

7.0 MAGNUSON-STEVENSON ACT CONSISTENCY

[This section to be completed for the final submission document]

7.1 National Standards

7.2 Required Provisions

7.3 Discretionary Provisions

8.0 CONSISTENCY WITH OTHER APPLICABLE LAW

8.1 National Environmental Policy Act (NEPA)

8.1.1 Introduction

Based in part on the issues identified during scoping, the EIS includes an evaluation of the effects of fishing on EFH and an analysis of alternatives to minimize to the extent practicable the adverse effects on EFH from fishing. The EIS considers and evaluates alternatives to minimize adverse effects to the extent practicable and include consideration of measures such as closed areas, effort reductions and gear modifications.

The analysis considers the no-action, along with a range of other reasonable alternatives. Information from the original FMP and the EA for Amendment 1 is reflected in this analysis. However, additional information and the selection of alternatives come from a review of the best scientific information available, including new information made available since the fishery management plan amendments were originally completed.

Section 5.0 of the EIS describes the affected biological and physical environment. This includes a discussion of the areas and habitat types in the area that EFH is designated. The section's description of the affected environment details the physical and biological resources affected by the alternatives, including a description of the Atlantic Coast shelf ecosystem, benthic habitat, fishery activity and relevant biological resources with an emphasis on benthic organisms.

Section 5.4 includes an evaluation of gear effects on EFH. Specifically, the section describes the gears used, distribution and use of the different gears, the types of gear effects, the vulnerability of the EFH to the gear type and a determination of the adverse effects of gears on EFH.

Section 4.1.9 describes the alternatives for minimizing the adverse effects of fishing on EFH. The section discusses significant issues associated with each alternative including those identified during scoping. The discussion of each alternative for minimizing the effects of fishing on EFH describes the associated fishery management measures. This section concludes with a discussion and explanation of alternatives that were considered but not carried forward for further analysis. The description of alternatives provides a broad summary and comparison of each alternative.

Section 6.3 describes the environmental consequences of each alternative for minimizing the effects of fishing on EFH. For each alternative to minimizing adverse effects of fishing on EFH,

the chapter describes the practicability of the associated fishery management measures and evaluates the environmental consequences in relation to effects on EFH, the fishery, other fisheries, and protected resources. The discussion of potential impacts resulting from each alternative is presented in comparative form that clearly distinguishes the environmental consequences of each alternative. The discussion includes a description of the conservation benefits and the adverse impacts of the alternatives.

Appendix II and other parts of this document also include material to satisfy the requirements of the NMFS guidelines at 50 CFR part 600, Subpart J for mandatory requirements of an FMP to:

1. Identify any fishing activities that are not managed under the MSA that may adversely effect EFH.
2. Identify activities other than fishing that may adversely effect EFH. For each activity, the FMP should describe known and potential adverse effects to EFH.
3. Identify actions to encourage the conservation and enhancement of EFH, including recommended options to avoid, minimize, or compensate for the adverse effects, especially in HAPCs.
4. List the major prey species for the species in the fishery management unit and discuss the location of prey species' habitat. Consider adverse effects on prey species and their habitats that may result from actions that reduce their availability, either through direct harm or capture, or through adverse effects to prey species' habitats.
5. Recommendations, in priority order, for research effects necessary to improve upon the description and identification of EFH, the identification of threats to EFH from fishing and other activities and the development of conservation and enhancement measures for EFH.
6. Conduct a cumulative impact analysis that describes impacts on an ecosystem or watershed scale (Cumulative effects of multiple gear types is included in the Gear Effects Evaluation Section)

8.1.2 Scoping

The Councils distributed a scoping document on November 15, 2001 to approximately 400 interested parties and members of the press, and published a Notice of Intent to prepare an SEIS and formally initiate scoping on December 10, 2001 (66 *FR* 63666). In addition to written scoping comments, the Councils received oral comment at a Monkfish Oversight Committee meeting on January 14, 2002, the NEFMC meeting on January 15, and the MAFMC meeting on January 30.

In April 2002, a member of the NEFMC staff visited several ports in the southern range of the fishery to gather information on the fishing communities in the area and take comments from members of the industry there. While not formal scoping hearings, the information collected contributed to the formulation of alternatives and identification of issues considered in this

amendment, particularly those pertaining to the revision of the limited entry provisions. Those meetings took place as follows: Point Pleasant, NJ (4/19); Barnegat Light, NJ (4/19); Cape May, NJ (4/21); Wanchese, NC (4/25); Chincoteague, VA (4/26); and Ocean City, MD (4/26).

The Councils held supplemental scoping hearings (67 FR 54609, August 23, 2002), specifically to take additional public comment on the proposals to modify the limited entry qualification criteria on September 11 (in Providence, RI and Manteo, NC) and September 12 (in Chincoteague, VA), 2002.

NMFS published a Notice of Intent (NOI) to prepare a supplemental EIS for the EFH components of the Northeast Multispecies and Atlantic Sea Scallop Fishery Management Plans on February 1, 2001 (66 FR 8568). While not specifically addressing the Monkfish FMP, the process is relevant to this amendment given the close connection between multispecies and scallop fishing and monkfish fishing, and the significant overlap of vessels permitted in the three fisheries. The public comment period was open until April 4, 2001. NMFS (and/or the Council) solicited public comment to identify a range of alternatives for identifying and describing EFH and HAPCs and requested information on adverse effects of fishing activities on EFH and HAPCs. NMFS (and/or the Council) solicited public comment on appropriate management measures and alternatives to minimize, to the extent practicable, any adverse effects of fishing on EFH. NMFS (and/or the Council) held 1 public scoping meeting. The meeting occurred in Gloucester, MA on February 22, 2001. No scoping comments were submitted on essential fish habitat issues.

8.1.3 Major Conclusions

[Determination of Significance under NEPA, to be completed for the Final EIS]

8.1.4 Areas of Controversy

[Final EIS]

8.1.5 Issues to be Resolved

This section will be completed for the final EIS based on comments received on the DSEIS. Several issues have been identified, however, during the development of this amendment that will be addressed in the future under separate action, and are described below.

8.1.5.1 Measures to minimize fishery interactions with sea turtles

The Councils considered including in this amendment alternative approaches to the sea turtle protection measures implemented by NMFS under the authority of the Endangered Species Act for the large mesh gillnet fishery in the southern end of the range. But, as indicated in Section 4.1.7, the development of specific measures, depended on the completion of analysis sea-surface temperature data and other analyses that were not done in time to be included in this amendment. Therefore, no specific measures are proposed for Amendment 2 at this time, but the Councils may take action in the future under the framework adjustment process.

8.1.5.2 Essential Fish Habitat requirements

In addition to the actions being considered in this amendment to minimize the impact of the monkfish fishery on EFH, a number of other Magnuson-Stevens Act requirements (as outlined in NMFS' guidelines) remain to be addressed. In the Fall of 2003, the NEFMC will initiate a

Habitat Omnibus Amendment that will be considered as Amendment 3 to the Monkfish FMP, as well as Amendment 14 to the Multispecies FMP, Amendment 11 to the Sea Scallop, Amendment 2 to the Herring FMP, and Amendment 1 to the Skate, Red Crab, and the Atlantic Salmon FMPs. This Omnibus Amendment will, tentatively, contain the following five components:

1. Review and revision of EFH components of FMPs

- **Description and identification of EFH**

Consideration of a range of alternatives for EFH designations and update all NMFS Source Documents for Species Reports

- **Non-Magnuson-Stevens Act fishing activities that may adversely effect EFH**

Update current section on identifying any fishing activities that are not managed under the MSA that may adversely effect EFH.

- **Non-fishing related activities that may adversely effect EFH**

Update current section on identifying activities other than fishing that may adversely affect EFH. For each activity, the FMP should describe known and potential adverse effects to EFH.

- **Conservation and enhancement**

Update current section on identifying actions to encourage the conservation and enhancement of EFH, including recommended options to avoid, minimize, or compensate for the adverse effects, especially in HAPCs.

- **Prey Species**

Review and update the current list the major prey species for the species in the fishery management unit and discuss the location of prey species' habitat. Consider adverse effects on prey species and their habitats that may result from actions that reduce their availability, either through direct harm or capture, or through adverse effects to prey species' habitats.

- **Research and Information Needs**

Review and update the current recommendations, in priority order, for research effects necessary to improve upon the description and identification of EFH, the identification of threats to EFH from fishing and other activities and the development of conservation and enhancement measures for EFH.

2. Development and adoption of a habitat susceptibility and recovery index for the Northeastern US

3. Identification of habitat areas of particular concern (HAPCs)

This element will be done through the HAPC process approved by the Council and included in a formal RFP. The RFP will be initiated in NOI for the Omnibus Amendment 2 and terminated 6 months later.

4. Consideration and identification of Dedicated Habitat Research Areas

The Councils may consider using the same type of process as the HAPC process and work closely with the Research Steering Committee on this effort.

5. Develop an integrated approach to EFH management to apply across NEFMC FMPs

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8.1.7 SEIS CIRCULATION LIST

[to be completed before DSEIS submission]

8.1.8 REFERENCES

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8.1.9 Glossary

Adult stage: One of several marked phases or periods in the development and growth of many animals. In vertebrates, the life history stage where the animal is capable of reproducing, as opposed to the juvenile stage.

Adverse effect: Any impact that reduces quality and/or quantity of EFH. May include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include sites-specific or habitat wide impacts, including individual, cumulative, or synergistic consequences of actions.

Aggregation: A group of animals or plants occurring together in a particular location or region.

Anadromous species: fish that spawn in fresh or estuarine waters and migrate to ocean waters

Amphipods: A small crustacean of the order Amphipoda, such as the beach flea, having a laterally compressed body with no carapace.

Anaerobic sediment: Sediment characterized by the absence of free oxygen.

Anemones: Any of numerous flowerlike marine coelenterates of the class Anthozoa, having a flexible cylindrical body and tentacles surrounding a central mouth.

Benthic community: *Benthic* means the bottom habitat of the ocean, and can mean anything as shallow as a salt marsh or the intertidal zone, to areas of the bottom that are several miles deep in the ocean. *Benthic community* refers to those organisms that live in and on the bottom. (*In@* meaning they live within the substrate; e.g, within the sand or mud found on the bottom. See *Benthic infauna*, below)

Benthic infauna: See *Benthic community*, above. Those organisms that live *in* the bottom sediments (sand, mud, gravel, etc.) of the ocean. As opposed to *benthic epifauna*, that live *on* the surface of the bottom sediments.

Benthivore: Usually refers to fish that feed on benthic or bottom dwelling organisms.

Berm: A narrow ledge typically at the top or bottom of a slope; e.g. a berm paralleling the shoreline caused by wave action on a sloping beach; also an elongated mound or wall of earth.

Biogenic habitats: Ocean habitats whose physical structure is created or produced by the animals themselves; e.g, coral reefs.

Biomass: The total mass of living matter in a given unit area or the weight of a fish stock or portion thereof. Biomass can be listed for beginning of year (Jan-1), Mid-Year, or mean (average during the entire year). In addition, biomass can be listed by age group (numbers at age

* average weight at age) or summarized by groupings (e.g., age 1⁺, ages 4+ 5, etc). See also spawning stock biomass, exploitable biomass, and mean biomass.

B_{MSY}: The stock biomass that would produce MSY when fished at a fishing mortality rate equal to F_{MSY}. For most stocks, B_{MSY} is about ½ of the carrying capacity. The proposed overfishing definition control rules call for action when biomass is below ¼ or ½ B_{MSY}, depending on the species.

B_{threshold}: 1) A limit reference point for biomass that defines an unacceptably low biomass i.e., puts a stock at high risk (recruitment failure, depensation, collapse, reduced long term yields, etc). 2) A biomass threshold that the SFA requires for defining when a stock is overfished. A stock is overfished if its biomass is below B_{threshold}. A determination of overfished triggers the SFA requirement for a rebuilding plan to achieve B_{target} as soon as possible, usually not to exceed 10 years except certain requirements are met. For monkfish, B_{threshold} was specified in Framework 2 as 1/2B_{Target} (see below).

B_{target}: A desirable biomass to maintain fishery stocks. This is usually synonymous with B_{MSY} or its proxy, and was set in the original Monkfish FMP as the median of the 3-yr. running average of the 1965-1981 autumn trawl survey biomass index.

Biota: All the plant and animal life of a particular region.

Bivalve: A class of mollusks having a soft body with platelike gills enclosed within two shells hinged together; e.g., clams, mussels.

Bottom roughness: The inequalities, ridges, or projections on the surface of the seabed that are caused by the presence of bedforms, sedimentary structures, sedimentary particles, excavations, attached and unattached organisms, or other objects; generally small scale features.

Bottom tending mobile gear: All fishing gear that operates on or near the ocean bottom that is actively worked in order to capture fish or other marine species. Some examples of bottom tending mobile gear are otter trawls and dredges.

Bottom tending static gear: All fishing gear that operates on or near the ocean bottom that is not actively worked; instead, the effectiveness of this gear depends on species moving to the gear which is set in a particular manner by a vessel, and later retrieved. Some examples of bottom tending static gear are gillnets, traps, and pots.

Boulder reef: An elongated feature (a chain) of rocks (generally piled boulders) on the seabed.

Bryozoans: Phylum aquatic organisms, living for the most part in colonies of interconnected individuals. A few to many millions of these individuals may form one colony. Some bryozoans encrust rocky surfaces, shells, or algae others form lacy or fan-like colonies that in some regions may form an abundant component of limestones. Bryozoan colonies range from millimeters to meters in size, but the individuals that make up the colonies are rarely larger than a millimeter. Colonies may be mistaken for hydroids, corals or seaweed.

Burrow: A hole or excavation in the sea floor made by an animal (as a crab, lobster, fish, burrowing anemone) for shelter and habitation.

Bycatch: (v.) the capture of nontarget species in directed fisheries which occurs because fishing gear and methods are not selective enough to catch only target species; (n.) fish which are harvested in a fishery but are not sold or kept for personal use, including economic discards and regulatory discards but not fish released alive under a recreational catch and release fishery management program.

Capacity: the level of output a fishing fleet is able to produce given specified conditions and constraints. Maximum fishing capacity results when all fishing capital is applied over the maximum amount of available (or permitted) fishing time, assuming that all variable inputs are utilized efficiently.

Catch: The sum total of fish killed in a fishery in a given period. Catch is given in either weight or number of fish and may include landings, unreported landings, discards, and incidental deaths.

Coarse sediment: Sediment generally of the sand and gravel classes; not sediment composed primarily of mud; but the meaning depends on the context, e.g. within the mud class, silt is coarser than clay.

Commensalism: See *Mutualism*. An interactive association of two species where one benefits in some way, while the other species is in no way affected by the association.

Continental shelf waters: The waters overlying the continental shelf, which extends seaward from the shoreline and deepens gradually to the point where the sea floor begins a slightly steeper descent to the deep ocean floor; the depth of the shelf edge varies, but is approximately 200 meters in many regions.

Crustaceans: Invertebrates characterized by a hard outer shell and jointed appendages and bodies. They usually live in water and breathe through gills. Higher forms of this class include lobsters, shrimp and crawfish; lower forms include barnacles.

Diatoms: Small mobile plants (algæ) with silicified (silica, sand, quartz) skeletons. They are among the most abundant phytoplankton in cold waters, and an important part of the food chain.

Days absent: an estimate by port agents of trip length. This data was collected as part of the NMFS weighout system prior to May 1, 1994.

Days-at-sea (DAS): the time allocated by an FMP to vessels on which the vessel can exceed any incidental catch limit for the species managed by that FMP .

Demersal species: Most often refers to fish that live on or near the ocean bottom. They are often called benthic fish, groundfish, or bottom fish.

Discards: animals returned to sea after being caught; see Bycatch (n.)

Dissolved nutrients: Non-solid nutrients found in a liquid.

Echinoderms: A member of the Phylum Echinodermata. Marine animals usually characterised by a five-fold symmetry, and possessing an internal skeleton of calcite plates, and a complex water vascular system. Includes echinoids (sea urchins), crinoids (sea lillies) and asteroids (starfish).

Ecosystem-based management: a management approach that takes major ecosystem components and services—both structural and functional—into account, often with a multispecies or habitat perspective

Egg stage: One of several marked phases or periods in the development and growth of many animals. The life history stage of an animal that occurs after reproduction and refers to the developing embryo, its food store, and sometimes jelly or albumen, all surrounded by an outer shell or membrane. Occurs before the *larval* or *juvenile stage*.

Elasmobranch: Any of numerous fishes of the class Chondrichthyes characterized by a cartilaginous skeleton and placoid scales: sharks; rays; skates.

Embayment: A bay or an indentation in a coastline resembling a bay.

Emergent epifauna: See *Epifauna*. Animals living upon the bottom that extend a certain distance above the surface.

Epifauna: See *Benthic infauna*. *Epifauna* are animals that live on the surface of the substrate, and are often associated with surface structures such as rocks, shells, vegetation, or colonies of other animals.

Essential Fish Habitat (EFH): Those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. The EFH designation for most managed species in this region is based on a legal text definition and geographical area that are described in the Habitat Omnibus Amendment (1998).

Estuarine area: The area of an estuary and its margins; an area characterized by environments resulting from the mixing of river and sea water.

Estuary: A water passage where the tide meets a river current; especially an arm of the sea at the lower end of a river; characterized by an environment where the mixing of river and seawater causes marked variations in salinity and temperature in a relatively small area.

Eutrophication: A set of physical, chemical, and biological changes brought about when excessive nutrients are released into the water.

Euphotic zone: The zone in the water column where at least 1% of the incident light at the surface penetrates.

Exclusive Economic Zone (EEZ): a zone, the outer limit of which is 200 nautical miles from the Territorial Sea baseline (usually the shoreline) over which the U.S. government exercises jurisdiction over resources and other maritime activities.

Exempted fisheries: Any fishery determined by the Regional Director to have less than 5 percent regulated species as a bycatch (by weight) of total catch according to 50 CFR 648.80(a)(7).

Fathom: A measure of length, containing six feet; the space to which a man can extend his arms; used chiefly in measuring cables, cordage, and the depth of navigable water by soundings.

Fishing mortality (F): A measurement of the rate of removal of fish from a population caused by fishing. This is usually expressed as an instantaneous rate (F) and is the rate at which fish are harvested at any given point in a year. Instantaneous fishing mortality rates can be either fully recruited or biomass weighted. Fishing mortality can also be expressed as an exploitation rate (see exploitation rate) or less commonly, as a conditional rate of fishing mortality (m, fraction of fish removed during the year if no other competing sources of mortality occurred. Lower case m should not be confused with upper case M, the instantaneous rate of natural mortality).

F_{0.1}: a conservative fishing mortality rate calculated as the F associated with 10 percent of the slope at origin of the yield-per-recruit curve.

F_{MAX}: a fishing mortality rate that maximizes yield per recruit. F_{MAX} is less conservative than F_{0.1}.

F_{MSY}: a fishing mortality rate that would produce MSY when the stock biomass is sufficient for producing MSY on a continuing basis.

F_{threshold}: 1) The maximum fishing mortality rate allowed on a stock and used to define overfishing for status determination. Framework 2 established F_{MSY} as the proxy for F_{threshold}. 2) The maximum fishing mortality rate allowed for a given biomass as defined by a control rule.

Fishing effort: the amount of time and fishing power used to harvest fish. Fishing power is a function of gear size, boat size and horsepower.

Framework adjustments: adjustments within a range of measures previously specified in a fishery management plan (FMP). A change usually can be made more quickly and easily by a framework adjustment than through an amendment. For plans developed by the New England Council, the procedure requires at least two Council meetings including at least one public hearing and an evaluation of environmental impacts not already analyzed as part of the FMP.

Furrow: A trench in the earth made by a plow; something that resembles the track of a plow, as a marked narrow depression; a groove with raised edges.

Glacial moraine: A sedimentary feature deposited from glacial ice; characteristically composed of unsorted clay, sand, and gravel. Moraines typically are hummocky or ridge-shaped and are located along the sides and at the fronts of glaciers.

Glacial till: Unsorted sediment (clay, sand, and gravel mixtures) deposited from glacial ice.

Grain size: the size of individual sediment particles that form a sediment deposit; particles are separated into size classes (e.g. very fine sand, fine sand, medium sand, among others); the classes are combined into broader categories of mud, sand, and gravel; a sediment deposit can be composed of few to many different grain sizes.

Halocline: The zone of the ocean in which salinity increases rapidly with depth.

Habitat complexity: Describes or measures a habitat in terms of the variability of its characteristics and its functions, which can be biological, geological, or physical in nature. Refers to how complex the physical structure of the habitat is. A bottom habitat with *structure-forming organisms*, along with other three dimensional objects such as boulders, is more complex than a flat, featureless, bottom.

Hydroids: Generally, animals of the Phylum Cnidaria, Class Hydrozoa; most hydroids are bush-like polyps growing on the bottom and feed on plankton, they reproduce asexually and sexually.

Immobile epifaunal species: See *epifauna*. Animals living on the surface of the bottom substrate that, for the most part, remain in one place.

Individual Fishing Quota (IFQ): federal permit under a limited access system to harvest a quantity of fish, expressed by a unit or units representing a percentage of the total allowable catch of a fishery that may be received or held for exclusive use by an individual person or entity

Juvenile stage: One of several marked phases or periods in the development and growth of many animals. The life history stage of an animal that comes between the *egg* or *larval stage* and the *adult stage*; juveniles are considered immature in the sense that they are not yet capable of reproducing, yet they differ from the larval stage because they look like smaller versions of the adults.

Landings: The portion of the catch that is harvested for personal use or sold.

Land runoff: The part of precipitation, snowmelt, or irrigation water that reaches streams (and thence the sea) by flowing over the ground, or the portion of rain or snow that does not percolate into the ground and is discharged into streams instead.

Larvae (or Larval) stage: One of several marked phases or periods in the development and growth of many animals. The first stage of development after hatching from the *egg* for many fish and invertebrates. This life stage looks fundamentally different than the juvenile and adult stages, and is incapable of reproduction; it must undergo metamorphosis into the juvenile or adult shape or form.

Limited-access permits: permits issued to vessels that met certain qualification criteria by a specified date (the "control date").

Macrobenthos: See *Benthic community* and *Benthic infauna*. Benthic organisms whose shortest dimension is greater than or equal to 0.5 mm.

Megafaunal species: The component of the fauna of a region that comprises the larger animals, sometimes defined as those weighing more than 100 pounds.

Mesh selectivity ogive: A mathematical model used to describe the selectivity of a mesh size (proportion of fish at a specific length retained by mesh) for the entire population. L_{25} is the length where 25% of the fish encountered are retained by the mesh. L_{50} is the length where 50% of the fish encountered are retained by the mesh.

Meter: A measure of length, equal to 39.37 English inches, the standard of linear measure in the metric system of weights and measures. It was intended to be, and is very nearly, the ten millionth part of the distance from the equator to the north pole, as ascertained by actual measurement of an arc of a meridian.

Metric ton: A unit of weight equal to a thousand kilograms (1kgs = 2.2 lbs.). A metric ton is equivalent to 2,205 lbs. A thousand metric tons is equivalent to 2.2 million lbs.

Microalgal: Small microscopic types of algae such as the green algae.

Microbial: Microbial means of or relating to microorganisms.

Mobile organisms: organisms that are not confined or attached to one area or place, that can move on their own, are capable of movement, or are moved (often passively) by the action of the physical environment (waves, currents, etc.).

Molluscs: Common term for animals of the phylum Mollusca. Includes groups such as the bivalves (mussels, oysters etc.), cephalopods (squid, octopus etc.) and gastropods (abalone, snails). Over 80,000 species in total with fossils back to the Cambrian period.

Mortality: see Annual total mortality (A), Exploitation rate (u), Fishing mortality (F), Natural mortality (M), and instantaneous total mortality (Z).

Motile: Capable of self-propelled movement. A term that is sometimes used to distinguish between certain types of organisms found in water.

Multispecies: the group of species managed under the Northeast Multispecies Fishery Management Plan. This group includes whiting, red hake and ocean pout plus the regulated species (cod, haddock, pollock, yellowtail flounder, winter flounder, witch flounder, American plaice, windowpane flounder, white hake and redfish).

Mutualism: See *Commensalism*. A symbiotic interaction between two species in which both derive some benefit.

Natural disturbance: A change caused by natural processes; e.g. in the case of the seabed, changes can be caused by the removal or deposition of sediment by currents; such natural processes can be common or rare at a particular site.

Natural mortality: A measurement of the rate of death from all causes other than fishing such as predation, disease, starvation, and pollution. Commonly expressed as an instantaneous rate (M). The rate of natural mortality varies from species to species, but is assumed to be $M=0.2$ for the five critical stocks. The natural mortality rate can also be expressed as a conditional rate (termed n and not additive with competing sources of mortality such as fishing) or as annual expectation of natural death (termed v and additive with other annual expectations of death).

Nearshore area: The area extending outward an indefinite but usually short distance from shore; an area commonly affected by tides and tidal and storm currents, and shoreline processes.

Nematodes: a group of elongated, cylindrical worms belonging to the phylum Nematodea, also called thread-worms or eel-worms. Some non-marine species attack roots or leaves of plants, others are parasites on animals or insects.

Nemertean: Proboscis worms belonging to the phylum Nemertea, and are soft unsegmented marine worms that have a threadlike proboscis and the ability to stretch and contract.

Nemipterids: Fishes of the Family Nemipteridae, the threadfin breams or whiptail breams. Distribution: Tropical and sub-tropical Indo-West Pacific.

Northeast Shelf Ecosystem: The Northeast U.S. Shelf Ecosystem has been described as including the area from the Gulf of Maine south to Cape Hatteras, extending from the coast seaward to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream.

Northwest Atlantic Analysis Area (NAAA): A spatial area developed for analysis purposes only. The boundaries of this the area are within the 500 fathom line to the east, the coastline to the west, the Hague line to the north, and the North Carolina/ South Carolina border to the south. The area is approximately 83,550 square nautical miles, and is used as the denominator in the EFH analysis to determine the percent of sediment, EFH, and biomass contained in an area, as compared to the total NAAA.

Nutrient budgets: An accounting of nutrient inputs to and production by a defined ecosystem (e.g., salt marsh, estuary) versus utilization within and export from the ecosystem.

Observer: any person required or authorized to be carried on a vessel for conservation and management purposes by regulations or permits under this Act

Oligochaetes: See *Polychaetes*. Oligochaetes are worms in the phylum Annelida having bristles borne singly along the length of the body.

Open access: describes a fishery or permit for which there is no qualification criteria to participate. Open-access permits may be issued with restrictions on fishing (for example, the type of gear that may be used or the amount of fish that may be caught).

Opportunistic species: Species that colonize disturbed or polluted sediments. These species are often small, grow rapidly, have short life spans, and produce many offspring.

Optimum Yield (OY): the amount of fish which A) will provide the greatest overall benefit to the nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems; B) is prescribed as such on the basis of the maximum sustainable yield from the fishery, as reduced by any relevant economic, social, or ecological factor; and C) in the case of an overfished fishery, provides for rebuilding to a level consistent with producing the maximum sustainable yield in such fishery

Organic matter: Material of, relating to, or derived from living organisms.

Overfished: A condition defined when stock biomass is below minimum biomass threshold and the probability of successful spawning production is low.

Overfishing: A level or rate of fishing mortality that jeopardizes the long-term capacity of a stock or stock complex to produce MSY on a continuing basis.

Peat bank: A bank feature composed of partially carbonized, decomposed vegetable tissue formed by partial decomposition of various plants in water; may occur along shorelines.

Pelagic gear: Mobile or static fishing gear that is not fixed, and is used within the water column, not on the ocean bottom. Some examples are mid-water trawls and pelagic longlines.

Phytoplankton: Microscopic marine plants (mostly algae and diatoms) which are responsible for most of the photosynthetic activity in the oceans.

Piscivore: A species feeding preferably on fish.

Planktivore: An animal that feeds on plankton.

Polychaetes: Polychaetes are segmented worms in the phylum Annelida. Polychaetes (poly-chaetae = many-setae) differ from other annelids in having many setae (small bristles held in tight bundles) on each segment.

Porosity: The amount of free space in a volume of a material; e.g. the space that is filled by water between sediment particles in a cubic centimeter of seabed sediment.

Pre-recruits: Fish in size or age groups that are not vulnerable to the fishery (including discards).

Prey availability: The availability or accessibility of prey (food) to a predator. Important for growth and survival.

Primary production: The synthesis of organic materials from inorganic substances by photosynthesis.

Recovery time: The period of time required for something (e.g. a habitat) to achieve its former state after being disturbed.

Recruitment: the amount of fish added to the fishery each year due to growth and/or migration into the fishing area. For example, the number of fish that grow to become vulnerable to fishing gear in one year would be the recruitment to the fishery. “Recruitment” also refers to new year classes entering the population (prior to recruiting to the fishery).

Recruitment overfishing: fishing at an exploitation rate that reduces the population biomass to a point where recruitment is substantially reduced.

Regulated groundfish species: cod, haddock, pollock, yellowtail flounder, winter flounder, witch flounder, American plaice, windowpane flounder, white hake and redfish. These species are usually targeted with large-mesh net gear.

Relative exploitation: an index of exploitation derived by dividing landings by trawl survey biomass. This measure does not provide an absolute magnitude of exploitation but allows for general statements about trends in exploitation.

Riverine area: The area of a river and its banks.

Saurids: Fish of the family Scomberesocidae, the sauries or needlefishes. Distribution: tropical and temperate waters.

Scavenging species: An animal that consumes dead organic material.

Sea whips: A coral that forms long flexible structures with few or no branches and is common on Atlantic reefs.

Sea pens: An animal related to corals and sea anemones with a featherlike form.

Sediment: Material deposited by water, wind, or glaciers.

Sediment suspension: The process by which sediments are suspended in water as a result of disturbance.

Sedentary: See *Motile* and *Mobile organisms*. Not moving. Organisms that spend the majority of their lives in one place.

Sedimentary bedforms: Wave-like structures of sediment characterized by crests and troughs that are formed on the seabed or land surface by the erosion, transport, and deposition of particles by water and wind currents; e.g. ripples, dunes.

Sedimentary structures: Structures of sediment formed on the seabed or land surface by the erosion, transport, and deposition of particles by water and wind currents; e.g. ripples, dunes, buildups around boulders, among others.

Sediment types: Major combinations of sediment grain sizes that form a sediment deposit, e.g. mud, sand, gravel, sandy gravel, muddy sand, among others.

Spawning adult stage: See *adult stage*. Adults that are currently producing or depositing eggs.

Spawning stock biomass (SSB): the total weight of fish in a stock that sexually mature, i.e., are old enough to reproduce.

Species assemblage: Several species occurring together in a particular location or region

Species composition: A term relating the relative abundance of one species to another using a common measurement; the proportion (percentage) of various species in relation to the total on a given area.

Species diversity: The number of different species in an area and their relative abundance

Species richness: See *Species diversity*. A measurement or expression of the number of species present in an area; the more species present, the higher the degree of species richness.

Species with vulnerable EFH: If a species was determined to be “highly” or “moderately” vulnerable to bottom tending gears (otter trawls, scallop dredges, or clam dredges) then it was included in the list of species with vulnerable EFH. Currently there are 23 species and life stages that are considered to have vulnerable EFH for this analysis.

Status Determination: A determination of stock status relative to $B_{\text{threshold}}$ (defines overfished) and $F_{\text{threshold}}$ (defines overfishing). A determination of either overfished or overfishing triggers a SFA requirement for rebuilding plan (overfished), ending overfishing (overfishing) or both.

Stock: A grouping of fish usually based on genetic relationship, geographic distribution and movement patterns. A region may have more than one stock of a species (for example, Gulf of Maine cod and Georges Bank cod). A species, subspecies, geographical grouping, or other category of fish capable of management as a unit.

Stock assessment: determining the number (abundance/biomass) and status (life-history characteristics, including age distribution, natural mortality rate, age at maturity, fecundity as a function of age) of individuals in a stock

Structure-forming organisms: Organisms, such as corals, colonial bryozoans, hydroids, sponges, mussel beds, oyster beds, and seagrass that by their presence create a three-dimensional physical structure on the bottom. See *biogenic habitats*.

Submerged aquatic vegetation: Rooted aquatic vegetation, such as seagrasses, that cannot withstand excessive drying and therefore live with their leaves at or below the water surface in shallow areas of estuaries where light can penetrate to the bottom sediments. SAV provides an important habitat for young fish and other aquatic organisms.

Surficial sediment: Sediment forming the sea floor or land surface; thickness of the surficial layer may vary.

Surplus production: Production of new stock biomass defined by recruitment plus somatic growth minus biomass loss due to natural deaths. The rate of surplus production is directly

proportional to stock biomass and its relative distance from the maximum stock size at carrying capacity (K). B_{MSY} is often defined as the biomass that maximizes surplus production rate.

Surplus production models: A family of analytical models used to describe stock dynamics based on catch in weight and CPUE time series (fishery dependent or survey) to construct stock biomass history. These models do not require catch at age information. Model outputs may include stock biomass history, biomass weighted fishing mortality rates, MSY , F_{MSY} , B_{MSY} , K , (maximum population biomass where stock growth and natural deaths are balanced) and r (intrinsic rate of increase).

Survival rate (S): Rate of survival expressed as the fraction of a cohort surviving the a period compared to number alive at the beginning of the period (# survivors at the end of the year / numbers alive at the beginning of the year). Pessimists convert survival rates into annual total mortality rate using the relationship $A=1-S$.

Survival ratio (R/SSB): an index of the survivability from egg to age-of-recruitment. Declining ratios suggest that the survival rate from egg to age-of-recruitment is declining.

TAC: Total allowable catch. This value is calculated by applying a target fishing mortality rate to exploitable biomass.

Ten-minute- “squares” of latitude and longitude (TMS): Are a measure of geographic space. The actual size of a ten-minute-square varies depending on where it is on the surface of the earth, but in general each square is approximately 70-80 square nautical miles in this region. This is the spatial area that EFH designations, biomass data, and some of the effort data have been binned into for analysis purposes in various sections of this document.

Topography: The depiction of the shape and elevation of land and sea floor surfaces.

Total mortality: The rate of mortality from all sources (fishing, natural, pollution) Total mortality can be expressed as an instantaneous rate (called Z and equal to $F + M$) or Annual rate (called A and calculated as the ratio of total deaths in a year divided by number alive at the beginning of the year)

Trophic guild: Trophic is defined as the feeding level within a system that an organism occupies; e.g., predator, herbivore. A guild is defined as a group of species that exploit the same class of environmental resources in a similar way. The trophic guild is a utilitarian concept covering both structure and organization that exists between the structural categories of trophic groups and species.

Turbidity: Relative water clarity; a measurement of the extent to which light passing through water is reduced due to suspended materials.

Vulnerability: In order to evaluate the potential adverse effects of fishing on EFH, the vulnerability of each species EFH was determined. This analysis defines vulnerability as the likelihood that the functional value of EFH would be adversely affected as a result of fishing with different gear types. A number of criteria were considered in the evaluation of the

vulnerability of EFH for each life stage including factors like the function of habitat for shelter, food and/or reproduction.

Yield-per-recruit (YPR): the expected yield (weight) of individual fish calculated for a given fishing mortality rate and exploitation pattern and incorporating the growth characteristics and natural mortality.

Yearclass: also called cohort. Fish that were spawned in the same year. By convention, the “birth date” is set to January 1st and a fish must experience a summer before turning 1. For example, winter flounder that were spawned in February-April 1997 are all part of the 1997 cohort (or year-class). They would be considered age 0 in 1997, age 1 in 1998, etc. A summer flounder spawned in October 1997 would have its birth date set to the following January 1 and would be considered age 0 in 1998, age 1 in 1999, etc.

Zooplankton: See *Phytoplankton*. Small, often microscopic animals that drift in currents. They feed on detritus, phytoplankton, and other zooplankton. They are preyed upon by fish, shellfish, whales, and other zooplankton.

8.2 Regulatory Impact Review

[to be completed for submission document]

8.2.1 Executive Order 12866

8.2.2 Regulatory Flexibility Act

8.3 Endangered Species Act

Section 7 of the Endangered Species Act requires federal agencies conducting, authorizing or funding activities that affect threatened or endangered species to ensure that those effects do not jeopardize the continued existence of listed species. The Councils have concluded that there may be some potential negative impacts to protected species, particularly in the SFMA as a result of decoupling DAS, however, the overall effect of the proposed amendment and the prosecution of the monkfish fishery is not likely to jeopardize any ESA-listed species, or alter or modify any critical habitat, based on the discussion of impacts in this document. The Councils are seeking the concurrence of NMFS in this matter. For further information on the potential impacts of this fishery and the proposed management action on listed species see Sections 5.1.7 and 6.2.3 of this document.

8.4 Marine Mammal Protection Act

The Councils have reviewed the impacts of the Monkfish FMP and this amendment on marine mammals, and have concluded that the management actions proposed are consistent with the provisions of the MMPA are not likely to produce negative impacts beyond the status quo, and will not alter any existing measures to protect the species likely to inhabit the monkfish fishery management unit. For further information on the potential impacts of the fishery, and the proposed management action on marine mammals, see Sections 5.1.7 and 6.2.3 of this document.

8.5 Coastal Zone Management Act

[to be completed for submission document]

8.6 Paperwork Reduction Act

[to be completed for submission document]

8.7 Data Quality Act

The following sections address the requirements of the Data Quality Act pursuant to the Office of Management and Budget Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Disseminated by Federal Agencies (*67 Federal Register* 8451, February 22, 2002).

1. Utility of Information Product:

The intended users of the information contained in Amendment 2 are individuals involved in the monkfish fishery, including fishing vessels, fish dealers, fish processors, and other persons interested in the management of the monkfish fishery. This DSEIS prepared for Amendment 2 provides these individuals with a description of the alternative management measures being proposed for the monkfish fishery, and a comprehensive analysis of the impacts (biological,

social, economic) of those measures. The DSEIS also contains a discussion of the impacts of the proposed management alternatives to essential fish habitat, marine mammals, and protected species. Furthermore, the public will have an opportunity to comment on the measures contained in this DSEIS.

The analysis of impacts contained in Amendment 2 is based on the best and most recent biological, social, and economic information available. Furthermore, the information concerning changes to monkfish management measures is new information that has been developed through a multi-stage process that involved members of the public. Therefore, the information pertaining to management measures contained in Amendment 2 has been improved based on comments from the public, fishing industry, members of both Councils, and NOAA Fisheries.

The media being used in the dissemination of the information contained in Amendment 2 will be publication of a Notice of Availability (NOA) in the Federal Register. This information will be made available through printed publication and on the Internet website for the Northeast Regional Office (NERO) of NOAA Fisheries.

2. Integrity of Information Product:

With respect to integrity, if information is confidential, it is safeguarded pursuant to the Privacy Act and Titles 13, 15, and 22 of the U.S. Code (confidentiality of census, business and financial information). Furthermore, confidential information is also safeguarded under the 'Confidentiality of Information' provisions of the Magnuson-Stevens Fishery Conservation and Management Act; NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics; and 50 CFR 229.11, Confidentiality of Information Collected Under the Marine Mammal Protection Act. Therefore, the information being disseminated in Amendment 2 meets the standard of integrity under the Data Quality Act.

3. Objectivity of Information Product

Amendment 2 falls under the information product category of Natural Resource Plans. This information product meets the applicable objectivity standards as discussed in the following paragraphs.

In preparing an amendment to a FMP, all fishery management councils and NOAA Fisheries must comply with the requirements of the Magnuson-Stevens Act, the National Environmental Policy Act, the Administrative Procedure Act, the Paperwork Reduction Act, the Coastal Zone Management Act (CZMA), the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), the Data Quality Act, and Executive Orders 13132 (Federalism), 12898 (Environmental Justice) and 12866 (Regulatory Planning). The New England and Mid-Atlantic Fishery Management Councils (Councils) have determined that the management measures contained in Amendment 2 are consistent with the National Standards of the Magnuson-Stevens Act, and all other applicable laws.

The Councils have determined that Amendment 2 is compliant with National Standard 2, which states that conservation and management measures shall be based on the best scientific information available. Several sources of data were used in the development of Amendment 2, including the analysis of impacts. These data sources include, but are not limited to, landings data from vessel trip reports, landings data from dealer weighout reports, information concerning DAS usage from the DAS call-in system, and ex-vessel price information. Although there are

some limitations to the data used in the analysis of impacts of management measures, and in the description of the affected environment, these data are considered to be the best available.

The policy choices (i.e., management measures) contained in Amendment 2 are supported by available scientific information. Qualitative discussion is provided in cases where information was unavailable utilizing appropriate proxies and reference points as necessary. Furthermore, all supporting information and analyses utilized in the development of Amendment 2 are properly referenced in this DSEIS. The management measures contained in Amendment 2 are designed to meet the conservation goals and objectives of the FMP, and prevent overfishing and rebuild the monkfish resource while maintaining a sustainable level of monkfish harvest.

The review process for any amendment to an FMP involves the responsible Northeast Regional Office (NERO) of NOAA Fisheries, the Northeast Fisheries Science Center (Center), and NOAA Fisheries Headquarters (Headquarters). The Council review process involves public meetings at which affected stakeholders have opportunity to provide comments on the proposed changes to the FMP. Review by staff at NERO are conducted by those with expertise in fisheries management and policy, habitat conservation, protected species, and compliance with the applicable law. The Center's technical review is conducted by senior level scientists with specialties in population dynamics, stock assessment methods, demersal resources, population biology, and the social sciences. Final approval of Amendment 2 and clearance of the proposed and final rules is conducted by staff at NOAA Fisheries Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget. This review process is standard for any amendment to an FMP, and provides input from individuals having various expertise that were not directly involved in the development of the action. Thus, the review process for any FMP amendment, including Amendment 2, is performed by technically qualified individuals to ensure the action is valid, complete, unbiased, objective and relevant.

8.8 Executive Order 12898 – Environmental Justice

Executive Order (E.O.) 12898 requires that, “to the greatest extent practicable and permitted by law... each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions...” [To be completed for final amendment submission document]