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HABITAT PROTECTION UNDER THE MAGNUSON- STEVENS ACT: CAN IT REALLY CONTRIBUTE TO ECOSYSTEM HEALTH IN THE NORTHWEST ATLANTIC?

*Roger Fleming and Dr. John D. Crawford**

I. INTRODUCTION

New England's legendary Atlantic cod fishery is in deep trouble. The cod, along with several additional fish species that make up New England's groundfish fishery, remain critically depleted, and are at only a small fraction of healthy levels. In 2004, the New England Fishery Management Council (NEFMC or Council) and the National Marine Fishery Service (NMFS) implemented the first comprehensive rebuilding program for groundfish in New England.¹ This plan relies primarily on management measures designed to reduce fishing rates in order to end overfishing and rebuild overfished stocks.² The most recent scientific review by the

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1. NEW ENGLAND FISHERY MANAGEMENT COUNCIL, FINAL AMENDMENT 13 TO THE NORTHEAST MULTISPECIES FISHERY MANAGEMENT PLAN INCLUDING A FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT AND AN INITIAL REGULATORY FLEXIBILITY ANALYSIS (Dec. 2003), *available at* <http://www.nefmc.org/nemulti/index.html> (follow "Final Amendment 13-December 2003" hyperlink) [hereinafter FINAL AMENDMENT 13].

2. *Id.* at I-82 to I-91 (The principle management measure used to control fishing mortality in New England is regulation of the number of days fishermen can spend at sea fishing in each fishing year. Examples of other management measures relied upon in New England include gear limitations and area closures. These types of measures are often referred to as "input controls" because they are designed to limit the amount of "fishing effort," such as the number of days fished and the number of fishermen placed into the fishery. These measures fall short of "output controls," which put actual limits on the amount of fish removed from the fishery.).

National Oceanic & Atmospheric Administration (NOAA) Fisheries' Northeast Fisheries Science Center (NEFSC) released in 2005, however, showed that overfishing was still occurring on several groundfish species, including the Georges Bank and Gulf of Maine cod stocks.³ Their levels had plummeted another twenty-five and twenty-one percent respectively since the last comprehensive NEFSC review in 2001, leaving them at only ten and twenty-three percent of the target levels that scientists consider the minimum for health and sustainability.⁴ The continued depletion of New England's critical groundfish populations is not only bad news for the fish, but also for coastal New England fishermen and their communities, who face economic hardship caused by regulators' attempts to end overfishing.

While ending overfishing is clearly a fundamental first step in addressing our fisheries problems,⁵ the healthy growth and development of juvenile fish is essential to rebuilding sustainable commercial fisheries and the healthy ecosystems fish require. Habitat is necessary to fish for food, shelter, and reproduction, and demersal (groundfish) juveniles are particularly dependent upon sea floor structure for predator evasion and energy conservation.⁶ Numerous scientific studies have demonstrated that many different types of fishing gear—especially bottom trawls and dredges but also gillnets, traps, longlines and other gear—degrade critical fish habitat

3. NORTHEAST FISHERIES SCIENCE CENTER, A REPORT OF THE STOCK ASSESSMENT WORKSHOP, 2005 GROUND FISH ASSESSMENT REVIEW MEETING vi-viii (Sept. 2005) [hereinafter 2005 GARM].

4. *Id.* at 2-3, 2-4, 2-156.

5. Ratana Chuenpagdee et al., *Shifting Gears: Assessing Collateral Impacts of Fishing Methods in U.S. Waters*, FRONTIERS IN ECOLOGY AND THE ENVIRONMENT 517 (2003).

6. See R. GREGORY LOUGH, ATLANTIC COD, *GADUS MORHUA*, LIFE HISTORY AND HABITAT CHARACTERISTICS EDITION 91 (2nd ed. 2004) (structures provided by benthic epifauna and abiotic relief, such as sand-waves, offer shelter from predators and prevailing currents); P. J. Auster et al., *Use of Sand Wave Habitats by Silver Hake*, 62 JOURNAL OF FISH BIOLOGY 143, 143-152 (2003); Vytenis Gotceitas & Joseph A. Brown, *Substrate Selection By Juvenile Atlantic Cod (Gadus-Morhua) - Effects of Predation Risk*, 93 OCEOLOGIA 31, 31-37 (Feb. 1993); J. B. Lindholm et al., *Habitat Mediated Survivorship of Juvenile (0-year) Atlantic Cod Gadus morhua*, 180 MARINE ECOLOGY 247 (1999); J. B. Lindholm, *Juvenile Fish Responses to Variations in Seafloor Habitats: Modeling the Effects of Fishing and Implications for the Design of Marine Protected Areas*, 15 CONSERVATION BIOLOGY 424 (2001); M. Tupper & R. G. Boutilier, *Effects of Habitat on Settlement, Growth, and Postsettlement Survival of Atlantic Cod (Gadus-Morhua)*, 52 CANADIAN JOURNAL OF FISHERIES AND AQUATIC SCIENCES 1834 (1995); C. L. Gerstner, *Use of Substratum Ripples for Flow Refuging by Atlantic Cod, Gadus Morhua*, 51 ENVIRONMENTAL BIOLOGY OF FISHES 455 (1988); R. G. Lough & G. R. Bolz, *The Movement of Cod and Haddock Larvae onto the Shoals of Georges Bank*, 35 JOURNAL OF FISH BIOLOGY 71 (1989).

which can lead to declines in fish populations.⁷ As a result, certain fishing gear should be restricted in sensitive habitat areas to protect juvenile fish habitat and to help ensure that marine fish populations are restored to healthy levels for years to come.⁸

Ten years after the Sustainable Fisheries Act⁹ was enacted in 1996 to strengthen the conservation provisions of our nation's fisheries law, protections for Essential Fish Habitat (EFH) from harmful fishing practices remain inadequate. Over this time period, the NEFMC, like most of our nation's fishery management councils, has demonstrated all the classic failures of protecting habitat by hiding behind scientific uncertainty, maintaining that existing management measures are sufficient, limiting prohibitions of destructive gear to where it currently is not a threat, and providing limited protection for some of the most vulnerable habitat types while ignoring other important areas.¹⁰

The NEFMC itself appears to recognize that it has fallen short in fulfilling the conservation promise offered in the habitat provisions added by the Sustainable Fisheries Act. The NEFMC is currently developing an omnibus habitat amendment designed to review and update its EFH

7. See P. J. Auster & R. W. Langton, *The Effects of Fishing on Fish Habitat*, AM. FISH SOC'Y SYMPOSIUM 150-87 (1999) [hereinafter Auster & Langton 1999]; P. J. Auster et al., *The Impacts of Mobile Fishing Gear on Sea Floor Habitats in the Gulf of Maine (Northwest Atlantic): Implications for Conservation of Fish Populations*, 4 REVIEWS IN FISHERIES SCIENCE 185-202 (1996) [hereinafter Auster et al., 1996]; J. S. Collie et al., *Effects of Bottom Fishing on the Benthic Megafauna of Georges Bank*, 155 MARINE ECOLOGY PROGRESS SERIES 159-172 (1997) [hereinafter Collie et al., 1997]; J. S. Collie et al., *Photographic Evaluation of the Impacts of Bottom Fishing on Benthic Epifauna*, 57 ICES JOURNAL OF MARINE SCIENCE 987-1001 (2000) [hereinafter Collie et al., 2000a]; J. S. Collie et al., *A Quantitative Analysis of Fishing Impacts on Shelf-Sea Benthos*, 69 JOURNAL OF ANIMAL ECOLOGY 785-98 (2000) [hereinafter Collie et al., 2000b]; J. M. Hermsen et al., *Mobile Fishing Gear Reduces Benthic Megafaunal Production on Georges Bank*, 260 MARINE ECOLOGY PROGRESS SERIES 97-108 (2003); J. Lindholm et al., *Role of a Large Marine Protected Area for Conserving Landscape Attributes of Sand Habitats on Georges Bank (NW Atlantic)*, 269 MARINE ECOLOGY PROGRESS SERIES 61-68 (2004); Chuenpagdee et al., *supra* note 5, at 517-24; Paul K. Dayton et al., PEW OCEANS COMM'N, ECOLOGICAL EFFECTS OF FISHING IN MARINE ECOSYSTEMS OF THE UNITED STATES 24 (2002), available at http://www.pewtrusts.org/pdf/environment_pew_oceans_effects_fishing.pdf.

8. PEW OCEANS COMM'N, AMERICA'S LIVING OCEANS: CHARTING A COURSE FOR SEA CHANGE 47, 111-12 (May 2003), available at http://www.pewtrusts.com/pdf/env_pew_oceans_final_report.pdf.

9. Pub. L. No. 104-297, 110 Stat. 3559 (1996).

10. MARINE FISH CONSERVATION NETWORK, RAY OF HOPE: SUCCESSES AND SHORTCOMINGS IN PROTECTING ESSENTIAL FISH HABITAT 1-2 (2006), available at http://www.conservefish.org/site/pubs/network_reports/efh_rayofhope_lowres.pdf.

designations and to consider new actions designed to protect habitat.¹¹ Recently, in response to a request for proposals to identify habitat areas of particular concern in New England waters, the Conservation Law Foundation (CLF) and World Wildlife Fund-Canada (WWF-Canada) developed an innovative new strategy to restore New England's depleted cod and other groundfish populations. These groups proposed creating a network of Habitat Areas of Particular Concern (HAPC), locations where large concentrations of young fish from eight struggling, overfished species, such as Atlantic cod, hake, and yellowtail flounder live (the Multi-species HAPC proposal).¹² With the aid of a powerful computer modeling tool, the groups generated a unique, objective, and science-based proposal that seeks to restore and protect areas that provide critical habitat for many species at the same time, thus keeping the number of isolated habitat sites to a minimum. If implemented, the result would be an efficient system that conserves critical areas with large numbers of juvenile fish while minimizing the impacts to U.S. and Canadian fishermen.

Unfortunately, when called upon to recognize the areas identified in the Multi-species HAPC proposal as HAPCs and to take action to protect them, the NEFMC abruptly set the proposal aside despite the strong support of the leading habitat scientists advising the Council. This rejection by the Council, which is overseeing the demise of one of the world's legendary fishing grounds, is especially frustrating given modern scientific understanding of the value of habitat protection as the key component of ecological health. This rejection calls into question whether the Magnuson-Stevens Act's¹³ habitat provisions are an adequate tool to help stop the decline of our ocean ecosystems and for restoring such ecosystems to a reasonable approximation of what they once were.

This Article looks at the implementation of the Magnuson-Stevens Act's habitat provisions through the prism of the New England groundfish fishery. The fisheries of the Northwest Atlantic, under the oversight of the NEFMC, have played a pivotal role as case studies for Congress throughout the Magnuson-Stevens Act's history. Examining the New England fishery allows us to evaluate where managers have delivered on the Act's habitat

11. See New England Fishery Management Council, Habitat/Marine Protected Areas, <http://www.nefmc.org/habitat/index.html> (last visited Dec. 15, 2006).

12. JOHN CRAWFORD & ROGER FLEMING, CONSERVATION LAW FOUNDATION, HABITAT AREAS OF PARTICULAR CONCERN: A MULTI-SPECIES APPROACH FOR JUVENILES OF EIGHT OVER-FISHED SPECIES - REVISED PROPOSAL (May 12, 2005), available at http://www.nefmc.org/habitat/groundfish_species_HAPC_proposal_june05.pdf.

13. Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. §§ 1801-1883 (2000).

conservation promises, where they have fallen short, and where one might look to begin to chart a better course for the health of our oceans. The Council's failures also help bring into focus the need for new tools for restoring and protecting ecological health, the need for reform of the nation's fishery management councils, and the need for a broader approach to ocean governance.

II. OVERVIEW OF FEDERAL FISHERIES MANAGEMENT

When passed in 1976, the Magnuson Fishery Conservation and Management Act (FCMA or Magnuson Act) ushered in a new era of federal fishery management in the United States.¹⁴ 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 Magnuson Act specified, without explicitly prioritizing, seven "national standards" for managing fisheries in the new 200-mile offshore "fishery conservation zone."¹⁵ These standards represented the multiple, and sometimes competing, interests inherent in the long-term management of this economically valuable public resource.

In addition to the national standards, the management structure created under FCMA established eight regional fishery management councils to regulate commercial and recreational fishing.¹⁶ In order to facilitate meeting FCMA's primary goals of developing the American fishing industry and phasing out foreign fishing, Congress gave the commercial fishing industry a leading role in writing fishery management rules. The regional fishery management councils were filled with fishing industry representatives, as well as state and federal regulators.¹⁷ The Magnuson Act vested responsibility in the councils for developing and recommending fishery management measures to NMFS through fishery management plans (FMPs), and NMFS in turn received the more limited authority to approve, disapprove, or partially approve the councils' recommendations.¹⁸ Under this structure, which remains in place today, in the vast majority of cases NMFS approved the councils' recommendations demonstrating that the

14. 16 U.S.C. §§ 1801-1883 (1976).

15. *Id.* § 1851.

16. *Id.* § 1852(a).

17. JOSH EAGLE ET AL., TAKING STOCK OF THE REGIONAL FISHERY MANAGEMENT COUNCILS 12, 24-26 (2003), available at http://fisheries.stanford.edu/Stanford_Council_Report.pdf.

18. 16 U.S.C. § 1854(a)(3) (1976).

industry dominated councils are the *de facto* regulators of U.S. ocean fisheries.¹⁹

Federal fishery policy established under the Magnuson Act's structure struggled to strike the proper balance between conservation and economic development of the ocean resources. The regional fishery management councils, including New England's, often seemed to flounder on the various policy choices reflected in the national standards, but not ranked by Congress, resulting in widely different strategies, practices, and consequences.²⁰

III. THE NEW ENGLAND GROUND FISH FISHERY— FROM LEGEND TO IGNOMINY

The Atlantic codfish (*Gadhus morhua*) that inhabit the rich fishing grounds off New England and Eastern Canadian shores provided a boon to European settlers. Cod was so abundant that by the mid-sixteenth century, sixty percent of all fish eaten in Europe was cod and this remained true for the next two centuries.²¹ European demand propelled the cod fishery to world status by the eighteenth century, creating the so-called "codfish aristocracy" of Boston.²²

New England's cod fishery owes its historic prosperity to the fact that it is part of one of the world's most productive and unique marine ecosystems. The defining characteristic of this ecosystem is Georges Bank, a large submarine plateau located off New England's coast. Georges Bank forms the off-shore boundary of New England's own semi-enclosed sea known as the Gulf of Maine. Cold, nutrient-rich waters from the Labrador current flow from the North and mingle with warm Gulf stream waters in the shallow areas on Georges Bank. Here, sunlight penetrates the water column, providing the ideal habitat for phytoplankton, which on Georges Bank grows three times faster than on any other continental shelf.²³ This phytoplankton production fuels a highly productive food web on Georges Bank and in the Gulf of Maine, where the Atlantic codfish traditionally

19. EAGLE ET AL., *supra* note 17, at 32.

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

21. American Museum of Natural History, Science Bulletins, *Will the Fish Return? How Gear and Greed Emptied Georges Bank*, <http://sciencebulletins.amnh.org/biobulletin/biobulletin/story1227.html> (last visited Dec. 15, 2006).

22. D. A. Farnie, *The Commercial Empire of the Atlantic 1607-1783*, 15 THE ECONOMIC HISTORY REVIEW 205, 205-18 (1962).

23. American Museum of Natural History, Science Bulletins, *supra* note 21.

reigned as the top predator. The unique oceanographic features of Georges Bank and the Gulf of Maine not only fueled a cod-ecosystem, but the cod and other groundfish like flounder and haddock in turn supported the fisheries that helped give rise to our nation.²⁴

Despite the biological productivity of this ecosystem, overfishing has strained this rich natural resource. Many New England fishermen and coastal communities still depend on New England's fisheries for their livelihood; the Atlantic cod, however, is no longer king.²⁵ Moreover, the legendary status of the New England groundfish fishery that helped give rise to a nation has been transformed to what some have referred to as the national poster child for poor fisheries management.²⁶

For hundreds of years, the New England groundfish fishery was characterized by an abundance and diversity of target fish species, and a variety of fishing vessels and gear types used by fishing communities spread throughout the different ports in the region.²⁷ In New England the term "groundfish" refers to a multi-species complex of twelve species of bottom dwelling fish, managed as nineteen different fish populations.²⁸

24. *See generally*, MARK KURLANSKY, *COD: A BIOGRAPHY OF THE FISH THAT CHANGED THE WORLD* (1997).

25. For a review of the history and first twenty-eight years of New England federal management history under the Magnuson-Stevens Act, see Peter Shelley et al., *The New England Fisheries Crisis: What Have We Learned?*, 9 TUL. ENVTL. L.J. 221, 223-33 (1996), and Roger Fleming et al., *Twenty-Eight Years and Counting: Can the Magnuson Act Deliver on Its Conservation Promise?*, 28 VERMONT L. REV. 579, 581-599 (2004).

26. *See, e.g.*, Judith Layzer, *Fish Stories: Science, Advocacy, and Policy Change in New England Fishery Management*, 34 POLICY STUDIES JOURNAL 59 (Feb. 2006).

27. 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 Georges Bank and Great South Channel fisheries over the years. *See generally* NORTHEAST REGIONAL OFFICE OF THE NATIONAL MARINE FISHERIES SERVICE, FISHERY STATISTICS OFFICE, NORTHEAST PRELIMINARY FISHERIES STATISTICS (2006), available at <http://www.nero.noaa.gov/ro/fso/mul.htm>.

28. The twelve species currently included in the Northeast Multi-Species 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 (*Pseudopleuronectes americanus*), windowpane flounder (*Scophthalmus aquosus*), redfish (*Sebastes fasciatus*), white hake (*Urophycis tenuis*), Atlantic halibut (*Hippoglossus hippoglossus*), and ocean pout (*Macrozoarces americanus*). Atlantic cod are further managed as two sub-populations: Georges Bank cod and Gulf of Maine cod; yellowtail flounder are managed as three sub-populations: Southern New England/Mid-Atlantic yellowtail flounder, Cape Cod/Gulf of Maine yellowtail flounder, and Georges Bank yellowtail flounder; haddock are managed as two sub-populations: Georges Bank haddock

These species frequently share the same habitat and are susceptible to being caught by the same fishing gear.²⁹

During the 1980s and 1990s, New England groundfish stocks fell into precipitous decline: from 1983-1993, total Northeast landings of the principle groundfish stocks fell sixty percent; Northeast commercial landings of cod declined nearly fifty-five percent.³⁰ Heavy fishing pressure on the New England groundfish complex reduced the estimated total biomass of the twelve groundfish species to the lowest aggregate levels ever recorded by scientists.³¹ A groundbreaking 1991 federal district court victory resulted in an order to the NEFMC to develop and implement an amendment to the FMP designed to stop this decline by ending overfishing on cod, haddock, and yellowtail flounder populations.³² This plan amendment, implemented in 1994 and known as Amendment 5 to the Northeast Multi-species (groundfish) Fishery Management Plan (Northeast Multi-species FMP), focused on reducing fishing effort by, among other things, ending entry into the fishery by 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.³³ These effort controls are fundamentally the same types of management measures relied upon in New England today.

Unfortunately, these changes came too late to stem the tide of collapse in New England's groundfish population. In 1994, scientists reported that Georges Bank haddock and southern New England yellowtail flounder stocks had collapsed and that the Georges Bank cod stock was in "imminent danger" of collapse.³⁴ Between 1993 and 1995, landings of cod fell sixty-

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. *See* 2005 GARM, *supra* note 3, at 1-1, 1-4.

29. 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.

30. *See* Shelley et al., *supra* note 25, at 224.

31. *See id.* at 225, 230-32.

32. *Id.* at 229.

33. *Id.* at 230.

34. *See* Fleming et al., *supra* note 25, at 582 (quoting NATIONAL MARINE FISHERIES SERVICE, REPORT OF THE 18TH NORTHEAST REGIONAL STOCK ASSESSMENT WORKSHOP, THE PLENARY 42, 53 (1994)).

six percent from 23,113 metric tons (mt) to an all time low of 7859 mt.³⁵ NMFS issued an unprecedented special advisory for Georges Bank groundfish declaring that Amendment 5 was “clearly inadequate” to prevent the collapse of cod or allow the rebuilding of yellowtail flounder.³⁶ The advisory directed managers to reduce fishing mortality for these two species “to as low a level as possible, approaching zero.”³⁷ Following these grim reports of actual and impending stock collapses, NMFS, through emergency action, closed over 6500 square miles of Georges Bank and southern New England waters to fishing.³⁸

As the NEFMC struggled to establish fishing mortality targets that if achieved would rebuild the major groundfish stocks and to develop a suite of management measures that would reduce fishing pressure enough to meet the targets,³⁹ the social and economic costs of the historical mismanagement of the groundfish complex were mounting rapidly throughout the region. Traditional groundfishing ports in downeast Maine, such as Stonington and Eastport, stopped participating in the fishery because of the combination of the lack of viable fish populations within reach of their smaller boats and the attraction of the strong lobster fishery in coastal waters.⁴⁰ Groundfish landings by vessels remaining in the fishery declined for all managed species between fifteen and sixty-three percent between 1993 and 1995.⁴¹

These declines were the result of a combination of low biological abundance of the species and the mounting management measures designed to reduce fishing mortality. Despite the decreased landings, the NEFMC’s science advisors estimated that another seventeen percent reduction on average in fishing mortality were needed in 1997 on cod, haddock, and yellowtail flounder.⁴²

Against this backdrop, most members of the New England congressional delegation chose to ignore the universal consensus of the scientific community that reducing fishing mortality was critical to reversing the

35. See 2005 GARM, *supra* note 3, at 2-8.

36. See Fleming et al., *supra* note 25, at 582.

37. *Id.*

38. *Id.* (citing Northeast Multi-Species Fishery, 59 Fed. Reg. 63,926 (Dec. 12, 1994)).

39. See Northeast Multi-Species Fishery, Amendment 7 Final Rule, 61 Fed. Reg. 27,710-11, 27,714 (May 31, 1996). Amendment 7 sought to cut fishing mortality on stocks of cod, haddock, and yellowtail flounder by some eighty percent over a two-year period from the estimated 1993 mortality levels and extended the emergency closure. Northeast Multi-Species Fishery, Amendment 7 Proposed Rule, 61 Fed. Reg. 8540, 8541-2, 8559 (Mar. 5, 1996).

40. See Fleming et al., *supra* note 25, at 583.

41. See *id.* at 583-84.

42. *Id.* at 584.

declines in groundfish populations, and pressured the Department of Commerce not to implement further mortality reductions.⁴³ There was a strong conservation tenor to the discussions in Congress at this time over reauthorization of the FCMA, and bi-partisan support for major fisheries management reform. It might seem surprising, therefore, that New England's congressional delegation would support efforts to stall actions designed to begin the recovery of groundfish populations in New England. This illustrates, however, the strong emotional hold that commercial fishing has on members of Congress and the sensitivity that congressional leaders have for the plight of the constituent fishing communities in their districts.

IV. THE SUSTAINABLE FISHERIES ACT OF 1996

While New England struggled to develop an effective groundfish FMP that met the FCMA's original conservation objectives, the congressional debate over reauthorization and reform of the Magnuson Act heated up in the mid-1990s.⁴⁴ Despite success in court that caused NMFS to begin to address overfishing in New England and elsewhere,⁴⁵ conservationists concluded that the original statute was structurally flawed and incapable of producing sustainable fisheries. The FCMA not only failed to provide the framework for producing long-term sustainable fisheries through ecosystem-based fisheries management, its resource development objectives were promoting the very excessive fishing practices and other unsound stewardship practices that were defeating the conservation objectives of the Act.⁴⁶

Existing FCMA 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,⁴⁷ and they did not set any meaningful expectations for rebuilding overfished fish populations. Further, it was well known that bycatch (the catch and discard of non-target fish, mammals, and ocean birds) was resulting in tremendous waste, yet the

43. *Id.*

44. 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 (1996).

45. *Conservation Law Found., Inc. v. Mosbacher*, No. 91-11759-MA, 1991 WL 501640 (D. Mass. Aug. 28, 1991); *aff'd* *Conservation Law Found., Inc. v. Mosbacher*, 966 F.2d 39 (1st Cir. 1992).

46. Iudicello et al., *supra* note 44, at 342.

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

FCMA was entirely silent on bycatch.⁴⁸ Finally, the FCMA paid no meaningful attention to habitat protection, requiring only that FMPs “include readily available information regarding the effects of habitat alteration on fisheries and that councils comment and make recommendations on activities . . . likely to impact anadromous fish habitat.”⁴⁹

Overfishing during the first twenty years under the FCMA resulted in high levels of bycatch and destruction of fish habitat and pushed many marine fish populations to unsustainably low levels.⁵⁰ 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 a number of frustrated, smaller scale coastal fishermen organized as the Marine Fish Conservation Network.⁵¹ These groups descended on Congress seeking to change the focus of the FCMA from promoting fishing to conserving fish. They sought reform of fisheries management in three key areas: overfishing, bycatch, and habitat protection.⁵²

During an era in which a Republican-controlled Congress was in the midst of a series of unprecedented “attempts to roll back America’s environmental laws,”⁵³ a unanimous Senate and a nearly unanimous House responded, reauthorizing and amending the FCMA by enacting the Sustainable Fisheries Act of 1996⁵⁴ (SFA) (renaming the FCMA the Magnuson-Stevens Fishery Conservation and Management Act) (Magnuson-Stevens Act). The SFA made significant amendments to the

48. *Id.* at 343. Worldwide, scientists have estimated that fishermen discarded about twenty-five percent of what they caught during the 1980s and the early 1990s, totaling approximately sixty billion pounds each year. D. L. ALVERSON ET AL., A GLOBAL ASSESSMENT OF FISHERIES BYCATCH AND DISCARDS (1994), *available at* <http://www.fao.org/DOCREP/003/T4890E/T4890E02.htm#ch1.1.5>. In the United States in 2002, the bycatch in twenty-seven of the nation’s most important fisheries totaled more than two billion pounds, although the full magnitude of the problem is unknown because bycatch monitoring remains very poor despite federal legal requirements. *See* MARINE FISH CONSERVATION NETWORK, TURNING A BLIND EYE: THE ‘SEE NO EVIL’ APPROACH TO WASTEFUL FISHING I (2006), *available at* http://www.conservefish.org/site/pubs/network_reports/blindeye_lowres.pdf.

49. Iudicello et al., *supra* note 44, at 343-44.

50. At the time of the reauthorization debate, NOAA Fisheries estimated that of the 231 federally recognized fish stocks nationwide, 65 were overfished, 71 were fully exploited, and the status of 42 stocks were unknown. *Id.* at 341.

51. Marine Fish Conservation Network, <http://www.conservefish.org/> (last visited Dec. 15, 2006).

52. Iudicello et al., *supra* note 44, at 342.

53. *Id.* at 339.

54. Sustainable Fisheries Act, Pub. L. No. 104-297, 110 Stat. 3559 (Oct. 11, 1996).

FCMA; it was designed to cure a number of structural deficiencies and gaps in the original legislation in order to “to conserve and manage the fishery resources found off the coasts of the United States.”⁵⁵

The SFA substantially rewrote the FCMA’s national standards and related provisions in a number of areas.⁵⁶ The most important change was the revised definition of “optimal yield,” making it clear that fishing mortality has to be set at rates that are no greater than the rate that will produce maximum sustainable yield, a change from prior law that allowed rates to be set above sustainable yield as a result of social, economic, or ecological factors.⁵⁷ This was a significant change to fishery management philosophy and made clear that Congress recognized that the greater flexibility that was allowed under the FCMA was undercutting the long-term objectives of producing high yield, sustainable fisheries.⁵⁸ 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.”⁵⁹

55. 16 U.S.C. § 1801(b)(1) (2000).

56. While Congressional amendments to the Magnuson-Stevens Act substantially improved the statutory framework for fisheries management in the United States, it must be stressed that the Act remains fundamentally a resource development statute. Conservation objectives from that perspective are not advanced for their own intrinsic merit, or for scientific purposes; but rather they are advanced 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).

57. 16 U.S.C. § 1802(28)-(29) (2000). Fishing mortality rates could still be reduced below the rate that would produce maximum sustainable yield as a result of social, economic, or ecological factors. *Id.* For a technical discussion of this important change, see Fleming et al., *supra* note 25, at 586-87.

58. This issue was extensively debated by Congress and the vote on the amendments that established maximum sustainable yield as an upper boundary for 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) (NOAA Fisheries commenting on debate of Optimal Yield/Maximum Sustainable Yield).

59. 16 U.S.C. § 1802(28)(c) (2000). In the New England rebuilding plan established in 2003, Amendment 13, the NEFMC elected to “phase-in” over time the fishing rate reductions necessary to rebuild some overfished stocks within the specified rebuilding time frame in order to reduce economic and social impacts at the beginning of the rebuilding program. FINAL AMENDMENT 13, *supra* note 1, at I-35. Even though this approach arguably achieves the same rebuilding objective on paper, the change in the definition of optimum yield in the SFA appears to clearly prohibit fishing effort at levels higher than the maximum sustainable yield. In taking this approach, the NEFMC sought to take advantage of apparently contradictory language in the Magnuson-Stevens Act’s rebuilding section, which states that fisheries councils must “specify a time period for ending overfishing” for overfished fisheries, i.e., bringing fishing mortality rates below the rates that will produce

Rebuilding the nation's depleted fish populations was a major focus of the SFA. The cornerstone of the new Magnuson-Stevens Act's approach to rebuilding fish populations is its requirements: (1) that each FMP specify "objective and measurable criteria"⁶⁰ for determining when a stock is overfished⁶¹ or when overfishing⁶² is occurring; and (2) that 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 approaching the overfishing or overfished threshold.⁶³ Congress directed that such rebuilding programs should be "as short as possible" but "not [to] exceed ten years [with certain exceptions]."⁶⁴

The SFA also added National Standard 9, which requires managers to avoid or minimize bycatch.⁶⁵ 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 they are met.

maximum sustainable yield (Fmsy). 16 U.S.C. § 1854(e)(4)(A) (2000). An approach to fisheries management that allows for the heaviest fishing pressure to be applied to the stocks that are most depleted would seem to make little sense. From a biological perspective such continued high fishing mortality increases the biological risk to these more threatened stocks. See ANDREW I. L. PAYNE, UNIVERSITY OF NEW HAMPSHIRE, REPORT ON THE GROUND FISH SCIENCE PEER REVIEW MEETING 15-18 (2003), available at <http://www.nefsc.noaa.gov/groundfish/Payne.pdf> (suggesting that it is better to have mortality rates lower than Fmsy). Nonetheless, in a somewhat illogical opinion, this approach was upheld in one district court. The court held that overfishing can continue for a period of time so long as the rebuilding plan's overall timeframe is achieved. *Oceana v. Evans*, 2005 WL 555416, 13 (D.D.C. 2005).

60. 16 U.S.C. § 1853(a)(10) (2000).

61. 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).

62. Based on the NOAA Fisheries guidelines for implementing National Standard 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. Magnuson-Stevens Act Provisions, 50 C.F.R. § 600.310(d)(ii) (2005).

63. 16 U.S.C. § 1854(e)(3) (2000).

64. *Id.* § 1854(e)(4)(A)(i)-(ii).

65. "Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch can not 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 "bycatch" includes finfish and sea turtles, but not marine mammals or sea birds. Sustainable Fisheries Act, *supra* note 54, § 102(2).

Bycatch can also preclude more productive uses of fishery resources.⁶⁶ The Magnuson-Stevens Act 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.⁶⁷

Finally, Congress made new habitat-related findings in response to the growing evidence that the productive capacity of the nation’s oceans was suffering long term degradation from the effects of fishing gear and other perturbations of bottom habitat. Congress found that “[c]ertain stocks of fish have declined to the point where their survival is threatened, and other stocks of fish have been so substantially reduced in number that they could become similarly threatened as a consequence of . . . direct and indirect habitat losses which have resulted in a diminished capacity to support existing fishing levels.”⁶⁸ 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,”⁶⁹ and that a “national program for the conservation and management of the fishery resources of the United States is necessary . . . to facilitate long-term protection of essential fish habitats”⁷⁰

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 the fishery based on the guidelines established by the Secretary

66. 50 C.F.R. § 600.350(b) (2005).

67. 16 U.S.C. § 1853(a)(11) (2000). The NEFMC has been successfully sued twice for its failure to establish a standardized bycatch reporting methodology in its groundfish fishery. *Conservation Law Found. v. Evans*, 209 F. Supp. 2d 1 (D.D.C. 2001); *Oceana v. Evans*, 2005 WL 555416. The Council is now preparing a methodology and it is anticipated to be completed in 2007. NEW ENGLAND FISHERY MANAGEMENT COUNCIL, STANDARDIZED BYCATCH REPORTING COMMITTEE, TIMELINE, http://www.nefmc.org/issues/sbrm/revise_timeline.pdf (last visited Dec. 15, 2006).

68. 16 U.S.C. § 1801(a)(2)(C) (2000).

69. *Id.* § 1801(a)(9).

70. *Id.* § 1801(a)(6). Based on these findings, Congress also declared that a new purpose of the Magnuson-Stevens Act is “to promote the protection of essential fish habitat in the review of projects conducted under Federal permits, licenses, or other authorities that affect or have the potential to affect such habitat.” *Id.* § 1801(b)(7). Such activities could include dredging channels, filling wetlands, building docks, or discharging pollutants. Other federal agencies are required to respond to NMFS’ or the councils’ recommendations within thirty days. *Id.* § 1855(b)(4)(B). While this consultative authority to minimize non-fishing impacts on EFH gave NMFS and the councils an important new tool, the requirement to minimize fishing impacts was the most significant change to the Magnuson-Stevens Act’s habitat requirements because fishing is directly regulated by NMFS and the councils.

under [the Act], minimize to the extent practicable adverse effects on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitat.”⁷¹ This is the action forcing standard that NMFS and the regional councils must meet in their fishery management plans. Councils must assess the adverse impacts of all fishing gear used in their regions and consider practicable alternatives for minimizing those impacts.⁷² Alternatives could include prohibiting harmful gear such as bottom trawls and dredges in sensitive locations, modifying gear to reduce impacts, closing areas to all or specific types of fishing gear, or reducing catch.⁷³ Congress, aware of the fishery managers’ history of delay, also required the councils to submit EFH amendments for FMPs to NMFS within two years.⁷⁴

The definition of “essential fish habitat” frames the scope of habitat protections under the Magnuson-Stevens Act.⁷⁵ Congress defined this term expansively as “those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.”⁷⁶ Notably, Congress also broadly defined the term “fish” to include “finfish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals and birds.”⁷⁷ In an effort to focus EFH protection, NMFS’ regulations further encourage councils to identify “habitat areas of particular concern” (HAPC), which are intended to highlight specific habitat areas that are important ecologically, sensitive to degradation, under stress by development, or rare, and therefore should receive heightened attention by fisheries regulators when considering measures to protect EFH.⁷⁸

The SFA amendments appeared to set national fisheries policy firmly on the path of achieving maximum long-term economic benefits to the nation by mandating the rebuilding and protection of fish populations and

71. *Id.* § 1853(a)(7). NMFS’ regulations further define these as impacts that are “more than minimal and not temporary in nature.” 50 C.F.R. § 600.815(a)(2)(ii) (2005).

72. 50 C.F.R. § 600.815(a)(2)(i) (2005).

73. *Id.* § 600.815(a)(2)(iv).

74. Pub. L. No. 104-297, § 108(b), 110 Stat. 3575. This section reads: “Not later than 24 months after the date of enactment of this Act, each Regional Fishery Management Council shall submit to the Secretary of Commerce amendments to each fishery management plan under its authority to comply with the amendments made in subsection (a) of [section 1853].” *Id.* Councils are required to review and update EFH descriptions and identifications at least once every five years. 50 C.F.R. § 600.815(a)(10) (2005).

75. 16 U.S.C. § 1802(10) (2000).

76. EFH is defined as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” *Id.*

77. *Id.* § 1802(12).

78. 50 C.F.R. § 600.815(a)(8)(i)-(iv) (2005).

by protecting the marine habitats upon which they depend. Earlier ambiguities in the law between the values to be placed on economic activity and protecting fish populations were resolved in favor of conservation. Although efforts to end overfishing and rebuild groundfish stocks under the FCMA came too late to prevent New England's fabled groundfish populations from hitting historic low levels in the mid-1990s,⁷⁹ the SFA required the NEFMC and fishery management councils around the country to develop new FMPs that complied with the new and improved Magnuson-Stevens Act. NMFS published guidelines for the new national standards on May 1, 1998,⁸⁰ and the SFA required councils to come into compliance with the new provisions within two years of enactment on October 11, 1998.⁸¹

Despite this promise, within three years conservation organizations in New England and elsewhere had to return to court to attempt to force compliance with the new provisions of the Magnuson-Stevens Act.⁸² It was quickly evident that not even an unequivocal congressional mandate was sufficient to budge the intransigent vested interests embedded in the federal fishery process and produce the sustainable, healthy fish populations and fisheries that would result if our once productive ocean resources were managed well.⁸³

In New England, following passage of the SFA, the NEFMC and NMFS continued to mismanage the groundfish fishery and failed to implement the Act's new requirements, problems that continue today. Conservationists took NMFS back to federal court and won a 2001 decision that resulted in a strong court order directing NMFS to end overfishing and rebuild codfish and other depleted groundfish populations.⁸⁴ However, the resulting rebuilding plan implemented in 2004, Amendment 13, allowed overfishing to continue for a number of years on five of the most overfished populations of groundfish, including the severely depleted Georges Bank cod stock; Amendment 13 survived judicial challenge by conservationists.⁸⁵

79. See Shelley et al., *supra* note 25, at 225, 230–31.

80. Magnuson-Stevens Act Provisions, *supra* note 58.

81. Sustainable Fisheries Act § 108(b), 110 Stat. at 3575.

82. See Conservation Law Found. v. Evans, 209 F. Supp. 2d 1 (D.D.C. 2001); Am. Oceans Campaign v. Daley, 183 F. Supp. 2d 1 (D.D.C. 2000).

83. For a detailed discussion of the New England fishery manager's struggles to come into compliance with the Magnuson-Stevens Act's overfishing and rebuilding provisions, see Fleming et al., *supra* note 25.

84. See Conservation Law Found. v. Evans, 209 F. Supp. 2d at 11; Conservation Law Found. v. Evans, 211 F. Supp. 2d 55, 56 (D.D.C. 2002).

85. See *Oceana v. Evans*, 2005 WL 555416 at 13.

The persistent mismanagement of the New England groundfish fishery has left the cod teetering on the brink of ecological collapse.⁸⁶ According to the most recent scientific data published in 2005, scientists estimate that the amount of Georges Bank cod has fallen to only ten percent of the minimum amount needed to sustain sustainable and healthy population levels.⁸⁷ The population of Gulf of Maine cod stands at only twenty-three percent of a healthy and sustainable level and it is no longer found in nearly half its historic coastal spawning grounds of fifty to seventy years ago, due to the possible extirpation of many small local populations.⁸⁸ The main factor in these declines is the years of rampant overfishing left unchecked by New England's fisheries managers.⁸⁹ The fact that New England has failed to enact any meaningful habitat protections is more difficult to quantify but is without doubt a significant contributing factor to the depletion of groundfish populations.⁹⁰

Some scientists today question whether cod populations and the fisheries they support can ever be brought back. Since the 1850s, the Scotian Shelf cod population located in eastern Canada has plummeted ninety-six percent, leading one recent scientific review to the interesting conclusion that the current population is small enough to fit within the hulls

86. According to the 18th Report of the Northeast Regional Stock Assessment Workshop, there are three characteristics of a collapse: (1) chronic low recruitment due to reduced spawning biomass, (2) truncated age structure, and (3) prolonged periods of yields less than about twenty-five percent of the maximum sustainable yield (MSY) value. See NATIONAL MARINE FISHERIES SERVICE, *supra* note 34, at 53. Others have defined collapse as a greater than ninety percent decline in baseline abundance. See Boris Worm et al., *Impacts of Biodiversity Loss on Ocean Ecosystem Services*, 314 SCIENCE 787, 788 (2006).

87. See 2005 GARM, *supra* note 3, at 2-4. For purposes of this article, the author's reference to "healthy and sustainable" refers to the biomass that would produce maximum sustainable yield, the legal standard established in the Magnuson-Stevens Act as the floor for defining optimum yield. See *supra* notes 56-59 and accompanying text. Others would consider this level to be depleted. See Worm et al., *supra* note 86, at 788 (defining a lower biomass level as depleted).

88. Carl Safina et al., *U.S. Ocean Fish Recovery: Staying the Course*, 309 SCIENCE 707, 708 (July 29, 2005) (quoting E.P. Ames, 29 FISHERIES 10 (2004)). Scientists have also suggested that fish populations have been so impacted that the average cod fish of today is just one fifth of the size recorded in Indian middens and the logbooks of European fishers. Jeremy Jackson, *Colloquium: What Was Natural in the Coastal Oceans?*, 98 PNAS 5411, 5414 (2001), available at <http://www.pnas.org/cgi/content/full/98/10/5411>.

89. See 2005 GARM, *supra* note 3, at 2-4, -19, -156, -171 (showing that the mortality rate has exceeded the overfishing threshold ($F_{msy} = 0.225$) by at least three times in every year for which the data has been presented).

90. See Worm et al., *supra* note 86, at 787.

of sixteen small, pre-Civil War style schooners.⁹¹ Another recent scientific study suggests that the commercial depletion of these cod stocks off the coast of Nova Scotia may have irreversibly altered the ecosystem of the Scotian Shelf to the point where the cod's recovery is impossible.⁹² These scientists argue that the decimation of the cod and other large groundfish species has led to "cascade effects": declines in top-predator abundance which in turn allow populations that would otherwise serve as prey for groundfish, such as herring, shrimp, crab, and lobster, to grow rapidly and dominate the food web.⁹³

The continued absence of cod on the Scotian Shelf demonstrates the potential lasting impacts when ecosystems are restructured this way. Although Canada placed a moratorium on cod fishing in most of its Eastern fisheries in 1992, the cod has yet to recover and an estimated 40,000 jobs have been lost.⁹⁴ This shows the importance of biological and functional diversity as a stabilizing force in ecosystems, as well as the need to manage our fisheries responsibly to avoid catastrophe.⁹⁵ The consequences of New England's failure to successfully deal with its depleted cod and other groundfish populations are not only biological, as a full collapse would trigger severe economic harm to many coastal communities. Fishing today produces over a billion dollars in revenues for coastal communities in New England.⁹⁶ Even in the groundfish fishery's current depleted condition, groundfish revenues total approximately \$80-100 million annually, before considering additional economic impacts from fishing-related businesses such as fish processing, fuel, supplies, and repairs.⁹⁷ In Massachusetts in 2003, cod alone produced revenues of \$27.5 million.⁹⁸

91. Press Release, Census of Marine Life, First Ever Estimate of Cod Fishery in 1850's Reveals 96% Decline on Scotian Shelf (Mar. 1, 2005), available at http://www.coml.org/medres/coml_release_hmap_public.pdf.

92. Kenneth T. Frank et al., *Trophic Cascades in a Formerly Cod-Dominated Ecosystem*, 308 SCIENCE 1621 (June 10, 2005); see also Tom Bell, *Decline in Codfish Stocks may not be Reversible*, PORTLAND PRESS HERALD, June 27, 2005, at A1.

93. Frank, *supra* note 92, at 1621-22.

94. D. H. Steele et al., *The Managed Commercial Annihilation of Northern Cod*, 8 NEWFOUNDLAND STUDIES 34, 35 (1992).

95. See Frank, *supra* note 92, at 1622; see also Worm et al., *supra* note 86, at 788, 790.

96. Press Release, National Oceanic & Atmospheric Administration, NMFS Northeast Regional Office News: Commercial Fisheries Revenues for Northeast Coastal States Total \$1.032 Billion in 2003 (Oct. 21, 2004), available at http://www.nefsc.noaa.gov/press_release/2004/news04.15.htm.

97. THE FLEET VISIONING PROJECT, THE NORTHEAST GROUND FISHERY: AN INTRODUCTION (2005), available at <http://www.fleetvision.org/resources-groundfishery101.php> (noting these are constant 1999 dollars).

98. See Press Release, *supra* note 96.

These revenues, however, fall well short of what New England's legendary cod fishery would have produced today, and successful efforts to rebuild cod and other groundfish stocks could revive the economy of New England's fisheries and fishing communities. Over the years, overfishing has cost New England hundreds of millions of dollars: in 1992 prior to the collapse of some of New England's most important groundfish stocks, overfishing was estimated to have cost Massachusetts at least \$193 million annually and all of New England \$350 million and 14,000 jobs.⁹⁹ Meanwhile, a recent independent economic analysis concluded that successfully rebuilding groundfish fisheries in New England would result in a catch value at approximately three times the current value.¹⁰⁰ This is consistent with the NEFMC's own estimates that if groundfish stocks are rebuilt, groundfish revenues will nearly triple within the next twenty years.¹⁰¹

Through its SFA habitat amendments, Congress addressed a fundamental biological principle in U.S. fisheries law that had not been adequately recognized: fish, like all living creatures, need adequate habitat to survive and reproduce.¹⁰² Seafloor habitats support much of the oceans' productivity as ninety-eight percent of all known animal species live in or on the sea floor, including about seventy-five percent of all commercially landed fish species.¹⁰³ Despite the SFA's new habitat provisions and an increasing body of scientific studies demonstrating that fishing gears such as bottom trawls and scallop dredges can destroy fish habitat,¹⁰⁴ the nation's

99. 142 CONG. REC. S10812 (Sept. 18, 1996).

100. USSIF RASHID SUMAILA, FISH ECONOMICS: THE BENEFITS OF REBUILDING U.S. OCEAN FISH POPULATIONS 10-13 (Oct. 2005), *available at* <http://www.e2.org/ext/doc/2005%20Fish%20Economics.pdf>.

101. *See* FINAL AMENDMENT 13, *supra* note 1, at I-568 to I-569. The Environmental Impact Statement reports that under the proposed rebuilding program, landings of large mesh species like the GB cod would increase by about fifteen million pounds annually between 2004 and 2008. Landings would continue to increase through the end of the rebuilding period in 2026, reaching about 320 million pounds. *Id.*

102. *See* LOUGH, *supra* note 6 and accompanying text.

103. LANCE E. MORGAN & RATANA CHUENPAGDEE, SHIFTING GEARS: ADDRESSING THE COLLATERAL IMPACTS OF FISHING METHODS IN U.S. WATERS 8 (2003), *available at* http://www.pewtrusts.com/pdf/environment_pew_science_series_shift.pdf.

104. *See* Auster & Langton 1999, *supra* note 7, at 153-56; *see also supra* note 7 and accompanying text. The habitat damage includes harm to living seafloor structures (e.g. corals, sponges, seagrasses) as well as alterations to the geologic structures (e.g. boulders, cobbles, gravel, sand, mud) that serve as nursery areas, refuges, and homes for fish and organisms living in, on, or near the seafloor. *See* Chuenpagdee et al., *supra* note 5, at 517. Other fishing gear, like gillnets, traps, and bottom longlines, can snag on seafloor structures such as rocks, plants, and corals and cause damage. *See* Auster & Langton 1999, *supra* note 7, at 157. In most cases, areas with corals and hard bottoms with seafloor structures are the most sensitive to damaging gear. *See id.* at 154-55.

fishery management councils have made relatively little progress in protecting essential fish habitat from the destructive impacts of fishing.

V. A NATIONAL HISTORY OF INADEQUATE HABITAT PROTECTION

Ten years after the passage of the Sustainable Fisheries Act in 1996, protections for essential fish habitat from harmful fishing practices are, in a word, “inadequate.” While council actions to protect EFH in recent years are an improvement over past inaction, they still fall short of what is required to protect our nation’s fish.

In response to the Magnuson-Stevens Act’s new habitat requirements, fishery management councils matched the expansive definition of EFH by identifying EFH within their regions broadly, however, councils took few actions to protect it.¹⁰⁵ Instead, councils deferred undertaking a detailed fishing gear-effects analysis and any meaningful management and conservation measures to reduce the habitat impacts from fishing until some undetermined second step to be taken after the 1998 statutory deadline.¹⁰⁶ The councils claimed that there was no scientific evidence of negative impacts to habitat from fishing gear.¹⁰⁷ As a result, they did not undertake full environmental impact statements under the National Environmental Policy Act (NEPA), and instead issued environmental assessments that concluded that reliance on existing management measures to protect essential fish habitat was adequate.¹⁰⁸ There was no practicability analysis and alternatives for taking new actions to protect the sea floor from fishing gear impacts were not considered.¹⁰⁹

By 1999, only two of the existing thirty-eight FMPs nationwide included any new actions designed to avoid or minimize the adverse effects of fishing on EFH, and the actions that were taken affected only small areas.¹¹⁰ While these plans were written by fishery management councils, NMFS was complicit in this failure through its approval of the legally

105. *Am. Oceans Campaign v. Daley*, 183 F. Supp. 2d at 5-9. The court stated that “none [of the councils] adopted measures that would restrict fishing gear . . . to minimize adverse effects of fishing related activities on EFH.” *Id.* at 5.

106. *Id.* at 8-9.

107. *Id.* at 20.

108. *Id.* at 6-7, 13, 15-17.

109. *Id.* at 20-21.

110. MARINE FISH CONSERVATION NETWORK, LOST AT SEA – A REVIEW OF NATIONAL MARINE FISHERIES SERVICE IMPLEMENTATION OF THE SUSTAINABLE FISHERIES ACT 21 (1999).

deficient fishery management plan amendments that were supposed to implement the new essential fish habitat provisions.¹¹¹

In response, conservation and fishing groups from around the country brought suit in federal district court in 1999, challenging the work of the councils and NMFS.¹¹² In *American Oceans Campaign v. Daley*, the plaintiffs claimed that five of the eight regional fishery management councils refused to regulate damaging fishing practices in violation of the SFA amendments and violated NEPA by failing to undertake the appropriate environmental analysis.¹¹³

The following year, in a decision with contradictory conclusions that are difficult to fully comprehend, the court ruled against the groups on their substantive Magnuson-Stevens Act claims.¹¹⁴ The court stated that “[p]laintiffs [were] correct that the [Magnuson-Stevens Act] prohibits the two-step approach that [some of the councils] adopted.”¹¹⁵ Yet, in spite of this holding regarding the meaning of the law, the court upheld the Agency’s actions by deferring to the Agency’s protestations that it had “limited scientific information” and already had protective measures in place.¹¹⁶

The court then went on to side with the plaintiffs on their NEPA claims, holding that NMFS had violated the Act in approving five different councils’ essential fish habitat amendments, because the environmental assessments included “no substantive discussion of how fishing practices and gear may damage corals, disrupt fish habitat, and destroy benthic life that helps support healthy fish populations.”¹¹⁷ The court also found that the environmental assessments “fail[ed] to consider all relevant and feasible alternatives and fail[ed] to fully explain the environmental impact of the proposed action and alternatives.”¹¹⁸

111. *Id.* NMFS disapproved only a few of the inadequate amendments, notably the amendment from the Mid-Atlantic Fishery Management Council. *Id.*

112. *See Am. Oceans Campaign v. Daley*, 183 F. Supp. 2d at 9. The plaintiffs’ NEPA claim was that the NMFS violated the Act by performing limited, inadequate Environmental Assessments for each of the Amendments, rather than full Environmental Impact Statements (EIS). *Id.* *See also* National Environmental Policy Act of 1969 § 102, 42 U.S.C. § 4332(C)(i-v) (2000) (requiring EIS for “major Federal actions significantly affecting the quality of the human environment.”).

113. *Am. Oceans Campaign v. Daley*, 183 F. Supp. 2d at 9. The five councils were New England, Gulf of Mexico, Caribbean, Pacific, and North Pacific.

114. *Id.* at 15, 21.

115. *Id.* at 15 n.5.

116. *Id.* at 15-16.

117. *Id.* at 20.

118. *Id.*

The *American Oceans Campaign v. Daley* decision is perplexing given that the same set of egregious facts led the court to ultimately rule against the plaintiffs on the substantive Magnuson-Stevens Act claims and for the plaintiffs on the more procedural NEPA claims. This split decision, however, also made the parties' decisions regarding appeal difficult.¹¹⁹ Faced with undertaking comprehensive EFH environmental impact statements on all fisheries nationwide, NMFS and the plaintiffs reached a settlement agreement that established a compliance schedule for completing this formidable task, and in so doing NMFS committed to thoroughly evaluate the adverse effects of fishing on essential fish habitat and to regulate damaging fishing practices as appropriate by the end of 2004.¹²⁰

While the conservation plaintiffs in the *American Oceans Campaign v. Daley* case lost on their substantive Magnuson-Stevens Act claims, without NEPA's requirements for full analysis it is unlikely that the NMFS or the councils would have undertaken any measurable new efforts to protect essential fish habitat. Now, ten years after passage of the SFA, the environmental impacts statements are, at least arguably, complete. "All councils have described and identified EFH for their managed fisheries in a precautionary fashion and have, or are in the process of, designating HAPCs."¹²¹

Where councils continue to fail is in taking meaningful action to avoid or minimize the adverse impacts of fishing on EFH. Most councils have proposed and adopted new measures for protecting EFH, however, the measures offer only limited protection. While these actions represent

119. See FED. R. CIV. P. 54(b) (stating that in the absence of an "express determination" of a final judgment as to one or more of the claims an "order or other form of decision . . . which adjudicates fewer than all of the claims . . . shall not terminate the action as to any of the claims or parties . . ."). The United States Courts of Appeals "have jurisdiction of appeals from . . . final decisions of the district courts of the United States . . ." 28 U.S.C. § 1291 (2000).

120. See Joint Stipulation & Order at Attach. 1, *Am. Oceans Campaign v. Evans* 183 F. Supp. 2d 1 (D.D.C. 2001) (No. 99-982 GK) (Dec. 17, 2001) (setting forth the schedule for EFH environmental impact statements). Later stipulations extended the timeline into 2005 for Atlantic herring and monkfish, and 2006 for Pacific groundfish. See Joint Stipulation & Order as to Amend December 17, 2001 Joint Stipulation & Order As To Certain Fisheries of the New England Fishery Management Region at 3-4, *Am. Oceans Campaign v. Evans* 183 F. Supp. 2d 1 (D.D.C. 2001) (No. 1:99CV00982 GK) (Dec. 23, 2003); and Defendants' Unopposed Motion to Modify Amended Joint Stipulation & Order at 1, *Am. Oceans Campaign v. Evans* 183 F. Supp. 2d 1 (D.D.C. 2001) (No. 1:99CV00982 GK) (Mar. 1, 2005); and Defendants' Unopposed Motion to Modify Amended Joint Stipulation & Order at 1, *Am. Oceans Campaign v. Evans* 183 F. Supp. 2d 1 (D.D.C. 2001) (No. 1:99CV00982 GK) (Feb. 22, 2006).

121. See MARINE FISH CONSERVATION NETWORK, *supra* note 10, at 6.

progress when compared with past inaction, many councils “continue to use several tactics to avoid enacting adequate EFH protections,”¹²² leaving enormous gaps in protection that allow destructive fishing activities to continue degrading important habitat throughout the nation.¹²³

The tactics used by the councils include “hiding behind scientific uncertainty,”¹²⁴ “maintaining that existing management measures are adequate,”¹²⁵ prohibiting gear only where it is not a threat,¹²⁶ and “providing some protection for the most vulnerable habitat types but ignoring other important areas.”¹²⁷ Fishery managers often avoid taking action by requiring site specific or quantifiable information on the environmental impacts of fishing practices and proposed solutions before taking action. In some cases, they attack the scientific methods used to develop the scientific information and scientific advice from their own scientific advisors.¹²⁸ This tactic flies in the face of scientific recommendations to take a precautionary approach to management and delays necessary habitat protections.¹²⁹

It is also common for managers to maintain that existing management measures are sufficient to protect EFH, as was seen in the *American Oceans Campaign v. Daley* case. While some measures adopted to minimize over-

122. *Id.* at 1.

123. *Id.* at 2, 5-6.

124. *Id.* at 1.

125. *Id.*

126. *Id.* at 2.

127. MARINE FISH CONSERVATION NETWORK, *supra* note 10, at 2.

128. *See infra* notes 164 to 182 and accompanying text.

129. *See, e.g.*, PEW OCEANS COMM’N, *supra* note 8, at 10, 90; *see also* U.S. COMM’N ON OCEAN POLICY, AN OCEAN BLUEPRINT FOR THE 21ST CENTURY 65-66, 80 (2004), *available at* http://www.oceancommission.gov/documents/full_color_rpt/000_ocean_full_report.pdf. Under the precautionary approach, “[w]here there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing action to prevent environmental degradation.” The U.N. Conference on Environment and Development, June 3-14, 1992, *Rio Declaration on Environment and Development*, Principle 15, *available at* <http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=78&ArticleID=1163>; *See also*, Gary E. Marchant, *From General Policy to Legal Rule: Aspirations and Limitations of the Precautionary Principle*, 111 ETHICS AND ENVIRONMENTAL HEALTH 1799 (2003), *available at* <http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1241727&blobtype=pdf>:

[T]he precautionary principle in just the past decade has been included in over a dozen international environmental agreements, expressly incorporated into the legal framework of the European Union, and adopted into the domestic laws of numerous nations. By any measure, this is an impressive record of success, and one that demonstrates that the precautionary principle is fulfilling a previously unmet need in environmental policy.

Id.

fishing, such as reducing fishing effort, can help protect habitat as well, some councils have relied on these measures as a reason to neglect other critical tools for protecting habitat such as closed areas and gear modifications specifically designed for habitat protection. Fishing effort reductions, for example, often succeed in only limiting the frequency with which destructive gear passes through sensitive habitat, and it has been demonstrated that habitat can take years to recover from a single pass of a scallop dredge or otter trawl.¹³⁰ Councils also often prohibit gear where it is not a threat to existing fishing effort. While it is commendable when councils take precautionary efforts to limit the footprint of damaging fishing gear in sensitive habitats, these types of measures do little to protect EFH currently impacted by fishing gear. More recently, councils have started to protect some of the most vulnerable habitat types to meet their EFH obligations, but then ignore other important habitats.¹³¹

VI. NEW ENGLAND'S HISTORY OF HABITAT PROTECTION UNDER THE MAGNUSON-STEVENSON ACT

Faced with the collapse of economically vital cod and other groundfish in the late 1980s and early 1990s, the New England Fishery Management Council addressed the collapse with area closures and other measures designed to reduce fishing mortality—but did not couple these efforts with measures to protect fish habitat.

After passage of the SFA, New England, like other councils around the country, designated an EFH in 1998.¹³² At this time, the NEFMC identified a small area on the northeastern corner of Georges Bank known to contain

130. These sensitive areas are home to emergent epifauna, which provide essential habitat for juvenile groundfish, especially Atlantic cod. *See* Collie et al., 2000a, *supra* note 7, at 989. The recovery rate depends on both the type of habitat and the species present, and can range from several months to fifteen years. *See* Collie et al., 2000b, *supra* note 7, at 795.

131. Recent protections for essential fish habitat reflect growing scientific recognition of the importance of coral reefs, deepwater corals, and hard bottom surfaces; however other habitat types, such as gravel bottoms and mud, are sensitive as well and offer important habitats to a variety of managed species, but receive little or no protection. The South Atlantic Council is the primary exception to these trends. That fishery management council has adopted EFH protections in all of its managed fisheries, demonstrating that the SFA's EFH provisions have the potential to work. *See* MARINE FISH CONSERVATION NETWORK, *supra* note 10, at 2.

132. NEW ENGLAND FISHERY MANAGEMENT COUNCIL, FINAL AMENDMENT 11 TO THE NORTHEAST MULTISPECIES FISHERY MANAGEMENT PLAN FOR ESSENTIAL FISH HABITAT INCORPORATING THE ENVIRONMENTAL ASSESSMENT (Oct. 7, 1998), *available at* <http://www.nefmc.org/nemulti/index.html> (follow "Plan Amendment" hyperlink; then follow "11" hyperlink) [hereinafter FINAL AMENDMENT 11].

habitat suitable for juvenile cod as an HAPC.¹³³ This area was already closed to fishing as part of the earlier efforts to reduce fishing mortality on groundfish; thus, this action provided no additional habitat protection.¹³⁴ The Council also identified an Atlantic salmon HAPC located in eleven of eastern Maine's rivers containing the last remaining U.S. populations of Atlantic salmon, which were under consideration for listing as an endangered species.¹³⁵ This designation was also easy for the Council to make as no federally managed commercial fishing occurs in these rivers.¹³⁶ The Council went on to conclude that no new actions to protect EFH were necessary because measures already in place to control fishing mortality and future actions in emerging fisheries would also minimize impacts to EFH.¹³⁷ The measures already in place or under consideration were not designed to protect EFH, however, and many have been subsequently modified, eliminated, or never took effect.

As a result of *American Oceans Campaign v. Daley*, New England fisheries managers were provided with a 2004 deadline to meet the SFA's EFH requirements.¹³⁸ In response, the NEFMC identified Amendment 13, the same amendment designated in response to another court order to establish New England's first comprehensive rebuilding plan for overfished groundfish populations, as the lead vehicle of the Council's efforts to finally comply with the SFA's EFH provisions.¹³⁹ Unfortunately, the habitat

133. *Id.* at 40-42.

134. *Id.* at xiv.

135. *Id.* at 41, 43.

136. Only state-managed commercial fisheries, notably Maine's lobster fishery, have the potential to occur in some of these areas.

137. See FINAL AMENDMENT 11, *supra* note 132, at xiv, 235; see also *Am. Oceans Campaign v. Daley*, 183 F. Supp. 2d at 7 (noting that the Amendment's conclusion stated that existing and recently proposed measures met the standards of the SFA).

138. See *supra* note 120 and accompanying text.

139. See FINAL AMENDMENT 13, *supra* note 1, at I-v. The Council at this time also sought to meet the terms of the *American Oceans Campaign v. Daley* settlement in other management plan amendments under development including in the Atlantic sea scallop and Atlantic monkfish fisheries. See NEW ENGLAND FISHERY MANAGEMENT COUNCIL, FINAL AMENDMENT 10 TO THE ATLANTIC SEA SCALLOP FISHERY MANAGEMENT PLAN WITH A FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT, REGULATORY IMPACT REVIEW, AND REGULATORY FLEXIBILITY ANALYSIS (Dec. 2003), available at <http://www.nefmc.org/scallops/index.html> (follow "Other Information" hyperlink; then follow "Final Amendment 10" hyperlink) [hereinafter FINAL AMENDMENT 10]; NEW ENGLAND FISHERY MANAGEMENT COUNCIL, MID-ATLANTIC FISHERY MANAGEMENT COUNCIL & NATIONAL MARINE FISHERIES SERVICE, AMENDMENT 2 TO THE MONKFISH FISHERY MANAGEMENT PLAN INCLUDING A FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT, REGULATORY IMPACT REVIEW, AND STOCK ASSESSMENT AND FISHERY EVALUATION REPORT FOR THE 2002 FISHING YEAR (Dec. 2004), available at

measures eventually contained in Amendment 13 turned out to be weak.

As part of Amendment 13, the NEFMC did undertake a detailed gear-effects evaluation and practicability analysis. The Council, however, ultimately continued its pattern of relying on the same measures implemented to reduce fishing effort as the measures it relied upon to satisfy the EFH requirement to minimize habitat impacts to the extent practicable.¹⁴⁰ The NEFMC's logic was that anything that reduces the amount of fishing reduces the frequency of bottom disturbance associated with gear and, therefore, constitutes habitat protection.¹⁴¹ This contradicts scientists' findings, however, that reducing fishing effort alone is not sufficient and should be used in combination with other measures such as modifying gear that damages seafloor habitat or closing an adequate number of areas to damaging fishing practices.¹⁴²

Over the years, the NEFMC had reopened portions of the mortality closures to harmful scallop dredges despite acknowledging that "[y]ear-round closed areas that are fished periodically or seasonally by bottom tending mobile gear . . . offer significantly less protection for habitat than those that are not fished by mobile bottom gear."¹⁴³ In Amendment 13, the NEFMC re-drew some of the boundaries of the existing mortality closures, ostensibly to better protect critical habitats, and designated specific portions of these updated closed areas as indefinite "habitat closures."¹⁴⁴ While these

<http://www.nefmc.org/monk/index.html> (follow "Plan Amendments" hyperlink; then follow "2" hyperlink) [hereinafter AMENDMENT 2]. To the extent habitat measures taken in these plan amendments were inconsistent with Amendment 13, they were later reconciled so they were consistent with the Amendment 13 measures. See NEW ENGLAND FISHERY MANAGEMENT COUNCIL, FRAMEWORK ADJUSTMENT 16 TO THE ATLANTIC SEA SCALLOP FMP AND FRAMEWORK ADJUSTMENT 39 TO THE NORTHEAST MULTISPECIES FMP WITH AN ENVIRONMENTAL ASSESSMENT, REGULATORY IMPACT REVIEW, AND REGULATORY FLEXIBILITY ANALYSIS I-1 (July 2004), available at <http://www.nefmc.org/scallops/index.html> (follow "Other Information" hyperlink; then follow "Framework 16 to the Scallop Fishery Management Plan" hyperlink) [hereinafter FRAMEWORK ADJUSTMENT 16].

140. FINAL AMENDMENT 13, *supra* note 1, at I-92 to I-93.

141. See *id.* at I-xi, I-491.

142. NORTHEAST REGION ESSENTIAL FISH HABITAT STEERING COMMITTEE, WORKSHOP ON THE EFFECTS OF FISHING GEAR ON MARINE HABITATS OFF THE NORTHEASTERN UNITED STATES 44-45 (Feb. 2002), available at <http://www.nefsc.noaa.gov/nefsc/publications/crd/crd0201/crd02-01.pdf>.

143. See FINAL AMENDMENT 13, *supra* note 1, at I-461. The Council provided for temporary closures of some additional areas to scallop dredges as part of a rotational management system designed to promote scallop growth. However, many of these areas remained open to bottom trawling, and the Council ultimately scaled back the areas indefinitely closed to scallop dredges to mimic existing groundfish closed areas. FRAMEWORK ADJUSTMENT 16, *supra* note 139, at 4-3 to 4-4.

144. See FINAL AMENDMENT 13, *supra* note 1, at I-x, I-93 to I-95.

represent the first specified habitat closures in New England fishery management history, because they are smaller than the previously closed areas, it is difficult to argue there was a significant net benefit to habitat.

Moreover, in establishing the habitat closures, the Council relied almost exclusively on the boundaries of the previously established mortality closures, not habitat science, with only small adjustments to account for important habitat.¹⁴⁵ While a step in the right direction, even with the inclusion of the previously identified juvenile cod HAPC in the habitat closures, about eighty-five percent of the critically important juvenile cod EFH is left unprotected outside the closed areas in vulnerable gravel and hard bottom habitat open year-round to trawling and dredging.¹⁴⁶ Combined, these habitat closures protect only about six percent of the EFH for federally managed species in the Council's jurisdiction that is moderately or highly vulnerable to the effects of bottom gear.¹⁴⁷

To its credit, the NEFMC took some proactive steps to protect habitat in its most recent amendment to its monkfish fishery management plan.¹⁴⁸ Responding to calls to conserve important deep-sea coral communities, the NEFMC took the lead in closing two deepwater canyons known as Oceanographer and Lydonia canyons, located on the southern edge of Georges Bank in southern New England, to bottom trawls and bottom gillnets used by monkfish fishermen.¹⁴⁹ Using authority provided by the Magnuson-Stevens Act to manage species throughout their range, the Council also placed size restrictions on some types of trawl gear used in all Mid-Atlantic canyons and several other areas of the continental shelf in order to prevent monkfish vessels from damaging other vulnerable habitat.¹⁵⁰ Similar to many previous NEFMC habitat actions, the two canyons that were closed were not yet being fished for any species, making the NEFMC's decision easier. Nonetheless, the closure should be viewed as a precautionary step to protect the canyons against potential expansion of the fishery.

In the end, when the NEFMC had the opportunity through its groundfish rebuilding plan and subsequent actions in other fisheries to take a significant step forward in protecting the habitat essential to the survival of

145. *See id.* at I-93 to I-97.

146. *See id.* at I-93, I-502 (showing the selection of habitat alternative 10 option (b) and that the total juvenile cod EFH protected is 15.3 percent).

147. *See id.* at I-93, I-503 (showing that the sum of the vulnerable EFH protected for all species protected by this alternative is 5.9 percent).

148. The New England Council manages this species in conjunction with the Mid-Atlantic Council, but it has lead responsibility in these efforts.

149. *See* AMENDMENT 2, *supra* note 139, at 41.

150. *Id.* at 38-39.

juvenile groundfish, it deferred taking a more rigorous look at EFH protection until Amendment 14 to the Northeast Multispecies FMP is completed. Amendment 14, which is part of an "EFH Omnibus Amendment," is intended to address habitat in all New England fisheries simultaneously.¹⁵¹ Unfortunately, this amendment is not scheduled for completion until 2008.¹⁵² Meanwhile, New England's legendary cod populations remain on the brink of collapse and are showing few signs of improvement.¹⁵³ The precautionary, proactive approach to habitat protection taken in the monkfish management plan, though tactically a relatively easy decision to make due to the lack of fishing in the area, is a positive step for the New England Council. This proactive spirit for habitat protection needs to be fully embraced in the years ahead and applied under more difficult and controversial circumstances as we seek to restore and sustain New England's depleted fisheries.

VII. IS NEW ENGLAND READY TO TAKE MEANINGFUL HABITAT PROTECTIONS?

After several years of failure to enact meaningful habitat protections in New England, as part of the EFH Omnibus Habitat Amendment the NEFMC is exploring a broader range of options for habitat protection as part of the Magnuson-Stevens Act's five year EFH review.¹⁵⁴ The amendment is designed to reexamine New England's EFH and HAPC designations and the Council will consider additional measures for minimizing the impacts of fishing on EFH.¹⁵⁵

151. See FINAL AMENDMENT 13, *supra* note 1, at I-13 to I-14. This "omnibus" amendment process emerged in part from the terms of the consent decree negotiated between NOAA Fisheries and the conservation plaintiffs in *American Oceans Campaign v. Daley*.

152. See LESLIE-ANN MCGEE, PROJECT MANAGER, NEFMC, EFH OMNIBUS AMENDMENT #2 TIMELINE (Nov. 1, 2006), available at <http://www.nefmc.org/habitat/index.html> (follow "Habitat and MPAs" hyperlink; then follow "November 14-16, 2006 Council Meeting Materials" hyperlink; then follow "Omnibus Amendment Timeline" hyperlink).

153. See *supra* notes 91-96 and accompanying text.

154. Although the EFH Omnibus Amendment was initiated prior to the filing of certain challenges to the habitat provisions contained in the most recent amendments to the groundfish and scallop and groundfish fishery management plans, the Council's response was no doubt colored in part by the pressure applied as a result of those challenges by one of the parties to the *American Oceans Campaign v. Daley* litigation. See generally *Oceana v. Evans*, 2005 WL 555416 (D.D.C. 2005); *Oceana v. Evans*, 384 F. Supp. 2d 203 (D.D.C. 2005).

155. See NEW ENGLAND FISHERY MANAGEMENT COUNCIL, ESSENTIAL FISH HABITAT OMNIBUS AMENDMENT APPROVED GOALS AND OBJECTIVES (July 2004) (on file with author).

A. New England's Search for HAPCs

The conservation community vigorously seized upon the first opportunity for substantive public participation in the EFH Omnibus Habitat Amendment, a request for proposed new HAPCs. Recognizing criticism that the original broad EFH designations did little to focus attention on the most important or vulnerable habitat, and that subsequent efforts by fisheries regulators at habitat protection in New England had largely failed, the opportunity to participate in a structured public process designed to identify HAPCs provided hope that the NEFMC would take action to protect important habitat. Designation of HAPCs is intended to identify those areas within EFH that should receive heightened attention by fisheries regulators when establishing higher standards and levels of habitat protection. The HAPC regulations provide that HAPCs meet at least one of four criteria in order to be designated an HAPC, namely: “(i) the importance of the ecological function provided by the habitat; (ii) the extent to which the habitat is sensitive to human-induced environmental degradation; (iii) whether, and to what extent, development activities are, or will be, stressing the habitat type; and (iv) the rarity of the habitat type.”¹⁵⁶

In December 2004, the NEFMC invited the public to submit candidate HAPC proposals for each of its fishery management plans.¹⁵⁷ In doing so, the Council identified a set of preferences for submissions and encouraged completed HAPC proposals in order to increase its ability to respond in a rapid and equitable fashion. The identified preferences were for proposals that: would improve fisheries management in the EEZ; include EFH designations for more than one council-managed species in order to maximize the benefit of the designations; include juvenile cod EFH; and meet more than one of the EFH HAPC criteria.¹⁵⁸ Sadly, and yet without doubt reflecting the longstanding resistance to conservation by New England fishermen, in response to the request for proposals not a single proposal came from a fishermen or fishing organization, while eight proposals were received from environmental organizations and one was received from two leading habitat scientists.¹⁵⁹

156. 50 C.F.R. § 600.815(a)(8) (2005).

157. See Press Release, New England Fishery Management Council, NEFMC Requests for Candidate Proposals for HAPCs (Dec. 20, 2004), *available at* http://www.nefmc.org/press/press_releases_hapcs_press_release.pdf.

158. *Id.*

159. See NEW ENGLAND FISHERY MANAGEMENT COUNCIL, JOINT HABITAT PDT AND ADVISORY PANEL, MEETING SUMMARY (Apr. 13, 2005), *available at* http://www.nefmc.org/habitat/meetsum/habitat_adv_050413.pdf. The proposals received were identified as

B. Proposing a Multi-species Approach to Habitat Protection

The Conservation Law Foundation (CLF) and World Wildlife Fund-Canada (together CLF), proposed a comprehensive and innovative new strategy for habitat protection in furtherance of the groups' efforts to restore depleted cod and other groundfish populations in the Northwest Atlantic Ocean.¹⁶⁰ The "Multi-species HAPC" proposal met the stated preferences and was designed to recognize as HAPCs, areas of the ocean identified as necessary for the survival of juvenile fish for eight overfished species of groundfish, including cod.¹⁶¹ In introducing their proposal, CLF argued that the appropriate stewardship of areas used by these species is expected to be important to the long-term productivity of their populations and the fisheries they support.¹⁶² The analysis focuses on juvenile fish because juveniles are at high risk of predation and dependent upon the sheltering features of bottom habitats that are particularly vulnerable to degradation.¹⁶³ Additionally, juveniles are essential to rebuilding plans and sustainable fisheries, yet are not commercially valuable until grown. CLF proposed a multi-species approach because the productivity of overfished populations can be most efficiently benefited by identifying habitat areas that simultaneously support multiple species, and multi-species approaches are fundamental to ecosystem-based management.¹⁶⁴

follows: 1. The New England Seamounts HAPC, Proposers: Peter Auster, National Undersea Research Center and Department of Marine Sciences, University of Connecticut at Avery Point and Les Watling, Darling Marine Center, University of Maine; 2. Cashes Ledge HAPC, Proposer: Geoff Smith, The Ocean Conservancy; 3. Georges Bank Northern Edge HAPC, Proposer: Geoff Smith, The Ocean Conservancy; 4. Jeffreys Ledge/Stellwagen Bank HAPC, Proposer: Geoff Smith, The Ocean Conservancy; 5. Coral-Rich Deep-Sea Canyons HAPC, Proposers: Jacob Kritzer and Doug Rader, Environmental Defense; 6. A Multi-Species Approach for Juveniles of Eight Over-Fished Species HAPC, Proposers: Jud Crawford and Roger Fleming, Conservation Law Foundation; 7. Juvenile Cod HAPCs on Georges Bank, Proposer: Christopher J. Zeman, Oceana; 8. Deep-Sea Coral Habitat HAPC, Proposer: Christopher J. Zeman, Oceana; 9. New England Seamounts and Deep-Sea Corals HAPC, Proposers: Valerie Suzdak and Eric Bilsky, Oceana. The NEFMC had also previously approved consideration of an inshore Gulf of Maine cod HAPC proposal as part of the original EFH Omnibus Amendment in 1999. This proposal covers an area tightly drawn along the coast and, similar to the Eastern Georges Bank and Atlantic salmon HAPCs, includes areas not commercially fished. *Id.*

160. *See* CRAWFORD & FLEMING, *supra* note 12.

161. *Id.* at 2.

162. *Id.*

163. *Id.* at 2-3 (citing Auster & Langton, 1999; Auster et al., 1996; Collie et al., 1997; Collie et al., 2000a).

164. *See* CRAWFORD & FLEMING, *supra* note 12, at 2.

The groups proposed a network of HAPCs based on locations where large concentrations of young fish from eight struggling, overfished species, such as Atlantic cod, hake, and yellowtail flounder live.¹⁶⁵ With the aid of a powerful computer modeling tool (MARXAN), the groups generated a unique, objective, and science-based proposal for the NEFMC to consider, which sought to restore and protect areas that provide critical habitat for many species at the same time.¹⁶⁶ The proposal identified a set of areas within each of three biogeographic regions that included habitat for each of the species. The identified habitat areas were based on abundance data revealed by thirty-three years of NMFS research surveys within the Southern New England, Georges Bank, and the Gulf of Maine regions using a standard ten-minute square grid system for each of the regions.¹⁶⁷ The proposal included sets of candidate HAPCs, one set per region, which were designed to meet multi-species habitat conservation objectives. The habitat protection goals of the proposed networks were modest, with the most precautionary network alternative targeted to protect habitat for about twenty percent of the juveniles of each species in each biogeographic area, which, due to the efficiency gained by simultaneously identifying habitat that supported more than one species through the use of the MARXAN tool, resulted in approximately only nine percent of the total habitat in each area proposed as an HAPC.¹⁶⁸

With this approach, CLF sought to minimize the number of isolated habitat sites by efficiently designating HAPCs that conserve EFH important to large numbers of juvenile fish while minimizing the impacts to fishermen.¹⁶⁹ CLF recommended that, in view of the scientific evidence demonstrating the vulnerability of ocean floor juvenile fish habitats to degradation by gear such as trawls and dredges, appropriate action to maintain the integrity of the identified areas should be taken to help ensure the recovery and long-term productivity of overfished groundfish populations.¹⁷⁰

The Multi-species HAPC proposal offered a compelling opportunity for the NEFMC to take a significant step forward in restoring the health of the

165. *Id.* at 3 (citing Peter J. Auster et al., *Fish Species and Community Distributions as Proxies for Seafloor Habitat Distributions: The Stellwagen Bank National Marine Sanctuary Example (Northwest Atlantic, Gulf of Maine)* 60 ENVIRONMENTAL BIOLOGY OF FISHES 340-42 (2001); Rosamonde R. Cook & Peter J. Auster, *Use of Simulated Annealing for Identifying Essential Fish Habitat in a Multi-species Context* 19 CONSERVATION BIOLOGY 876-886 (2005)).

166. *Id.* at 3.

167. *Id.* at 1, 6.

168. See CRAWFORD & FLEMING, *supra* note 12, at 7.

169. *Id.* at 3.

170. *Id.* at 27.

region's fisheries. The approach was objective, science based, and it sought to accomplish significant levels of protection for several vulnerable fish stocks while minimizing the impacts to fishing through an efficient design.

C. New England Council: Still Hiding Behind Scientific Uncertainty

When presented with the Multi-species HAPC Network proposal, the NEFMC fell back upon one of its traditional tactics for failing to act to protect habitat—its perception of scientific uncertainty surrounding the methodology used to develop the proposal. Evaluation of the proposed HAPCs was initially conducted by the NEFMC's Habitat Plan Development Team (Habitat PDT) with the advice of their habitat advisory panel. The advisory panel consisted mostly of commercial and recreational fishermen and representatives from state fishery agencies. Those environmental groups and scientists who proposed HAPCs were invited to present and discuss their proposals at the initial HAPC evaluation meeting that included as participants the Habitat PDT and habitat advisory panel; however, there were few additional opportunities for public participation and no public hearings on the proposals.¹⁷¹

At the initial HAPC evaluation meeting, the Multi-species HAPC proposal was enthusiastically supported by several members of the Habitat PDT, including the two leading independent marine habitat scientists who were present.¹⁷² While industry advisors and some state fisheries agency representatives asked questions at this meeting, only relatively minor recommendations were made for clarifying or improving the proposal.¹⁷³

The Multi-species HAPC proposal, however, soon came under attack from industry and state fishery agency representatives who saw the proposal as a threat to the economic interests of the fishing industry. They argued that if approved, it would lead to new habitat closures that “would impact nearly all fisheries . . . [and] retard the Council's progress toward achieving Optimum Yield in the healthy stocks.”¹⁷⁴ The latter point was a rather remarkable concern given that the NEFMC's existing management

171. See NEFMC MEETING SUMMARY AUG. 2005, *infra* note 184.

172. See, e.g., Letter from Roger Fleming and John Crawford, Conservation Law Foundation, to Habitat Committee Members and Staff, New England Fishery Management Council (Aug. 21, 2005) [hereinafter Letter from Fleming and Crawford] (with enclosure containing Habitat PDT, Evaluation of Groundfish Species HAPC Proposal (undated) [hereinafter Habitat PDT Evaluation]) (on file with author).

173. See NEFMC MEETING SUMMARY AUG. 2005, *infra* note 184, at 7-8.

174. Letter from James O'Malley, Executive Director, East Coast Fisheries Federation, Inc. to Frank Blount, Chairman, NEFMC 2 (May 25, 2005) (on file with author).

approach had resulted in a fishery where none of New England's nineteen managed groundfish stocks were being managed at its biomass target, thirteen stocks were considered overfished, and overfishing was still occurring on eight stocks.¹⁷⁵

The revised HAPC proposals were formally evaluated and scored at a second meeting of the Habitat PDT only, where a detailed discussion was led by pairs of PDT members who had been assigned to evaluate each proposal. These reviewers were also charged with writing detailed evaluations that were to be later revised to reflect the Habitat PDT discussion and presented to the NEFMC Habitat Committee for their consideration and recommendation for, or against, further development. The review team that led the evaluation of the Multi-species HAPC proposal did not include any of the independent expert habitat scientists on the Habitat PDT, but instead consisted of a NMFS resource economist and a NMFS marine habitat resource specialist.¹⁷⁶ During the Habitat PDT discussion, the proposal continued to be supported by many members of the Habitat PDT, including all three of its leading habitat scientists.¹⁷⁷ However, the discussion, and to an even greater extent the written evaluation later prepared for the NEFMC Habitat Committee, took a surprising turn away from the support and enthusiastic response that the proposal received during the first review meeting. The discussion and evaluation focused on several criticisms consistent with the issues raised during the intervening time between meetings by fishing industry representatives.¹⁷⁸ While the Habitat PDT meeting was open to the public, it was considered a working Habitat PDT meeting; thus, there was no opportunity for public participation and there were no additional opportunities to respond to the Habitat PDT discussion or the reviewer's written evaluations until the actual Habitat Committee meeting the following month where the proposals were considered and voted on.¹⁷⁹

The Habitat PDT's written evaluation of the Multi-species HAPC proposal presented to the NEFMC's Habitat Committee tracked industry criticism of the use of abundance ("prescience/absence") data and the

175. See 2005 GARM, *supra* note 3, at vi to viii.

176. The reviewers were Steve Edwards, National Marine Fisheries Service, and David Stevenson, National Oceanic & Atmospheric Administration.

177. These three scientists included Mr. Auster, Mr. Collie, and Page Valentine, who was absent from the initial meeting. All three are internationally known for their scientific work related to marine habitat. See, e.g., *supra* notes 6 and 7.

178. Habitat PDT Evaluation, *supra* note 172.

179. See E-mails (2) from Leslie-Ann McGee, Associate Director, NEFMC, to Roger Fleming, Senior Attorney, Conservation Law Foundation (July 12, 2005) (on file with author).

MARXAN model for identifying habitat.¹⁸⁰ Specifically, it elevated the scientifically groundless arguments made by some PDT members that juvenile fish abundance cannot be used to identify important fish habitat over the opinions of the leading habitat scientists, which was supported with uncontradicted scientific literature, favoring the use of abundance data and the MARXAN tool to identify important habitat.¹⁸¹ The written evaluation failed to even acknowledge that the leading habitat scientists on the Habitat PDT argued strongly in support of the proposal and its methodology.¹⁸² It also appeared to travel out of its way to attempt to sharply criticize the proposal wherever possible, including a passage that criticized the suggestion, based on NMFS's own recent economic analysis, that rebuilt groundfish populations could result in increased economic benefits for fishermen.¹⁸³

With this written evaluation provided as background, it is not surprising that the prospects for the Multi-species HAPC proposal did not improve when it was presented to the NEFMC's Habitat Committee. After a brief introduction of the proposal by staff, the commercial fisherman sitting as vice chair to the Committee simply stated the Multi-species HAPC proposal should not go forward because the use of relative abundance data as a proxy

180. Compare O'Malley, *supra* note 174, at 2, with Habitat PDT Evaluation, *supra* note 172, at 2-3.

181. See CRAWFORD & FLEMING, *supra* note 12, at 3.

182. See Letter from Fleming and Crawford, *supra* note 172.

183. Compare Habitat PDT Evaluation, *supra* note 172, at 4, with CRAWFORD & FLEMING, *supra* note 12, at 27. There were a variety of additional criticisms reflected in the PDT evaluation including that the proposal did not address certain EFH criteria and that it did not provide enough information on specific seascape and water column characteristics. As was later pointed out this was simply not true. The evaluation also contained embarrassing contradictions. For example, on the one hand there was criticism for not addressing current and historical ecological issues, but later the proposal was derided for comments addressing ecological benefits. In fact, in deriding CLF for referring to ecological benefits, it was asserted that this revealed the real underlying intent of the proposal to create broader marine protected areas. Unfortunately for the evaluation duo, the proposal was in fact merely using the precise terminology of the EFH rule and used a relatively narrow juvenile fish data set, much narrower than what would be required for a true marine protected area proposal. This point was made by Mr. Auster during the Habitat PDT discussion but the criticism remained in the written evaluation later presented to the Habitat Committee. Finally, the proposal was criticized for incorporating policy judgments such as weighting the solution toward already existing closed areas, yet this was specifically requested by the Habitat PDT at the first review meeting. The written evaluation did not accurately reflect the discussion of the larger PDT, and failed to reflect the will of the full Habitat PDT that it be forwarded to the Habitat Committee with a neutral recommendation for consideration with certain additional area-specific information on the habitat characteristics and evaluation criteria. This additional work was never completed. See Letter from Fleming and Crawford, *supra* note 172.

for habitat was inappropriate, and he made a motion to eliminate the proposal from further consideration.¹⁸⁴ This view again ignored the contradicted scientific literature to the contrary and the Habitat Committee staff's direct caution against condemning the use of this data as a proxy for habitat because that is the basis for all of New England's existing EFH designations—a method that met with peer review approval.¹⁸⁵ The NMFS EFH staff on hand, however, chimed in with vague and unsupported comments discounting the value of using abundance data and the MARXAN model for meeting EFH requirements, and the Committee passed the vice chair's motion ending consideration of the Multi-species HAPC proposal.¹⁸⁶

The Multi-species HAPC proposal presented an approach to identifying important habitat areas that was different than what had previously been taken by the Council when considering HAPCs or other habitat areas for protection. The proposal reflected an approach that relied upon the best available science.¹⁸⁷ The proposal was also different from all other proposals both in terms of methodology and the resulting HAPCs proposed, and given its sound basis in science, for that reason alone merited consideration as an alternative in the NEFMC's EFH Omnibus Amendment in order to meet NEPA requirements. This would have provided the opportunity to address any legitimate, perceived weaknesses through the development of additional information and analysis, much as was done with other proposed HAPCs.¹⁸⁸ To the fishing industry representatives and Habitat PDT and NEFMC Habitat Committee members who did not support full consideration of the proposal, the way the Multi-species HAPC proposal was most different from other proposals was that it proposed protecting significant areas of habitat currently fished in all three of the

184. NEW ENGLAND FISHERY MANAGEMENT COUNCIL, MEETING SUMMARY, JOINT HABITAT PDT AND HABITAT ADVISORS MEETING 8 (Aug. 22, 2005), *available at* http://www.nefmc.org/habitat/meetsum/habitat_aug05.pdf [hereinafter NEFMC MEETING SUMMARY AUG. 2005].

185. *Id.*

186. *Id.* (citing comments of Mr. Lou Chiarella, NMFS, stating “that HAPC designation implies a level of knowledge above and beyond what we have on average,” and that he “was not sure MARXAN can provide that additional knowledge that an HAPC requires.”) *Id.*

187. National Standard 2 of the Magnuson-Stevens Act requires that conservation and management measures be based on the best available scientific information available. 16 U.S.C. § 1851(a)(2) (2000).

188. For example, the Council recently approved a juvenile cod HAPC proposal for Georges Bank that was significantly reconfigured from the original proposal based on additional data gathered by the Habitat PDT. *See* Memorandum from Leslie-Ann McGee, PDT Chair to Habitat/MPA Committee re: the Development of a Great South Channel Habitat Area of Particular Concern (Nov. 1, 2006) (on file with author).

biogeographic regions managed by the Council. Thus, the NEFMC again allowed the perception of short-term economic costs to trump a science-based management approach designed to help restore a sustainable and long-term economically valuable groundfish fishery.

Based upon the experience with the HAPC process, it does not appear that the NEFMC and NMFS are prepared to undertake a meaningful, scientifically objective approach to habitat protection in New England. When called upon to consider the objective, science-based approach taken in the Multi-species HAPC proposal, the NEFMC with the support of NMFS elected not to give it full consideration. This response was disappointing, though perhaps not surprising given the NEFMC's historic resistance to protecting habitat and to taking a long-term view to management. In the end, industry fears about the implications of the proposal were most influential, and in the face of uncontradicted scientific evidence supporting the approach taken in the proposal, the NEFMC and NMFS questioned the scientific approach and used this alleged uncertainty as an excuse not to further consider the proposal. Instead, the NEFMC accepted for further consideration other proposals that contained little or no areas currently fished and that were smaller, independent areas.

On the other hand, as development of the Omnibus EFH Amendment has continued to unfold several of those independent HAPC alternatives do remain under consideration, and some of them have the potential to protect at least some habitat that is vulnerable and currently fished. The possibility remains that from these proposals, a less ambitious network of HAPCs will emerge, even if they were identified on an *ad hoc* rather than scientifically objective basis.¹⁸⁹ Further, the Habitat Committee agreed that use of the MARXAN tool should be considered for the second phase of the EFH Omnibus Amendment when measures designed to minimize adverse impacts to habitat, including habitat identified as HAPC's, are identified.¹⁹⁰ Thus, while the NEFMC's response to the Multi-species HAPC Proposal supports arguments for reform of the nation's fishery management councils and the nation's approach to fisheries management, several on-the-water improvements to habitat protection in New England may yet be achieved. Still, influential segments of New England's fishing industry have been dogging the HAPC process since its inception and the stiffest battles for designation and protection of some of New England's most important habitat are yet to come.

189. Some of the same areas that have been identified on an *ad hoc* basis were also identified through the modeling done for the Multi-species HAPC proposal.

190. Habitat PDT Evaluation, *supra* note 172, at 5.

VIII. LOOKING AHEAD: CAN WE COUNT ON THE MAGNUSON-STEVENS ACT FOR HABITAT PROTECTION OR SHOULD WE LOOK ELSEWHERE?

The demise of the New England groundfish fishery and the continuing destruction of sensitive marine habitats that support the Gulf of Maine region's commercially valuable marine fish populations illustrate the challenge of preserving marine ecosystems. Even with a growing body of scientific evidence in hand demonstrating the value of marine habitat to ensuring the recovery and long-term sustainability of fish populations and the destructive impacts of fishing gear to that habitat, the NEFMC has been slow to develop and enact the habitat protections necessary to lay the ecological foundation necessary for fish stock recovery. This failure to act is more bewildering when viewed together with economic analyses showing the potential benefits that would accrue to fishermen and fishing communities from a rebuilt groundfish fishery. Thus, while some progress has been made in New England toward restoring our severely depleted stocks of cod and other groundfish through management measures designed to reduce fishing mortality, significant changes in fisheries management are clearly still necessary if we are to ever again enjoy the benefits of a healthy and highly productive ocean ecosystem off New England's coast.

A. *Reason for Hope in New England*

There are reasons to hope for recovery of New England's fabled groundfish fishery. Though today it is highly altered by centuries of exploitation, the ocean ecosystem of the Gulf of Maine region remains one of the most productive in the world. So productive in fact that we may be justified in stating that if ever there was an ecosystem that could recover from the brink of collapse, it is here.¹⁹¹

Despite continued overfishing on several groundfish stocks, we have witnessed steady mortality rate decreases on the majority of stocks.¹⁹² There have also been some limited gains in habitat protection, primarily reflected by the first habitat closures for the region implemented through the recent groundfish and scallop fishery management plan amendments, and the canyon closures implemented as part of the recent monkfish plan amendment. We have witnessed signs of rebuilding on a few groundfish populations: fisheries scientists from the Northeast Fisheries Science Center now believe that there is evidence suggesting that the year classes of cod

191. See *supra* notes 21-24 and accompanying text.

192. See 2005 GARM, *supra* note 3, at vi.

born in 2003 and 2004 may be the strongest in over ten years.¹⁹³ The 2003 year class for haddock on Georges Bank appears to be one of the greatest on record.¹⁹⁴

Perhaps most promising are some of the recent changes in the makeup and actions of the NEFMC, although to date the significant actions fall outside the realm of habitat protection. This is best symbolized by the September 2006 election for Council Chairman, won by a representative from the Cape Cod Commercial Hook Fishermen's Association, an organization of fishermen on record as supporting conservation and reform of federal fisheries law.¹⁹⁵ In addition, Amendment 13 established New England's first groundfish rebuilding plan, and with it the increased use of enforceable catch limits in the region.¹⁹⁶ Subsequently, the Council took action in response to the most recent scientific report on groundfish stock status and acted, without a court order, to reduce fishing mortality back in line with the Amendment 13 rebuilding plan.¹⁹⁷ Within the past year, the Council has acted twice in its Atlantic herring fishery management plan to protect the forage base for the groundfish fishery and larger ecosystem through precautionary gear restrictions in important inshore spawning areas and a reduction in the inshore total allowable catch of herring.¹⁹⁸ More

193. *See Id.* at vi, 2-2, 2-5, 2-157.

194. *Id.* at 2-33.

195. *See* Press Release, Hook Fisherman Elected Chair of the New England Fishery Management Council (Sept. 26, 2006), available at http://www.ccchfa.org/pages/media_center/41/pages/files/pressrelease092606.pdf [hereinafter Hook Fisherman Press Release]. In addition, council representatives from non-commercial fishing sectors are participating at unprecedented levels, with an environmental representative from Environmental Defense in positions on the Executive Committee and as Chair of the Habitat/MPA/Ecosystems Oversight Committee, and a representative from the recreational fishing sector in positions as council Vice Chairmen on the Executive Committee and as Chair of the Multi-Species (Groundfish) Committee. *See* NEFMC, Council Members and Staff, <http://www.nefmc.org/staff/index.html>. The at-large appointment held by Environmental Defense for the past several years remains the only conservation representative currently sitting on a council in the country. *See* EAGLE ET AL., *supra* note 17, at 24.

196. *See* FINAL AMENDMENT 13, *supra* note 1, at I-36.

197. *See* NEW ENGLAND FISHERY MANAGEMENT COUNCIL, FINAL FRAMEWORK 42 TO THE NORTHEAST MULTISPECIES FISHERY MANAGEMENT PLAN AND FRAMEWORK ADJUSTMENT 3 TO THE MONKFISH FISHERY MANAGEMENT PLAN, INCLUDING AN ENVIRONMENTAL ASSESSMENT, REGULATORY IMPACT REVIEW, AND INITIAL REGULATORY FLEXIBILITY ANALYSIS 41 (Apr. 21, 2006), available at <http://www.nefmc.org/nemulti/index.html> (follow "Final Document- Framework 42 to the Northeast Multispecies Fishery Management Plan" hyperlink).

198. *See* NEW ENGLAND FISHERY MANAGEMENT COUNCIL, FINAL AMENDMENT 1 TO THE FISHERY MANAGEMENT PLAN FOR ATLANTIC HERRING, INCLUDING A FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT AND INITIAL REGULATORY FLEXIBILITY ANALYSIS

recently, the NEFMC, sensing frustration with its historic failed approach to groundfish management, has invited discussion of new approaches to managing the groundfish fishery that could move the region away from its failed approach that has allowed overfishing to continue for years.¹⁹⁹

These changes give reason to hope that the NEFMC and NMFS will take a proactive approach as New England enters the final phase of developing its EFH Omnibus Habitat Amendment. If the Council applies the same proactive approach that led to the deep-sea closures for coral communities in the canyons off Georges Bank to other areas currently impacted by fishing gear, it will promote healthy fish populations and make up for existing habitat protection shortfalls. Further, as the NEFMC considers new alternatives for groundfish management, it is likely that additional opportunities for habitat protection may arise. These signs of hope in New England, especially if combined with additional necessary changes, may provide opportunities for New England's ocean ecosystem to return to a healthier and more sustainable status.

B. Strengthening the Habitat Provisions of the Magnuson-Stevens Act

After ten years of experience under the SFA amendments, it is evident that there are several aspects of the Magnuson-Stevens Act's habitat provisions that require strengthening if we are to achieve its conservation promise. Habitat protections in the form of gear modifications and habitat closures are two important areas where significant habitat protection progress can be made in a relatively short period of time. Bottom-tending mobile fishing gear such as bottom trawls and dredges are widely con-

(May 3, 2006), *available at* http://www.nefmc.org/herring/planamen/final_a1/ha1_fseis_may06_sec02.pdf (establishing an inshore fixed gear/purse seine only area to address localized depletions); NEW ENGLAND FISHERY MANAGEMENT COUNCIL, PROPOSED ATLANTIC HERRING SPECIFICATIONS FOR THE 2007-2009 FISHING YEARS, INCLUDING THE ENVIRONMENTAL ASSESSMENT, REGULATORY IMPACT REVIEW, AND INITIAL REGULATORY FLEXIBILITY ANALYSIS 8 (Nov. 3, 2006), *available at* <http://www.nefmc.org/herring/index.html> (follow "What's New" hyperlink; then follow "Proposed Atlantic Herring Specifications for the 2007-2009 Fishing Years" hyperlink) (voting to reduce the inshore Gulf of Maine total Allowable Catch from 60,000 mt to 50,000 mt).

199. *See* NEW ENGLAND FISHERY MANAGEMENT COUNCIL, GROUND FISH OVERSIGHT COMMITTEE, GROUND FISH ADVISORY PANEL, RECREATIONAL ADVISORY PANEL, WORKSHOP SUMMARY (Nov. 6, 2006), *available at* http://www.nefmc.org/nemulti/pdfmeet/groundfish_nov06.pdf; NEW ENGLAND FISHERY MANAGEMENT COUNCIL, NOTICE OF SCOPING HEARINGS (Nov. 7, 2006), *available at* http://www.nefmc.org/nemulti/meeting_notice/Final_Amend16_ScopingNotice.pdf; *see also* FINAL AMENDMENT 13, *supra* note 1 and accompanying text (explaining New England's historic approach to groundfish management).

sidered the most destructive forms of commercial fishing gear because they smooth critical shelter habitat and disrupt the “ecosystem engineers”—the plants and animals that modify habitat through their activities such as borrowing animals and hard-bodied corals. The scientific evidence regarding the negative impacts from these gears is clear and growing stronger.

The Magnuson-Stevens Act should be amended to require NMFS to identify in each region specific areas or zones where the most destructive gears like bottom trawls and dredging can be used. Identification of these zones needs to be based on the recommendations of qualified scientists and evidence indicating whether these types of fishing activities can be conducted without significantly altering or destroying habitat and reducing biodiversity.²⁰⁰ This scientific information then must be incorporated into fishery management plans, with areas identified as not suitable for these types of gear closed to bottom trawling and dredging. Known sensitive habitats should be closed to such gear immediately.²⁰¹ Finally, programs should be established to support gear modifications designed to reduce fishing gear impacts on habitat. In addition, incentives should be created for developing gears that reduce habitat (and bycatch) impacts, with requirements placed on each fishery management council to demonstrate measurable progress in developing and implementing the use of such gears.

The legal mandates of the Magnuson-Stevens Act also need to be strengthened. The standards set in each fishery management plan to avoid or minimize adverse impacts to habitat from fishing need to be clarified and strengthened. It is evident by the successful resistance to implementing meaningful habitat protections that too much discretion not to act is allowed under the current language. Court decisions under the EFH provisions demonstrate that the current EFH provisions may not provide the legal means needed to continue to encourage responsible action from fisheries managers.²⁰² Unfortunately, in 2006 there were efforts by some in Congress

200. PEW OCEANS COMM'N, *supra* note 8, at 47, 111-12.

201. The designation of a portion of the Stellwagen Bank National Marine Sanctuary in Massachusetts Bay, and at each of our other thirteen National Marine Sanctuaries, as a fully protected area, as was done within the Florida Keys National Marine Sanctuary, would be an important step in promoting the use of fully protected ocean areas 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 spoil disposal. 15 C.F.R. § 922.142 (2006).

202. The Magnuson-Stevens Act imposes on NMFS a duty to minimize to the extent practicable the adverse effects on EFH. 16 U.S.C. § 1853(a)(7) (2000). Councils have often used the “practicable” language as part of their rationale for not taking action to protect habitat. *See* MARINE FISH CONSERVATION NETWORK, *supra* note 110, at 23. Recent litigation by conservationists, frustrated with the lack of measures enacted to protect EFH in the New England scallop fishery, resulted in an adverse court opinion that left the

in response to industry pressure to increase the amount of “flexibility” in the law, which is a thinly masked euphemism for “unenforceability.”

We need to be able to rely on congressional leadership that is strong enough to resist the political pressure from that part of the fishing industry that historically does not look past their own short-term special interests. The SFA amendments eliminated the discretion in earlier federal fisheries management law that allowed overfishing to continue in order to accommodate short-term economic interests at the expense of the long-term ecological and economic health of the fishery. Although the 2006 Magnuson-Stevens Act reauthorization battle largely forced conservationists’ into a time consuming defensive effort to preserve the existing conservation mandates of the SFA, conservationists and the new Congress must recognize that too much is at stake given the deteriorating condition of our oceans not to push on with significant EFH reform efforts.

C. Ecosystem-Based Management

As development pressures for scarce ocean resources intensify and competing demands increase, marine scientists are increasingly recognizing that we will need a more comprehensive and integrated ecosystem planning approach to the management of all ocean-related activities, including fisheries. In the absence of a comprehensive ocean management framework, federal and state regulators are currently responding to proposed development and other activities on an *ad hoc* basis with no plan 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. The only way to accommodate the growing conflict between current and proposed uses, while ensuring the ecological integrity of the marine ecosystem, is to approach management from a comprehensive, proactive systems planning perspective. Fishery management plans, as well as any other development activity proposed within the 200-mile exclusive economic zone, should fit

meaning of the term “practicable” largely meaningless. *See Conservation Law Found. v. Evans*, 360 F.3d 21, 28 (1st Cir. 2004). The plaintiffs argued that NMFS violated its statutory obligation by rejecting the closure of the four fishing areas, arguing that NMFS’s decision was irreconcilable with record evidence that the closures would be beneficial with respect to EFH. *Id.* at 27-28. The plaintiffs called for an interpretation of the statute that equated “practicability” more closely with “possibility,” thus requiring NMFS to implement measures that address EFH so long as they are feasible. *Id.* at 28. The court rejected this argument, rationalizing that “by using the term ‘practicable’ Congress intended to allow for the application of agency expertise and discretion in determining how best to manage fishery resources.” *Id.* at 28.

within constraints established through more broadly-based ecosystem management planning exercises.²⁰³

The U.S. Commission on Ocean Policy recognized the need for ecosystem-based management, stating that “[e]cosystem-based management looks at all the links among living and nonliving resources, rather than considering single species in isolation. This system of management considers human activities, their benefits, and their potential impacts within the context of the broader biological and physical environment.”²⁰⁴ This echoes the 1996, SFA amendments which established an Ecosystem Principles Advisory Panel. The Panel found that the regional fishery management councils were not adequately applying ecosystem principles and recommended that they develop “fishery ecosystem plans” (FEPs) to begin incorporating these principles into their fishery management decisions.²⁰⁵ Most councils have made little progress in moving toward ecosystem-based fisheries management.

Marine ecosystem protection should be made the organizing principle for fishery management. The Magnuson-Stevens Act should be changed to require FEPs, as was recommended by the Ecosystem Principles Advisory Panel.²⁰⁶ 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. 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.

D. Fishery Management Council Reform

It was evident from the HAPC review process that the NEFMC’s use of a plan development team and team of industry advisers to evaluate

203. This is the point that the Pew Oceans Commission made when it recommended 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 marine ecosystems upon which they depend.” See PEW OCEANS COMM’N, *supra* note 8, at 46.

204. See U.S. COMM’N ON OCEAN POLICY, *supra* note 129, at 63.

205. ECOSYSTEM PRINCIPLES ADVISORY PANEL, ECOSYSTEM-BASED FISHERY MANAGEMENT: A REPORT TO CONGRESS BY THE ECOSYSTEM PRINCIPLES ADVISORY PANEL 3, 37 (Apr. 1999), available at <http://www.nmfs.noaa.gov/sfa/EPAPrpt.pdf>.

206. *Id.*

HAPC proposals, rather than a scientific and statistical committee filled with independent experts in fields related to marine habitat protection, introduced bias and confusion to the process. As a result, consideration of the Multi-species HAPC proposal ended when a commercial fisherman sitting on the Habitat Committee easily won a motion based on his opinion that the science was not valid. This helps demonstrate the need for reform of our fishery management council system. Conflicts of interest and homogeneous council representation have prevented systematic, science-based, precautionary management.

The regional councils and council members are not well suited—either by time or capacity—to debate scientific issues or to develop a scientific consensus.²⁰⁷ The regional councils are part of a political system, 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 conservation (such as decisions to set allowable catch levels, biological reference points, and habitat protections) and other scientific questions inherent to fisheries management and the political decisions related to the allocation of catches and the management measures designed to achieve the biological objectives.²⁰⁸

Today, the public and a number of fishing-related industries continue to play only a limited role in managing our fisheries resources. Although the current make-up of the NEFMC is improved, it continues to be dominated by the same commercial fishing interests it seeks to regulate.²⁰⁹ Further, there is nothing in place to ensure that the makeup of the Council does not swing back to the same type of commercial fishing interests that drove New England marine fish stocks to record low levels and left EFH unprotected. Fishery management councils should be diversified to include greater representation of public interests, including conservation and consumer interests, and fishing interests, including, seafood wholesalers and

207. In Amendment 13, however, the NEFMC asserted that the Magnuson-Stevens Act requires councils to engage in just this activity by law. See FINAL AMENDMENT 13, *supra* note 1, at I-19 to I-20 (quoting § 303(a)(10) of the Magnuson-Stevens Act).

208. See also PEW OCEANS COMM'N, *supra* note 8, at 109-10; U.S. COMM'N ON OCEAN POLICY, *supra* note 129, at 277-78; EAGLE ET AL., *supra* note 17, at 37-39. Ironically, the allocation questions that are the most critical to the future of people in the fishery remain the most difficult and the least attended-to aspects of the NEFMC's jurisdiction.

209. See Hook Fisherman Press Release, *supra* note 195 and accompanying text. Note, however, that while members with ties to the recreational fishing industry and small boat fleet hold the Council Chair and other key positions, of twelve appointed members in New England, eight directly represent commercial fishing interests. See also Shelley et al., *supra* note 25, 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).

processors, recreational fishermen, and different gear and vessel types.²¹⁰ Our oceans and the marine life they support are, as we know, a public resource.

E. Ocean Conservation Areas

For a number of years now, the NEFMC has used seasonal and year-round area closures to help control fishing mortality and to limit fishing on some stocks during critical life stages such as spawning. While the NEFMC recently designated portions of these mortality closures as its first year-round "habitat closures," protecting them from the use of certain gear types, New England's historic use of mortality closures have proven largely ineffective as tools for sustainable habitat protection.²¹¹ Meanwhile, marine scientists from around the world have concluded that permanently closed areas (fully protected areas) are necessary to protect heavily fished species, biodiversity, and ecosystem health.²¹²

The single most important action that could be taken to benefit the long-term health and productivity of New England's ocean ecosystem would be to identify and protect ecologically important and unique marine habitats from all adverse, extractive, and disturbing human activities.²¹³ From a

210. The need to diversify would be less critical if conservation and science decisions were separated; however, conflict issues would remain and, in any event, broader representation would likely increase the range of management options considered. EAGLE ET AL., *supra* note 17, at 40.

211. As demonstrated by the actions taken in Amendment 13 and 10, mortality closures are temporary and subject to change at the discretion of the NEFMC. While those portions now designated as habitat closures carry with them a greater imprimatur of permanence by virtue of their designation under the EFH provisions of the Magnuson-Stevens Act, they too are subject to revision by the NEFMC. Once reopened, a single pass by a scallop dredge or otter trawl can undo years of recovery. *See supra* note 130 and accompanying text.

212. *See, e.g.*, NATIONAL RESEARCH COUNCIL, MARINE PROTECTED AREAS: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS (2001); Worm et al., *supra* note 86, at 789-90; NATIONAL CENTER 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>. *See also* PEW OCEANS COMM'N, *supra* note 8, at 111; U.S. COMM'N ON OCEAN POLICY, *supra* note 129, at 103 (recognizing marine protected areas as an important management tool for marine ecosystem protection).

213. *See* JOHN CRAWFORD ET AL., MARINE ECOSYSTEM CONSERVATION FOR NEW ENGLAND AND MARITIME CANADA: A SCIENCE-BASED APPROACH TO THE IDENTIFICATION OF PRIORITY AREAS FOR CONSERVATION 16 (Nov. 2006), available at <http://www.clf.org/general/index.asp?id=886>. Using new site selection tools and existing data, the report, by way of example, produced a network comprised of approximately twenty percent of the Gulf of Maine, Georges Bank, and Scotian Shelf that includes thirty different areas distributed among those three biogeographic regions. *Id.* at 8-9; *see also* Worm et al., *supra* note 86, at 89-90.

structural perspective, this is the key gap in the current marine resource management regime. Absent adoption of an adequate program of fully protected ocean conservation areas, it is likely that biodiversity and the net productivity of our ocean ecosystems will continue to decline.

The most important reason for creating an integrated network of fully protected ocean conservation areas is to conserve locally, regionally, and nationally significant marine biodiversity. While such biodiversity has current and potential future commercial value, the primary justification for protection is the biodiversity itself: a scientifically based network of fully protected ocean conservation areas is the only way we can ensure that the integrity of the marine ecosystem is protected.

A second reason for creating a well designed, fully protected network of ocean conservation areas in the Gulf of Maine is to protect the core spawning biomass of commercially important or ecologically critical fish species in a “permanent reserve” status. Such a network would improve sustainable fisheries management and increase predictability in the fishing industry if a significant portion of the spawning biomass were taken out of the fishery and put “in the bank.”

Finally, a network of fully protected ocean conservation areas would 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, how human activities impact those systems, and whether the goals of protecting biodiversity and the spawning biomass of commercially significant species are being achieved.

F. Reforming Ocean Governance

America’s oceans span nearly 4.5 million square miles, an area twenty-three percent larger than the nation’s land area. These vast resources are reserved under public trust principles to be managed for the public’s benefit in perpetuity. Yet, the Pew Ocean Commission and the U.S. Commission on Ocean Policy reports both concluded that we are at risk of losing the many ecological, economic, and cultural benefits they provide.²¹⁴ There is

214. The two ocean reports had different political origins but reached largely the same conclusions. The Pew Oceans Commission was privately created and funded to conduct a comprehensive review of U.S. ocean policy. The Commission was formed “to identify policies and practices necessary to restore and protect living marine resources in [the United States].” PEW OCEANS COMM’N, *supra* note 8, at ix. Congress passed a bill that empowered the President to put together a U.S. Commission on Ocean Policy to conduct an investigation and make recommendations. *See* Oceans Act of 2000 Pub. L. No. 106-256, 114 Stat. 644

a need for new institutions to govern our relationship with the oceans and we need to develop an eco-regional management approach that moves away from single-species focused management to a regime that takes the entire ecosystem into account.²¹⁵

The laws and policies we use to manage our oceans are out of date and require updating. We need to establish as the primary focus of ocean governance ecosystem health, integrity, sustainability, and precaution if we are to continue to enjoy the bounty and beauty they provide.²¹⁶ We need a new ocean ethic reflecting our overarching stewardship responsibility to our oceans from which all management structures and decisions must flow, beginning with those related to fisheries management.²¹⁷

In turn, new federal laws and policies regulating topics ranging from biodiversity protection to multi-use management planning to ocean zoning must be implemented in order for our oceans to continue to provide the ecological, economic, and cultural benefits on which we are dependent. Fisheries regulation and pollution control, habitat protection, and marine resource development have to be merged into an integrated, scientific, and administrative framework, reflecting the interconnections between all living things and their environments.²¹⁸

IX. CONCLUSION

The Sustainable Fisheries Act has led to improvements in many, although not all, of New England's important commercial fish populations. Much of this initial progress has come as a result of litigation and judicial encouragement, although results from court decisions have been mixed and demonstrate the need for added strength and clarity in the law to ensure that the Act fulfills its conservation promise. The Act's habitat provisions provide a workable and valuable tool for protecting fish habitat, but there is significant room for improvement.

Two prestigious U.S. ocean commissions recently reached independent yet similar conclusions: our oceans are in trouble. Among the necessary

(2000). These were the first comprehensive reviews of our oceans in over thirty years when, in 1969, the Stratton Commission undertook the first comprehensive review of U.S. ocean policy. 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/title.html>.

215. PEW OCEANS COMM'N, *supra* note 8, at x-xi.

216. *Id.* at x.

217. *Id.* at 99.

218. *See* Fleming et al., *supra* note 25, at 621.

changes are improvements to the Magnuson-Stevens Act's EFH provisions in order to improve the protection of marine habitat important to establishing sustainable fish populations.²¹⁹ Unfortunately, the recent debate over reauthorization of the Magnuson-Stevens Act did not include any serious consideration of new provisions that would strengthen its EFH provisions. Conservation-minded organizations working on improving the condition of our oceans were largely left to take comfort that the reauthorization bills considered by Congress left the EFH provisions intact. Though this leaves us all wanting for needed reform, it may be viewed as a positive development given the aggressive attempts to roll back other provisions of the Magnuson-Stevens Act, and a sign that the EFH provisions will remain a central component of U.S. fisheries management into the future. This will at least continue to provide the opportunity to improve upon current levels of habitat protection, and a new Congress may provide opportunities for needed EFH reform.

The painful experiences and hard lessons from New England's fisheries mismanagement that have accumulated over the past decades should remind us that the ocean's bounty is no longer limitless and, in fact, never was. Our stewardship responsibility runs to ourselves and to future generations, and we must translate those hard lessons into effective management programs that will sustain our oceans as wonderful and productive public commons. Protecting EFH lays the ecological foundation for restoring marine fish populations, and contributing to the high level of biodiversity and critical range of natural habitats that are necessary to ensure that our oceans remain healthy and sustainable for generations to come.

219. See PEW OCEANS COMM'N, *supra* note 8, at 47; U.S. COMM'N ON OCEAN POLICY, *supra* note 129, at 298.