler's original remedial order for the promulgation of an SFA-compliant groundfish FMP amendment by August 22, 2003.[107] As a result of uncertainties about the science to be used in drawing up management measures that arose in September 2002, the parties to the case later agreed to extend the compliance date for Amendment 13 to May 1, 2004, the start of the 2004 fishing year.[108] In order to eliminate any further confusion about the "best available science" on which the management measures should be based, Judge Kessler's remedial order also required NOAA Fisheries to develop, prepare, publicize, and make public the most current and reliable scientific information available on the groundfish fishery by December 1, 2002, including the appropriate catch limits for all Amendment 9 species.[109]

C. Amendment 13

At the time of the court's Order, the NEFMC had been working on Amendment 13 to the Northeast Multispecies FMP for years,[110] but work began in earnest as the remedial phase of *CLF v. Evans* was taking place. As ordered by the court in December 2002, NOAA Fisheries released the report of the Groundfish Assessment Review Meeting (GARM), which was a regional peer review of all species assessments to date for the fish managed under the Northeast Multispecies FMP.[111]

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105. Conservation Law Found. v. Evans, 211 F. Supp. 2d 55, 56 (D.D.C. 2002). One exception included a requirement that beginning on May 1, 2003 NMFS provide an increase from five percent to ten percent observer coverage for all gear sectors unless it could show that such an increase was not necessary. *Id.* at 58.

106. *Id.* at 56–57.

107. *Id.* at 58.

108. Conservation Law Found. v. Evans, No. 1:00CV001134, at 3 (joint stipulation with proposed order).

109. *Evans*, 211 F. Supp. 2d at 58.

110. Conservation Law Found. v. Evans, 209 F. Supp. 2d 1, 9–10. 10 n.13 (D.D.C. 2001); *see also id.* at 9–10 (noting that the parties to the litigation had attempted to argue that the case was moot because of the pending nature of Amendment 13).

111. NORTHEAST FISHERIES SCI. CTR., U.S. DEP'T OF COMMERCE, ASSESSMENT OF 20 NORTHEAST GROUNDFISH STOCKS THROUGH 2001, at v (Oct. 2002) (transcript available from the National Marine Fisheries Service, 166 Water St., Boston, MA 02543-1026). *available at* http://nefsc.noaa.gov/nefsc/publications/crd/crd0216/ [hereinafter GARM Report].

The assessment results were mixed. On the positive side, management measures implemented through Amendments 5 and 7 seemed to be making a significant difference for a number of fish species. Relative to the fishing mortality and biomass reference points, no overfishing was occurring on ten of the stocks—Georges Bank and Gulf of Maine haddock, southern and northern windowpane flounder, redfish, ocean pout, pollock, Georges Bank and Gulf of Maine winter flounder, and Georges Bank yellowtail flounder.[112] Moreover, the biomass of eight of the stocks—witch flounder, pollock, redfish, ocean pout, Georges Bank yellowtail flounder, northern windowpane flounder, Gulf of Maine and Georges Bank winter flounder—exceeded the "overfished" minimum biomass thresholds.[113]

Stock biomasses had increased on all stocks since 1995 with the exception of mid-Atlantic yellowtail flounder.[114] However, the increased biomass of Georges Bank cod—the signature species of the groundfish complex—was nominal and more a result of existing fish growing in size and weight rather than an increase in the overall numbers of fish in the population.[115] Landings from the groundfish complex had gone up by forty percent since 1995, and fishing mortality rates had dropped since 1994 on fifteen of the stocks.[116]

On the other hand, significant numbers of individual species continued to be severely depleted or heavily overfished, including Cape Cod/Gulf of Maine, mid-Atlantic, and southern New England yellowtail flounder, white hake, witch flounder, American plaice, southern New England winter flounder, and Gulf of Maine and Georges Bank cod.[117] Effort reductions on the order of fifty percent in the cases of Gulf of Maine and Georges Bank cod, sixty percent in the case of white hake, and up to eighty-nine percent in the case of Cape Cod yellowtail flounder were deemed necessary to eliminate overfishing and to allow these stressed populations to rebuild.[118] Clearly, conservation was working in New England for some species but for other species significant additional protections would be necessary.

Amendment 13, without question, is the most comprehensive, far-reaching, and ambitious fishery management plan ever developed in New England. In addition to its specific objective of meeting the requirements of Judge Kessler's ruling, Amendment 13 was intended to make decisions on a

112. *Id.* at vi.
113. *Id.*
114. *Id.*
115. *Id.* at 15.
116. *Id.* at vi.
117. *Id.*
118. *Id.* at xii.

broad range of management objectives, including: rebuilding overfished fisheries; ending all overfishing where it occurred; minimizing, to the extent practicable, the adverse effects of fishing on essential fish habitat; minimizing bycatch and minimizing mortality of bycatch where it could not be avoided; examining options for reducing harvesting capacity in the groundfish fleet, and improving administration of the fishery.[119]

Since 2000, Amendment 13 has been discussed and debated at more than 114 meetings in the region, including eighteen public hearings. The NEFMC collected and analyzed thousands of public comments. The document itself, with the supplemental environmental reviews, socio-economic reviews, and other materials, is over 1600 pages long. After extended and heated debate over a number of provisions and numerous motions, the NEFMC approved Amendment 13 by a 14–2 vote on November 6, 2003. The final document was transmitted to NOAA Fisheries for review on December 18, 2003. The major elements of Amendment 13 and a brief analysis of each follow.

1. Rebuilding Overfished Fisheries and Ending Overfishing

Amendment 13, as approved by the NEFMC, adopts the biomass reference points that were developed and reported by the NEFSC in the 2002 working group report.[120] They are, in a number of cases, significantly higher than the earlier biomass reference points developed in Amendment 9.[121] While there was considerable resistance on the part of some of the council members to committing the region to rebuilding fish stocks to levels that were admitted by the scientists to be in "*terra incognita*,"[122] NOAA Fisheries made it clear that the 2002 NEFSC report constituted the best available science and thus was controlling with respect to the rebuilding targets under the national standards.[123]

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119. NEW ENGLAND FISHERY MGMT. COUNCIL, U.S. DEP'T OF COMMERCE, FINAL AMENDMENT 13 TO THE NORTHEAST MULTISPECIES FISHERY MANAGEMENT PLAN I-6 (2003) [hereinafter AMENDMENT 13].

120. *See* WORKING GROUP REPORT, *supra* note 96, at x–xi.

121. *Id.*

122. *Id.* at ix.

123. Letter from William T. Hogarth, Director of NOAA Fisheries, to David Borden, NEFMC Chair, (Nov. 3, 2003) (on file with author and Vermont Law Review); Letter from Patricia A. Kurkul, NOAA Fisheries Regional Administrator, to Thomas R. Hill, NEFMC Chair, (March 17, 2003) (on file with author and Vermont Law Review). *See* 16 U.S.C. § 1851(a)(2) (2000) (stating that the NEFSC 2002 report provides "the best available science"). The groundfish peer review scientists independently reviewed the biomass targets in early 2003. The scientists reviewed the biological reference points and the rebuilding projections. In addition, they were asked to evaluate the potential impact on the government stock assessments of a recently discovered error in the deployment of stock assessment

With three exceptions, the NEFMC adopted rebuilding plans for the twelve overfished stocks that achieve the rebuilding objective for each stock in the maximum period allowed by law, ten years, although the amendment does not start the rebuilding clock until 2004, the year the management measures will be implemented.[124] For Georges Bank cod, Cape Cod/Gulf of Maine yellowtail flounder, and Acadian redfish, the NEFMC adopted a longer rebuilding time period based on the unique biological circumstances of those species, extending the rebuilding period for these stocks to 2026, 2023, and 2051 respectively.[125] All other species will be rebuilt by 2014 under the FMP with at least a fifty percent probability.[126]

The NEFMC also evaluated various approaches to setting annual fishing mortality rates so as to reach the biomass rebuilding objective. These approaches ranged from setting a constant rate of mortality for each year of the rebuilding period, to phasing in the fishing rate reductions over time in order to reduce economic and social impacts at the beginning of the rebuilding program.[127] The NEFMC ultimately decided to use two different approaches in setting fishing mortality schedules. An "adaptive rebuilding strategy" was chosen for seven stocks in which mortality rates are capped at the maximum sustainable yield estimate (F_{MSY}) for the first five years of the program and then adjusted, as necessary, to achieve biomass targets within the rebuilding timeframe.[128] The NEFMC chose a "phased rebuilding strategy" for Georges Bank cod, American plaice, southern New

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survey gear used to collect fish population data. ANDREW L. L. PAYNE, UNIVERSITY OF NEW HAMPSHIRE, REPORT ON THE GROUNDFISH SCIENCE PEER REVIEW MEETING 3 (2003), *available at* http://www.nefsc.noaa.gov/groundfish/Payne.pdf [hereinafter GROUNDFISH PEER REVIEW]. The Groundfish Peer Review made a series of recommendations for improvements and additional analyses to strengthen NOAA Fisheries' estimates, but concluded that "most but not all of the methodologies currently used . . . provide an adequate scientific basis for fisheries management." *Id.* at 15.

124. AMENDMENT 13, *supra* note 119, at I-34; *see also supra* note 64 and accompanying text.

125. AMENDMENT 13, *supra* note 119, at I-35. *See* 16 U.S.C. § 1854(e)(4)(A)(ii) (2000) (stating that a time period for ending overfishing and rebuilding the fishery shall "not exceed ten years"). The NEFMC determined that because fishing mortality on these stocks would have to be effectively zero in order to rebuild the stocks by 2014, an extended rebuilding period is triggered under NS 1 that totals the length of time it takes to rebuild the stock at a fishing mortality of zero, plus one mean generation. National Standard 1—Optimum Yield, 50 C.F.R. 600.310(e)(4)(ii)(B)(3) (2002).

126. While such a low probability of success, no better than a coin toss, will strike many as risk prone, the metric derives from a federal court case involving summer flounder and has become the default confidence standard for many fisheries. Natural Res. Def. Council Inc. v. Daley, 209 F.3d 747, 754 (D.C. Cir. 2000). There is no explicit regulatory authority for setting a plan's success probability at such a low level.

127. The peer review scientists cautioned against setting fishing mortality rates higher than the rate associated with achieving maximum sustainable yield. *See* GROUNDFISH PEER REVIEW, *supra* note 123, at 15 ("The main principle behind the choice of F_{MSY} is to achieve a productive fishery with low risk to the resource.").

128. AMENDMENT 13, *supra* note 119, at I-39 to I-50.

England/Mid-Atlantic yellowtail flounder and Cape Cod/Gulf of Maine yellowtail flounder, and white hake in which fishing mortality is allowed to exceed F_{MSY} over the first several years of the rebuilding program, and then reduced to a constant fishing mortality rate thereafter to "catch up" until the rebuilding biomass targets are achieved within the rebuilding timeline.[129]

It is not clear that the "phased" approach can be approved, even though it arguably achieves the same rebuilding objective on paper. National Standard 1, as amended by Congress in the SFA, appears to prohibit fishing effort at levels higher than the maximum sustainable yield.[130] While the rebuilding language in section 304(e)(4)(A) of the Magnuson-Stevens Act does allow managers to authorize continued fishing in overfished fisheries,[131] it is not clear that fishing rates can be set higher than that dictated by the maximum sustainable yield. From a biological perspective, such continued high fishing mortality increases the biological risk to these more threatened stocks.[132]

With respect to effort controls, the NEFMC adopted a program based upon a proposal by a fishing industry group, the Northeast Seafood Coalition. At the core of this program is the designation of different categories of fishing days that groundfish fishermen can use during the fishing year, designed to enable fishing to continue on the more abundant stocks while reducing the available effort targeted at the more vulnerable stocks. So-called *A* days are comparable to current DAS in that fishermen can target and land any groundfish species under an *A* day. The plan implements a forty percent reduction in the numbers of *A* days fishermen can use relative to the 2000–2001 fishing year average. Fisherman do not lose that forty percent reduction however; those days become *B* days, which can be used to target species of groundfish that are not overfished or to access "special areas" created by the council. The plan indefinitely "freezes," as *C* days, all permitted days in the fishery when an individual cannot show that he/she landed the minimum number of fish during the qualification period in the plan. While the scientific advice called for a forty percent overall reduction in DAS relative to 2000—2001 levels to meet the biological objectives, it is not clear from the analysis in Amendment 13 that the *A* and *B* day program, as finally approved by the Council, meets such objectives.[133] The amendment also makes changes to

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129. *Id.* at I-36 to I-38, I-47 to I-50.

130. *See supra* notes 40–46 and accompanying text.

131. 16 U.S.C. § 1854(e)(4)(A) (2000).

132. *See* GROUNDFISH PEER REVIEW, *supra* note 123, at 15–18 (suggesting that it is better to have mortality rates lower than F_{MSY}).

133. *See* AMENDMENT 13, *supra* note 119, at I-80 to I-81, I-84 to I-85.

the seasonal closed areas, possession limits, gear restrictions, and minimum fish sizes in the recreational sector.[134]

In one of the more progressive approaches adopted by the NEFMC, Amendment 13 introduces the concept of sector allocations to the region. This option allows fishermen to self-organize and develop self-managed programs for a prescribed allocation of quota in the fishery based on their fishing history. Unlike the general fishery, these sectors would operate under hard quota systems and the organizing fishermen would be rewarded (or punished) directly for the degree to which they were able to restrain their harvest to the quota level.[135] If a sector's landings are kept within a specified quota, the sector's future landings would not be reduced even if the general fishery over-ran its target fishing quota. This option was developed by a relatively small boat fishery (the Cape Cod Commercial Hook Fishermen's Association) that primarily uses hook-and-line gear to fish for cod off Cape Cod. This group formed a sector and had its plan adopted in Amendment 13. It is likely to be the subject of great scrutiny and interest by other fishermen and managers as it is implemented.[136] Additional sectors may be formed and approved through future framework actions.

2. Protecting Essential Fish Habitat

The measures in Amendment 13 designed to protect essential fish habitat are extremely weak. While the document attempts to provide a detailed, gear-effects evaluation and practicability analysis, the NEFMC largely counted the same measures implemented to reduce fishing effort as measures implemented to minimize habitat impacts. The NEFMC's logic is that anything that reduces the amount of fishing reduces the frequency of bottom disturbance associated with gear and therefore constitutes habitat protection.[137] The NEFMC did redraw some of the boundaries of existing closed areas designed to reduce fishing mortality, ostensibly to better

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134. *Id.* at I-86 to I-87.

135. Amendment 13 introduces a number of hard-quota-based management measures into the New England groundfish fisheries for the first time since hard quotas were abandoned in 1982. *See* Shelley et al., *supra* note 6, at 225 (describing the first management plan developed by New England Fisheries Management Council, which had a quota system until 1982).

136. An even more progressive management option was developed and promoted by fishermen and scientists working with the Northwest Atlantic Marine Alliance. Known as the Gulf of Maine Inshore Conservation and Management Stewardship Plan, this proposal would have authorized area-based management in an effort to create incentives for stewardship and ecosystem-based management. AMENDMENT 13, *supra* note 119, at I-479 to I-480. While the plan was not adopted, Amendment 13 authorizes such approaches to be explored through framework adjustments in the future. *Id.* at I-54.

137. *E.g.*, *id.* at I-xi, I-491.

protect critical habitats, and designated specific portions of those closed areas as indefinite habitat closures.[138] These represent some of the first "habitat closures" in New England fishery management history, though because they are smaller than the existing closed areas, and the remaining portions of those existing closed areas will be reopened to fishing, it is difficult to suggest that there has been any real net benefit to habitat. Amendment 13 suggests that the council will take a more rigorous look at essential fish habitat protection in Amendment 14 to the Northeast Multispecies FMP, which will be part of an "Omnibus Habitat Amendment" that will include all other fisheries, which use gear that adversely affects essential fish habitat.[139]

3. Minimizing Bycatch

While the provisions in Amendment 13 relative to the protection of essential fish habitat can be described as minimal at best, Amendment 13's efforts to comply with National Standard 9 on minimizing bycatch make the habitat provisions seem expansive. The plan has a *recommendation* that NOAA Fisheries increase observer coverage to ten percent,[140] and a *suggestion* that the *A* and *B* day program may not aggravate the current bycatch and discard problem.[141] Apart from these provisions, however, Amendment 13 is virtually silent on the topics of monitoring, avoiding, and minimizing bycatch—except to note qualitatively that many of the measures that were considered in the plan such as the special access

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138. *Id.* at I-x, I-93 to I-95.

139. *Id.* at I-13 to I-14. This "omnibus" amendment process emerged in part from the terms of a consent decree negotiated between NOAA Fisheries and the conservation plaintiffs in an earlier case litigated in Washington, D.C. *See* Am. Oceans Campaign v. Daley, 183 F. Supp. 2d 1 (D.D.C. 2000). This case challenged NOAA Fisheries implementation of the habitat protection obligations and analysis procedures under both the Magnuson-Stevens Act and NEPA. *Id.* at 9. Although the court ultimately ruled against the conservation plaintiffs' Magnuson-Stevens Act claims, it did uphold their NEPA claims. *Id.* at 15, 21. Faced with undertaking comprehensive NEPA reviews on all fisheries nationwide, NOAA Fisheries agreed to a compliance schedule for completing all fishery reviews by a 2004 deadline. In New England, this process has fallen behind schedule, and the agency has recently suggested that it may be at least four more years before New England's habitat omnibus amendment will be completed. One party to the *Am. Oceans Campaign v. Daley* litigation has already filed objections pursuant to the consent decree regarding the NEFMC's proposed scallop management plan's failure to comply with the terms of the consent decree. *See* Plaintiff's Request for Expedited Consideration and Motion of Plaintiff Oceans to Enforce December 17, 2001, Joint Stipulation and Order, Am. Oceans Campaign v. Daley, 183 F. Supp. 2d 1 (D.D.C. 2000) (No. 99-982) (on file with author); Press Release, Oceana, Oceana Takes Federal Habitat Protection Plan Back to Court (Jan. 7, 2004), *available at* http://www.oceanafund.org/index.cfm?sectionID=10&fuseaction=35.detail&pressreleaseID=135. The fate of Amendment 13's EFH provisions remains to be seen.

140. AMENDMENT 13, *supra* note 119, at I-72.

141. *Id.* at I-405.

program might well *increase* the bycatch problems in the fishery.[142] The notable exception is the plan's requirement that boats fishing on eastern Georges Bank under a resource sharing agreement with Canada use new haddock trawl separator gear designed to minimize the bycatch of cod.[143] The NEFMC rejected measures that would have required vessel monitoring systems to be installed on all groundfish vessels and a mandatory level of observer coverage necessary to ensure the efficacy of a bycatch minimization program.[144]

To the degree that the special access programs in the Amendment actually allow increased effort on groundfish in areas that are currently closed to all fishing, it is hard not to conclude that Amendment 13 actually aggravates the bycatch problem in the region rather than minimizes it.[145] Given both the clear requirements of the Magnuson-Stevens Act on this topic, as well as Judge Kessler's ruling that the management plan up through Framework 33 did nothing to meet the legislative requirements,[146] Amendment 13 appears to fall considerably short of its bycatch reporting and minimization obligations.

D. Amendment 13's Bumpy Road Toward Approval

As noted above, Amendment 13 was adopted by a wide margin. The only two votes against the amendment were registered by two of the Council members from Maine who were dissatisfied by the treatment of many of Maine's smaller, coastal fishermen. The fishermen were not currently active in the groundfish fishery, but they wanted to keep their groundfish permits active so that they could reenter the fishery in the future when stocks rebuilt to the degree that coastal Maine fishermen could again find groundfish in coastal Maine waters. These inactive fishermen were relegated by Amendment 13 to the *C* day category without any significant

142. *Compare id.* at I-52 (showing the unchanged start of the fishing year), *with id.* at I-381 (reporting the Council's refusal to change starting date of the fishing year may make bycatch of aggregating groundfish worse).

143. AMENDMENT 13, *supra* note 119, at I-59 to I-60.

144. *Id.* at I-129, I-194.

145. To provide just one example, the analysis of the reported catch rates of Georges Bank cod and Georges Bank haddock in one of the areas that are proposed to be reopened for the harvesting of relatively abundant Georges Bank haddock and yellowtail flounder show high bycatches of Georges Bank cod. The document indicates that if incentives are created to encourage fishing in this new area without mandated measures to reduce bycatch of cod, the amendment could raise mortality on Georges Bank cod. *Id.* at I-291. Amendment 13 was adopted with incentives and without mandated conservation gear.

146. Conservation Law Found. v. Evans, 209 F. Supp. 2d 1, 15 (D.D.C. 2001).

hope for future reactivation of these days. Significant numbers of Maine fishermen, therefore, could permanently lose access to groundfishing.

Concerns about that issue and several others that were considered unfair to Maine fishermen led U.S. Senator Susan Collins to attach a rider to the 2004 Omnibus Appropriations Bill. The Rider blocks the expenditure of any funds by NOAA Fisheries to implement Amendment 13 until October 2004 at the earliest.[147]

Senator Collins has since indicated that she no longer objects to Amendment 13 because the NEFMC is acting in good faith to address the issues she raised; however, it remains unclear how or when she will be able to lift the funding restriction.[148] If the rider is not lifted prior to the start of the new fishing year on May 1, 2004, a collision between the judiciary and Congress may be imminent.

IV. NATIONAL OCEAN POLICY REEXAMINATIONS

As the United States prepares to enter its fourth decade of federal fisheries management under the Magnuson-Stevens Act, the nation's approach to fisheries management is once again being examined in two comprehensive national reviews of U.S. ocean policy: the federal U.S. Commission on Ocean Policy and the independent Pew Oceans Commission. In addition, Congress will soon reexamine and update the nation's principal fishery management law through reauthorization of the Magnuson-Stevens Act.[149] Finally, NOAA Fisheries is currently reviewing its guidelines for implementing National Standard 1 of the Magnuson-Stevens Act, which provides essential guidance to the regional fishery management councils on such critical issues as defining when a stock is overfished, when overfishing is occurring, and the timeframe over which stock rebuilding must occur. Combined, the U.S. and Pew Commission reports, the reauthorization of the Magnuson-Stevens Act, and the revision of National Standard 1 guidelines have the potential to profoundly impact U.S. marine policy for years to come.

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147. Miscellaneous Appropriations and Offsets Act of 2004, Pub. L. No. 108-199, § 105, 118 Stat. 434, 437 (2004).

148. Press Release, Senator Collins Commends New England Fishing Council on Progress Improving Amendment 13, Agrees to Lift Implementation Objections, (Jan. 23, 2004), *available at* http://www.bdssr.com/latest/Collins-amend13.htm.

149. On February 11, 2004, Senator Olympia Snowe introduced S.2066, the "Fishery Conservation and Management Amendments of 2004." Representative Wayne Gilchrest has recirculated reauthorization legislation he introduced in the 1st session of the 108th Congress as a "discussion draft."

A. Pew Oceans Commission

The Pew Oceans Commission, which was formed and funded principally by the Pew Charitable Trusts, consists of eighteen prominent leaders from the business, science, fishing, conservation, government, education, and philanthropic sectors around the United States. In June 2003, the Pew Oceans Commission issued a broad and sweeping report calling upon the nation to overhaul its marine resource management policies.[150] The report was the first national examination of ocean and coastal policy in more than thirty years, and put forth comprehensive recommendations on ocean governance, fisheries management, coastal development, marine pollution, aquaculture, scientific research, and education.[151]

On the topic of fisheries management, the Pew Commission recommended that U.S. fisheries management abandon resource development as its prime objective.[152] In its place, the Pew Commission stated that the principal objective of fisheries policy should be to protect the long-term health of the fisheries "by protecting, maintaining, and restoring the health, integrity, productive capacity, and resilience of the marine ecosystem upon which they depend."[153] Fundamental to meeting this objective would be implementing ecosystem-based planning and marine zoning, protecting marine habitats from the destructive impacts of mobile bottom tending fishing gear, and monitoring and minimizing bycatch.[154]

The Pew Commission also recommended reforming governance of federal fisheries by establishing a clear separation between conservation and allocation decisions in the fishery management process, and preconditioning fishing on comprehensive access and allocation planning.[155] Specifically, the Pew Commission recommended that conservation decisions such as total catch and bycatch limits, habitat and area protections, and threatened and endangered species requirements be made by regional teams of federal, state, and academic scientists, while leaving the more political, economic, and sociological decisions regarding allocation of the allowable catch to the regional fishery management

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150. PEW OCEANS COMM'N, AMERICA'S LIVING OCEANS: CHARTING A COURSE FOR SEA CHANGE ii (2003).

151. For the previous comprehensive review of U.S. ocean policy see COMM'N ON MARINE SCIENCE, ENGINEERING AND RESOURCES, OUR NATION AND THE SEA: A PLAN FOR NATIONAL ACTION (1969), *available at* http://www.lib.noaa.gov/edocs/stratton/.

152. PEW OCEANS COMM'N, *supra* note 150, at 46.

153. *Id.* at 109.

154. *Id.* at 47–9.

155. *Id.*

council system.[156] Finally, the Pew Commission recommended establishing a permanent fishery conservation trust fund for the support of fisheries research, habitat protection, transitional buyback and community development programs, and fisheries management and enforcement.[157]

B. The U.S. Commission on Ocean Policy

The U.S. Commission on Ocean Policy was created by the Oceans Act of 2000.[158] Appointed by the President, the sixteen-member Commission, which began its work in September 2001, is charged with establishing findings and making recommendations for a coordinated and comprehensive national ocean policy.[159] The Commission's Preliminary Report is expected to be released on April 20, 2004.[160] A final report will be issued following an opportunity for comment by Governors and the public on the Preliminary Report.[161] In addition to ocean governance and living marine resource management, the U.S. Commission is also expected to make recommendations on coastal protection, maritime commerce and transportation, and marine monitoring research, education and exploration.[162] The recommendations of the U.S. Commission are anticipated with interest by many. The last federal review of U.S. ocean policy in 1969 spurred a major restructuring of national ocean policy and the creation of the National Oceanic and Atmospheric Administration.[163]

C. Magnuson-Stevens Act Reauthorization

The Magnuson-Stevens Act is due to be reauthorized in 2004.[164] However, the general difficulty in passing legislation during an election year may delay reauthorization until 2005. Nonetheless, the recent controversy surrounding Amendment 13 and groundfish management in New England, particularly regarding the establishment of higher biomass targets and rebuilding timeframes, has prompted several members of the

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156. *Id.* at 47, 109–10.

157. *Id.* at 48.

158. Oceans Act of 2000, Pub. L. 106–256, § 3(a), 114 Stat. 644, 645 (2000) (codified at 33 U.S.C. § 857-19 note).

159. Oceans Act of 2000 §§ 3(b)(1), 4(a).

160. Press Statement, U.S. Commission on Ocean Policy, U.S. Commission on Ocean Policy to Release Preliminary Report April 20—Historic Report to be reviewed by Governors and Stakeholders, *available at* http://oceancommission.gov/newsnotices/mar10_04.html (last visited Mar. 10, 2004).

161. *Id.*

162. Oceans Act of 2000 § 3(f).

163. COMM'N ON MARINE SCIENCE, ENGINEERING AND RESOURCES, *supra* note 151, at 230.

164. 16 U.S.C. § 1803 (2000).

New England congressional delegation to state publicly their intentions to press for reauthorization of the Magnuson-Stevens Act as a top legislative priority in the coming year.[165] To that end, in February 2004, Senator Olympia Snowe introduced S.2066, the "Fishery Conservation and Management Act of 2004."[166] Among the bill's provisions that appear to be a direct response to the New England groundfish fishery issues are measures that would eliminate the rebuilding timelines for overfished stocks and reduce the amount of area that could be considered for protection under the Magnuson-Stevens Act's EFH provisions.[167] In addition to Senator Snowe's bill, Representative Wayne Gilchrest has recirculated the reauthorization legislation that he introduced in the first session of the 108th Congress as a "discussion draft."[168]

D. National Standards Guidelines Review

NOAA Fisheries has launched a critical review of its guidelines for National Standard 1 (NS1) to the Magnuson-Stevens Act.[169] NS1 requires that "[c]onservation and management measures shall prevent overfishing while achieving on a continuing basis, the [optimum yield] from each fishery for the U.S. fishing industry."[170] In a recent report put forth by a NOAA Fisheries working group, federal scientists concluded that although there was a need to clarify, simplify, or amplify various aspects of the current NS1 guidelines, "a major overhaul of the current NS1 guidelines is not required."[171] However, the report does recommend clarifications in several major areas including application of the mixed stock exception, delineation of rebuilding time horizons, definition and application of minimum stock size thresholds, application of maximum fishing mortality thresholds, definition of biomass targets of rebuilding, revision of rebuilding plans and development of optimum yield control rules.[172]

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165. *See, e.g.*, Sarah Martineau, *Frank Targets Fishing Rules*, NEW BEDFORD STANDARD-TIMES, Jan. 15, 2004, at A1, *available at* http://www.southcoasttoday.com/daily/01-04/01-15-04/a01lo201.htm (last visited Feb. 4, 2004).

166. Fishery Conservation and Management Amendment Act of 2004, S.2066, 108th Cong. § 1 (2004), *available at* http://thomas.loc.gov/cgi-bin/query/z?c108:S.2066.

167. *Id.* §§ 3, 14, 26.

168. *See* Gilchrest working draft Magnuson-Stevens Reauthorization Bill, 108th Cong., *available at* http://www.nefmc.org/issues/mag/mag.html (last visited Mar. 31, 2004).

169. National Standard 1—Optimum Yield, 50 C.F.R. § 600.310 (2002).

170. *Id.*

171. PAMELA M. MACE ET AL., NATIONAL MARINE FISHERIES SERVICE, REPORT OF THE NMFS NATIONAL STANDARD 1 GUIDELINES WORKING GROUP 2 (2003), *available at* http://www.nefmc.org/press/press_releases/NS1_work_group_report.pdf.

172. *Id.* at 3–10.

Because the NS1 guidelines provide essential benchmarks for stock rebuilding plans, any alteration of these guidelines could result in significant changes to the fishery management process. A review of the second recommendation with respect to fishing mortality thresholds, for example, could lead one to conclude that the recommendation was written with the current New England groundfish issues in mind. It states that:

> overfishing should be eliminated as soon as possible . . . . Phase-in periods for reducing fishing mortality down to the [overfishing threshold] . . . should only be permitted if . . . (i) the maximum permissible rebuilding time is no greater than it would have been without the phase-in period, and (ii) fishing mortality levels must, at the least, be reduced by a substantial (e.g., measurable) amount each year.[173]

Interestingly, the NS1 Working Group Report prefaced this recommendation by emphasizing NS1's requirement to "*prevent* overfishing,"[174] yet concluded its recommendation by less enthusiastically endorsing "[p]*rogress toward eliminating* overfishing."[175]

Though lacking the force of law if adopted,[176] the national standard guidelines are influential in FMP development. This contemplated change to the NS1 guidelines would seem designed to support the emerging NOAA Fisheries interpretation, evident in Amendment 13 that continued overfishing is acceptable under the Magnuson-Stevens Act. The legal question with respect to whether these agency guidelines are consistent with the plain meaning of the definition of "optimum yield," which limits allowable fishing mortality rates to no higher than the rate dictated by maximum sustainable yield,[177] will no doubt need to be finally resolved in court, possibly in the context of Judge Kessler's final review of Amendment 13.

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173. *Id.* at 4–5; *see also supra* Part II.C.1 (discussing rebuilding periods of certain fish species).

174. *Id.* at 4.

175. *Id.* at 5 (emphasis added).

176. 16 U.S.C. § 1851(b) (2000).

177. *See* National Standard 1—Optimal Yield, 50 C.F.R. § 600.310 (stating that optimal yield is based on maximum sustainable yield); *supra* note 125 and accompanying text.

V. LESSONS LEARNED FROM NEW ENGLAND: WHAT WILL IT TAKE FOR THE MAGNUSON-STEVENS ACT TO DELIVER ON ITS CONSERVATION PROMISE?

The groundfish fisheries of the Northwest Atlantic, the NEFMC, and the related actions by NOAA Fisheries have been the poster children of ineffective fisheries management, prompting significant changes to the original legislation in 1996. The SFA successfully eliminated the discretion in earlier federal fisheries management law that was used as justification for accommodating short-term economic interests at the expense of the long-term ecological and economic health of the fishery. While the NEFMC and NOAA Fisheries appear to require further judicial encouragement, Amendment 13 nevertheless shows promise, albeit yet unfulfilled, for the future of the groundfish fishery in this region, at least as far as eliminating overfishing and rebuilding fish stocks is concerned. Bycatch minimization and habitat protection are another matter.

There is a growing volume of scientific literature documenting the negative impacts of fishing activities on seafloor habitats as well as the critical importance of habitat to overall marine ecosystem health and function.[178] As development pressure for scarce marine resources intensifies and competing demands on our oceans increase, a more comprehensive and integrated ecosystem planning approach to the management of all ocean development activities, including fisheries, will be needed. The following observations and recommendations are intended to provide a starting point for charting a better course for the future of New England and U.S. fisheries management.

A. U.S. Fishery Management Policy Must be Developed in the Greater Context of Comprehensive Ocean Management Planning and be Grounded Solidly in Principles of Ecosystem Restoration and Protection

Rapid advances in technology, population, and international trade have led to substantial increases in the demands on marine resource systems. In addition to the demands created by recreational and commercial fishing, shipping, recreational boating, sand and gravel mining, waste disposal, whale watching, and scientific research, ocean ecosystems are now being

178. *See, e.g.*, Symposium, *Symposium on Effects of Fishing Activities on Benthic Habitats: Linking Geology, Biology, Socioeconomics, and Management*, November 12–14, 2002, Tampa, FL (Program and Abstract Volume) (exhibiting more than one hundred abstracts of scientific studies detailing the negative impacts of fishing activities on seafloor habitats), *available at* http://walrus.wr.usgs.gov/bh2002/abstracts.html.

called upon to host long distance fiber optic cables, natural gas infrastructure, wind energy farms, wave-generated electricity facilities, and mariculture. In the absence of a comprehensive ocean management framework, state and federal regulators have been responding to ocean development proposals on an *ad hoc*, first-come, first-served basis with no road map to guide the development of the region's ocean resources, or to ensure the protection of the underlying structure and function of the marine ecosystem, including its fishery resources. The only way to accommodate a multitude of uses, while ensuring the ecological integrity of the marine ecosystem, is to approach management from a comprehensive, proactive systems planning perspective.

Marine ecosystem protection should therefore be the organizing principle for fishery management. Fishery management plans should be developed based upon consideration of how the entire ecosystem that supports the fishery will be affected by fishing. Overfishing definitions set in an ecosystem context should consider the level of fishing that has detrimental effects in the ecosystem, even though it may not harm a particular target species in any given fishery. Fishery management plans, as well as any other development activity proposed for federal territorial waters or the 200-mile exclusive economic zone, should fit within constraints established through more broadly-based ecosystem management planning.[179]

Moreover, maintenance of the long-term health of the marine ecosystem must take precedence over short-term socio-economic development interests. We cannot restore or sustain fisheries without restoring the ecosystem that supports them.

B. Conservation Decisions Must be Separated from Allocation Decisions in the Fishery Management Plan Development Process

In New England, fishery managers are required to rebuild depleted groundfish stocks to long-term sustainable biomass levels. These levels were specified in the 2002 GARM Report,[180] which set new biological reference points based upon the best available science.[181] The science supporting the new reference points, and other conclusions in the report,

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179. This is the point that the Pew Oceans Commission is making when it recommends that the "principal objective of fishery management should be to protect the long-term health . . . of fisheries by protecting, maintaining, and restoring the health, integrity, productive capacity, and resilience of the marine ecosystems upon which they depend." PEW OCEANS COMM'N, *supra* note 150, at 46.

180. GARM Report, *supra* note 111, at vi.

181. *See id.* at xv (charting fishing mortality and biomass as a proportion of F_{MSY} and B_{MSY}).

were peer reviewed by a group of internationally distinguished fishery scientists who found the work defensible and "scientifically sound" for managing the fishery.[182]

Nonetheless, members of the NEFMC strongly resisted the conclusions of this peer-reviewed science and, indeed, developed and included biological target alternatives in the Draft EIS for Amendment 13 which were neither based on science nor peer reviewed, and therefore were considered inappropriate and irrelevant by conservationists and NOAA Fisheries alike.[183] The energy consumed by the NEFMC and members of the public trying to understand or respond to this self-styled "science" could have much more productively and appropriately been used to understand and debate the allocation consequences of the management measures being evaluated.

The existing council system and council members are not well suited—either by time or capacity—to debate scientific issues or to develop a scientific consensus.[184] The council system is a political system best designed to bring regional fisheries knowledge to bear on the policy choices involved in fisheries management. A clear separation should be established between the scientific decisions related to fisheries conservation (setting allowable catch levels, biological reference points, habitat protections, and other scientific questions inherent to fisheries management) and political decisions related to allocation of catches and management measures designed to achieve biological objectives.[185]

Ironically, the allocation questions that are the most critical to the future of participants in the fishery are the most difficult and the least attended to aspects of the NEFMC's jurisdiction. Every aspect of a chosen rebuilding program, whether it be the choice of DAS allocation formula, particular area closures, or specific gear restrictions, has a direct and varying impact on each fisherman's ability to land fish. Ensuring that those measures are implemented in a fair and equitable manner should be the Council's focus. This is particularly the case in New England in light of the fact that the long-term economic analysis of Amendment 13 indicates that under nearly any rebuilding program selected, landings will more than

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182. *See* GROUNDFISH PEER REVIEW, *supra* note 123, at 18.

183. *See supra* note 123 and accompanying text.

184. In Amendment 13, however, the NEFMC asserts that the Magnuson-Stevens Act requires councils to engage in just this activity by law. *See* AMENDMENT 13, *supra* note 119, at I-19 (quoting § 303(a)(10) of the Magnuson-Stevens Act).

185. PEW OCEANS COMM'N, *supra* note 150 at 47, 109–110; JOSH EAGLE ET AL., TAKING STOCK OF THE REGIONAL FISHERY MANAGEMENT COUNCILS, 37–39 (2003), *available at* http://www.pewtrusts.com/pdf/pew_science_taking_stock.pdf.

double and revenues nearly triple.[186] Without a fair and equitable distribution of the costs and benefits of rebuilding, the diversity of the fleet will suffer in terms of geographic range, variety of vessel sizes, and gear types. Such distortions have long-term implications for New England's fishermen, fishing communities, and the fishery resource itself as New England's groundfish fisheries rebuild. However, the council debate rarely touches on allocation choices and alternatives explicitly. Removal of jurisdiction over science questions will clear the agenda to attend to those critical matters.

C. The Composition of Fishery Management Councils Should Better Reflect the Diversity of Interests Associated with Sustainable Fisheries Management

Today, the public continues to play only a limited role in managing our oceans. In New England, the NEFMC is dominated by the same commercial fishing interests it seeks to regulate. The NEFMC and fishery management councils generally should be diversified to include a greater representation of public interests, including conservation and consumer interests, and fishing interests, including seafood wholesalers and processors, recreational fishermen, and different gear and vessel types.[187] Our oceans and the marine life they support are, after all, a public resource. While the diversity of the interests represented on the NEFMC has improved somewhat in recent years,[188] non-commercial fishing members provide largely token representation.

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186. AMENDMENT 13, *supra* note 119, at 1-601.

187. EAGLE ET AL., *supra* note 185, at 39–43. The need to diversify would be less critical if conservation and science decisions were separated; however, conflict issues would remain. In any event, broader representation would likely increase the range of management options considered. *Id.* at 40.

188. For example, an at-large appointment to the NEFMC has been filled by a representative from the conservation field for the past several years, the only such representative currently sitting on a council in the country. *Id.* at 24. In addition, members with ties to the recreational fishing industry and small boat fleet now regularly hold council seats. These appointments, however, largely remain token representation, and overall, of twelve appointed members in New England, nine represent commercial fishing interests. *Id.*; *see also* Shelley et al., *supra* note 6, at 237–38 (noting the lack of representation for the full range of public interests dealing with fisheries and conservation management in the New England Fishery Council).

D. Enforceable Catch Limits Need to be Implemented in All Fishery Management Plans to Bring Accountability to Our Fisheries

It has been eight years since the SFA was passed, yet overfishing continues on many stocks, including many major stocks, around the country. While it may be unreasonable to expect complete rebuilding of all depleted stocks by now, it is entirely reasonable to expect overfishing to have ended, especially in cases such as New England where overfishing has been a chronic problem.

To end overfishing and rebuild stocks, New England needs to enact fishery management measures that are adequate to meet the biological objectives of the fishery. The "input controls"—limits on DAS, gear restrictions, and area closures—used for years by New England's fishery managers to attempt to indirectly control fishing mortality have failed repeatedly to meet these biological objectives. For example, New England landings of cod have exceeded their annual target catch levels for each of the past seven years since the passage of the SFA, sometimes by as much as two or three times.[189] The key to ensuring short and long-term accountability in the fisheries management system is through implementation of enforceable stock-specific catch limits.[190] Enforceable catch limits are "output controls," their principal benefit lying in the fact that they directly control the amount of fish actually taken out of a fishery by shutting it down when the quota is met.

To be effective, enforceable catch limits must be implemented in conjunction with improved information systems for closely tracking the catch and the movement to area- and sector- based management to ensure economic efficiency and fair allocation.[191] Enforceable catch limits can have very different impacts on the fishery depending on how they are structured and implemented. While effective at limiting the total amount of catch, a quota-based system that relies solely on total allowable catch (TAC), without concern for how the catch is allocated to the different competing sectors of the fleet and how the quota opportunity is distributed through the fishing season, can result in grossly unfair resource allocation among different fleet sectors as well as derby fishing, safety, and pricing issues.[192] Hard quota systems with the design features noted here can reduce such unintended consequences to reasonable levels. While New

189. *See supra* note 83.
190. *See supra* notes 80–82 and accompanying text.
191. *See infra* Part V.F.
192. *See supra* notes 85–86 and accompanying text.

England fisheries may be moving in the direction of output controls,[193] federal law should require enforceable catch limits for each fishery under management.[194]

E. The Fishery Management Information Infrastructure Must be Brought into the Twenty-First Century Through Expanded Observer Coverage, Mandatory Vessel Monitoring Systems, and Timely Data Collection

For managers to end overfishing and manage a fishery, they must have credible and timely data as well as the information infrastructure to monitor fishing mortality in real time, to enforce catch limits in real time, and to feed data back into the scientific and management decision-making process promptly. To that end, all U.S. fisheries must be based on a robust observer program with an adequate level of coverage to ensure the veracity of the data reported and both the accuracy and precision of the bycatch estimates for the fishery.[195]

Prior to Judge Kessler's Order to increase observer coverage to five percent,[196] NOAA Fisheries provided only about two percent observer coverage in the New England groundfish fishery.[197] One recent study has suggested that the level of observer coverage in all fisheries should be set at a minimum of twenty percent.[198] Implementing such coverage will be a

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193. *See* AMENDMENT 13, *supra* note 119, at I-vii to I-xi. Under the final proposed Amendment 13, the NEFMC has introduced enforceable catch limits in several new management programs, including four special access programs and the creation of a Georges Bank Cod Hook sector. *See supra* notes 110–12 and accompanying text. While these enforceable catch limits by no means cover even a majority of the fishery, they do demonstrate a new recognition by the NEFMC of the value of enforceable catch limits for managing the fishery, and provide a set of important trials to understand the mechanics of administering such a program.

194. Fleet capacity issues are raised in most discussions about U.S. fisheries management and *can* be a significant conservation issue, but only if the catch of such fleet is unregulated. Effective quota controls or management measures that strictly limit catches to the mortality target are far more important in CLF's experience than consideration of the fleet's capacity, although that topic clearly has economic dimensions that may be important. Moreover, fleet capacity determinations are an ever-changing target as current fishing operations become more efficient or effective in pursuing their quarry.

195. This includes assessment of discards so that mortality can be factored into total catch estimates.

196. Conservation Law Found. v. Evans, 211 F. Supp. 2d 55, 58 (D.D.C. 2002).

197. Declaration of Michael P. Sissenwine at 11, Conservation Law Found. v. Evans, 209 F. Supp. 2d 1 (D.D.C. Apr. 1, 2002) (No. 1:00CV01134). To date, NOAA Fisheries continues to provide only about five percent observer coverage. Federal Defendants' Notice of Administrative Action, Ex. 1 at 3, Conservation Law Found. v. Evans, 209 F. Supp. 2d 1 (D.D.C. Apr. 1, 2002) (No. 1:00CV01134) (on file with author).

198. ELIZABETH A. BABCOCK & ELLEN K. PIKITCH, PEW INST. FOR OCEAN SCI. & CHARLOTTE G. HUDSON, OCEANA, HOW MUCH OBSERVER COVERAGE IS ENOUGH TO ADEQUATELY ESTIMATE BYCATCH? 19 (2003), *available at* http://www.oceana.org/uploads/BabcockPikitchGray2003FinalReport.pdf.

significant political challenge given the reluctance of councils to force higher levels of observers on fishing boats and the resistance of NOAA Fisheries to pay for such coverage. However, an adequate observer program is a fundamental building block for any modern fisheries management information system and should apply to all gear sectors capable of catching groundfish.[199]

Accurate and precise estimates of bycatch are only one of the benefits of a quality observer program. Other benefits include the opportunity to observe potential habitat impacts, gather improved spatial and temporal data on commercial and non-commercial species, and assess vessel operating characteristics and safety.[200]

In addition to observers, electronic vessel monitoring systems (VMS) should be required on all groundfish vessels to collect real time data on fishing effort and catch. Electronic VMS provide constant information on vessel location and activity.[201] These are critical elements for ensuring accountability in the fishery through enforceable catch limits. Electronic VMS are important to help ensure that the direct and bycatch limits are not exceeded. Electronic VMS are also critical to the enforcement of seasonal and year round mortality and habitat closures, and for implementing SAPs. For similar reasons, electronic VMS are fundamental to ensuring effective implementation of progressive management programs like area management and sector allocation programs.[202]

Finally, management plans should include mandatory daily electronic dealer reporting. This reporting is necessary to confirm observer and

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199. *See also* PEW OCEANS COMM'N, *supra* note 150, at 112–13 (recommending amending the Magnuson-Stevens Act to include an observer program or another appropriate, effective monitoring scheme in bycatch plans).

200. Settlement Agreement Among Certain Parties, Conservation Law Found. v. Evans, No. 1:00CV01134GK (D.D.C. Apr. 16, 2002). In issuing her May 23 Remedial Order, Judge Kessler required a minimum of ten percent observer coverage effective May 1, 2003, unless NOAA fisheries could establish using the most reliable and current scientific information that a lower level of coverage to assess bycatch was adequate. Conservation Law Found. v. Evans, 211 F. Supp. 2d 55, 58 (D.D.C. 2002). To date, NOAA fisheries has failed to establish that a lower level is adequate, having thus far only been able to establish that this level of observer coverage would provide precise information, but failing to show it would also provide accurate information. Federal Defendants' Notice of Administrative Action, Conservation Law Found. v. Evans, No. 1:00CV01134GK, Ex. 1 at 1, Ex. 2 at 1 (May 1, 2003). Amendment 13 would commit NOAA Fisheries to determine by 2006 if ten percent observer coverage is sufficient for both precise and accurate estimates of catches and discards. Northeast (NE) Multispecies Fishery; Amendment 13, 69 Fed. Reg. 4,362, 4,380 (proposed Jan. 29, 2004) (to be codified at 50 C.F.R. pt. 648).

201. VMS also improves the safety of fishing.

202. Amendment 13 included mandatory VMS as an option, AMENDMENT 13, *supra* note 119, at I-131, however, the NEFMC elected not to include it for the entire fishery. Vessels participating in special access programs, however, will be required to have VMS on board, though at this time they are not required to report catch by VMS. *E.g.*, *id.* at I-58, I-65.

electronic VMS data, and to provide managers with real time information on catch rates and the other data needed to make in-season adjustments of management measures to assure biological goals are met. NOAA Fisheries is currently developing a rule to require electronic dealer reporting for New England fisheries.[203]

F. Area- and Sector-Based Management Programs Should Be Promoted to Maintain Fleet Diversity and to Promote Incentives for Resource Stewardship and Ecosystem-Based Management

New England needs to establish opportunities for creative and progressive fisheries management that supports ecosystem-based approaches and protects the gear diversity and geographical distribution of the New England fleet. The future for New England's groundfish fishery should include area- and sector-based management measures that enhance the flexibility of fishermen and improve the management of the entire marine ecosystem..[204] Amendment 13 provides the opportunity to implement area-based management through a future framework action. This opportunity represents an important first step in the effort to shift fisheries management from being driven exclusively by the science of fish population dynamics, to being derived from sound ecosystem-based principals. The basic premise behind area-based management is that management plans should be developed by the stakeholders in a particular geographic region, and rooted in the collective understanding of the local ecology. Fishermen opting to fish in a particular area would be responsible for helping to develop the management plan with resource managers and other stakeholders.

Amendment 13 also includes opportunities for sector allocations, which allow fishermen to voluntarily create cooperative sectors and receive a share of the overall quota based on the participants' past catch history. Because sectors are governed by enforceable catch limits that would shut

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203. Fisheries of the Northeastern United States Recordkeeping and Reporting Requirements, 50 C.F.R. § 648.7 (2004) (reflecting a regulatory amendment to modify seafood dealer reporting requirements).

204. Amendment 13 includes the first steps toward these approaches in New England. Amendment 13 establishes a sector allocation for hook fishing of Georges Bank cod. Participation in the sector is voluntary and it establishes an enforceable catch limit based on the share of Georges Bank cod caught by members during the 1996-2001 fishing years. There is mandatory use of electronic VMS and seasonal trip limits and gear restrictions apply. This sector establishes an important trial to understand the mechanics of administering sector programs, whose lessons can easily be transferred to the creation of additional sectors or area-based management programs. Amendment 13 also includes the opportunity for additional, voluntary sectors to be formed, which could be based on either the catch history or current DAS allocations of its participants. *See supra* notes 192-95, and accompanying text.

down the fishery once the quota has been reached, sector participants may benefit from not having restrictive regulations, which are unnecessary to meet conservation objectives (e.g., trip limits or DAS restrictions). Further, sectors have built-in incentives for stewardship because as long as the sector meets its hard quota objective, members are not penalized with reductions in their allocation when vessels outside the sector exceed their quotas. Fishermen participating in the sector must also devise a management plan to govern the harvest of their quota, giving fishing communities much more direct involvement in the fishery management process. Sector allocations are similar in many ways to community development quotas which have operated on the West Coast for well over a decade.

Area management and sector allocation, coupled with enforceable catch limits to ensure accountability, will help enable New England's inshore fleet to survive in an environment where much of the available catch and initial recovery of groundfish will be offshore. Such approaches will also help ensure a future for New England's diverse fishing fleet and the coastal communities that are part of New England's heritage. Evidence also suggests that local fishermen, when assured of a future stake in the fishery and given the opportunity to manage local resources, will be better stewards of the resource than will fishermen traveling into an area from distant waters who often pulse fish on those same stocks.[205] Moreover, smaller-scale fishermen use less fuel and inflict less damage on marine habitats than do larger-scale fishermen, both because they are closer to their fishing grounds and because of their tendency to use passive gear (e.g. traps or hooks).[206]

While area and sector management require more complex design measures than simply using a variation on the existing effort controls, they are likely to be the most ecologically sustainable, most fair to fishermen and coastal communities, and more effective in the long run. Specific allocations to inshore and offshore fisheries would prevent unintended preemption of some fishermen from the fishery and provide economic stability and future access to coastal communities.[207] Allocation of the

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205. DANIEL PAULY & JAY MACLEAN, IN A PERFECT OCEAN 120 (2003).

206. *Id.*

207. Future access is an important point in New England where many fishermen left the groundfish fishery when stocks, especially in-shore stocks, collapsed decades ago. Many of these fishermen, however, have continued to fish in healthier fisheries such as Maine's lobster fishery, which has experienced unprecedented growth in recent years. When groundfish stocks rebuild it is fair to provide them the opportunity to reenter the fishery at some level, both in order to provide them with security should their current fishery falter and also to provide a diversification outlet to reduce pressure on the lobster fishery.

TAC through sectors based on gear or vessel types would promote economic stability and fleet diversity. Both area- and sector-based management would help avoid the unintended consequences of a quota-based system based solely on controlling the TAC and the unfair consequences of quota programs that, on their own, can favor larger boats with greater fishing power.

G. All Fishery Management Plans Must Protect Habitat to Restore Ecosystem Health and Ensure the Long-Term Sustainability of the Fishery

While some progress has been made in New England toward ending overfishing and rebuilding depleted stocks, only limited progress has been made toward protecting habitat. Implementing appropriate measures to protect habitat, particularly habitat important to the most vulnerable species of fish, is fundamental to ensuring the long-term health and sustainability of the New England fishery. The NEFMC currently uses seasonal and year-round closures to control overall fishing mortality and to limit fishing on some stocks during critical life stages such as spawning. While the NEFMC is currently in the process of designating certain portions of its year-round mortality closures as "habitat closures,"[208] and continuing current protections from certain gear types, mortality closures to date have been species specific and largely ineffective as tools for sustainable habitat protection. Meanwhile, marine scientists from around the world are concluding that carefully designed networks of marine protected areas (MPAs),[209] including most notably fully protected marine reserves, are critical to the long-term health of marine ecosystems and the fish populations they support.[210] From a structural perspective, this is a major gap in the current marine resource management regime in New England. Absent adoption of an adequate program of MPAs, it is likely that the net

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208. These would represent New England's first habitat closures and are the result of conservation organizations' pressure on the council to take steps to fulfill the Magnuson Act's EFH requirements. *See supra* notes 59–60 and accompanying text. While these areas are now being designated as habitat closures, the larger remaining portions of existing mortality closures are being reopened to bottom trawling and scallop dredging, the most destructive forms of commercial fishing.

209. This includes any area of the marine environment that has been reserved by federal, state, territorial, tribal or local laws or regulations to provide lasting protection to part or all of the natural or cultural resources therein. Exec. Order No. 13,158, 3 C.F.R. 273 (2001), *reprinted in* 16 U.S.C. § 1431 (2000).

210. *E.g.*, PAULY & MACLEAN, *supra* note 205, at 99; NAT'L CTR. FOR ECOLOGICAL ANALYSIS AND SYNTHESIS, SCIENTIFIC CONSENSUS STATEMENT ON MARINE RESERVES AND MARINE PROTECTED AREAS (2001), *available at* http://www.nceas.ucsb.edu/Consensus/consensus.pdf.

productivity of our ocean ecosystem in terms of biodiversity will continue to decline.[211]

A network of MPAs, including fully protected marine reserves, designed with marine biodiversity and ecosystem protection as its primary objective will benefit the long-term health and productivity of New England's ocean ecosystem in several ways. A well designed network of MPAs can provide lasting protection to marine biodiversity (including commercially targeted fish) by setting aside representative areas that capture the full range of biodiversity and habitat types and then ensuring that only uses compatible with these conservation objectives are allowed within the designated MPAs. While biodiversity has current and future commercial value, the primary justification is the biodiversity itself and the critical role every living marine organism plays in ensuring the integrity of the marine ecosystem. Within this network, ecologically important and unique marine habitats could be protected from all adverse, extractive and otherwise disturbing human activities.[212] In addition, fully protected marine reserves within the MPA network could also serve as living laboratories and control sites for marine science and management activities. The availability of such control sites is indispensable to understanding how marine ecosystems work and how human activities impact those ecosystems. An MPA network could also provide the additional benefit of protecting a portion of the core spawning biomass of commercially important or ecologically critical fish species, and thus improve fisheries management.

While creating an integrated network of MPAs, including fully protected marine reserves, is one of the most critical actions that can be taken to ensure the long-term health of the New England ocean ecosystem, substantial habitat protection can be achieved in the short-run by restricting the use of the most destructive types of fishing gear and encouraging the development of new gear that minimizes habitat impacts. Mobile bottom tending fishing gear such as bottom trawls and dredges are widely considered the most destructive forms of commercial fishing gear because

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211. Several of the other twelve National Marine Sanctuaries from around the country are considering establishing fully protected marine reserves within sanctuary boundaries. Designation of a portion of the Stellwagen Bank National Marine Sanctuary in Massachusetts Bay as a fully protected marine reserve, as was done within the Florida Keys National Marine Sanctuary, would be an important step in promoting the use of fully protected marine reserves as a marine resource tool. Today, the Stellwagen Bank Sanctuary is only protected from oil and gas exploration, sand and gravel mining, and dredge and soil disposal.

212. Public Hearing, Faneuil Hall, Boston Mass., Before the U.S. Commission on Ocean Policy (July 24, 2002) (testimony of Peter Shelley, Vice President, Director, Maine Advocacy Center, Conservation Law Foundation, Inc.) at 13–15, *available at* http://oceancommission.gov/meetings/jul23_24_02/shelley_testimony.pdf (last visited Apr. 2, 2004).

they smooth critical shelter habitat and disrupt the "ecosystem engineers"—the plants and animals, such as burrowing animals, sponges, and hard corals, that modify habitat through their activities.

Therefore, known habitats that are sensitive to mobile bottom tending fishing gear should be closed to such gear immediately. NOAA Fisheries should then identify those specific areas, or zones, where bottom trawling and dredging can take place. Its decisions should be based on whether the scientific evidence indicates that these activities can be conducted without altering or destroying a significant amount of habitat and without reducing biodiversity.[213] Areas not designated suitable for such gear should be closed to bottom trawling and dredging. Finally, programs should be established to support gear modifications that reduce impacts on habitat, and management measures should be designed and implemented to encourage the use of gears that minimize habitat impacts.

CONCLUSION

The provisions of the Sustainable Fisheries Act have made significant improvements possible in the New England groundfish fishery, albeit with the assistance of some judicial oversight. Many, although not all of our important commercial fish and shellfish populations, have benefited from these improvements. Substantial issues remain, however, both within the domain of fisheries management, as well as in our overall national ocean policy. New federal laws and policies regulating issues ranging from biodiversity protection to multi-use management planning to ocean zoning must be implemented to enable our oceans to sustain healthy ecosystems and continue to provide the goods and services on which we depend. Fisheries regulation and pollution control, habitat protection, and marine resource development have to be merged into an integrated, scientific framework, reflecting the interconnections between all life and its environment.

The painful experiences and hard lessons from mismanagement that have accumulated over the past decades in New England should remind us all that the ocean's bounty is no longer limitless and, in fact, never was. We have a stewardship responsibility to ourselves and our descendents to translate those hard lessons into effective management programs for this wonderful public commons. While the full promise of the Magnuson-Stevens Act still lies outside our immediate grasp, the objectives are now clearly in our sight.

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213. PEW OCEANS COMM'N, *supra* note 150, at 47, 111.