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## **12.0 LIST OF ACRONYMS**

**ACCSP** Atlantic Coastal Cooperative Statistics Program

**ALWTRP** Atlantic Large Whale Take Reduction Plan

**ASMFC** Atlantic States Marine Fisheries Commission

**B** Biomass

**B<sub>0</sub>** Virgin Stock Biomass

**B<sub>MSY</sub>** Biomass at MSY-levels

**CPUE** Catch-Per-Unit-Effort

**DAM** Dynamic Area Management

**DAS** Days at Sea

**DEIS** Draft Environmental Impact Statement

**EA** Environmental Assessment

**EEZ** Exclusive Economic Zone

**EFH** Essential Fish Habitat

**EIS** Environmental Impact Statement

**ESA** Endangered Species Act

**F** Fishing Mortality Rate

**FEIS** Final Environmental Impact Statement

**FMP** Fishery Management Plan

**F<sub>MSY</sub>** Fishing mortality rate at MSY-levels

**FR** Federal Register

**HPTRP** Harbor Porpoise Take Reduction Plan

**IWC** International Whaling Commission

**LOA** Letter Of Authorization

**M** Natural Mortality Rate

**MAFMC** Mid-Atlantic Fishery Management Council

**MEY** Maximum Economic Yield

**MMPA** Marine Mammal Protection Act

**MSY** Maximum Sustainable Yield

**NEFMC** New England Fishery Management Council

**NEFSC** Northeast Fisheries Science Center

**NEPA** National Environmental Policy Act

**NMFS** National Marine Fisheries Service

**NOAA** National Oceanic and Atmospheric Administration

**NSGs** National Standard Guidelines

**OY** Optimum Yield

**PBR** Potential Biological Removal

**PDT** Plan Development Team

**PREE** Preliminary Regulatory Economic Evaluation

**RFA** Regulatory Flexibility Act

**RIR** Regulatory Impact Review

**SAFE** Stock Assessment and Fishery Evaluation

**SAFMC** South Atlantic Fishery Management Council

**SARC** Stock Assessment Review Committee

**SAW** Stock Assessment Workshop

**SFA** Sustainable Fisheries Act

**SIA** Social Impact Assessment

**TAC** Total Allowable Catch

**VTR** Vessel Trip Report

**WO** Weigh Out

## 13.0 GLOSSARY

**Amendment.** A formal change to a fishery management plan (FMP). The Council prepares amendments and submits them to the Secretary of Commerce for review and approval. The Council may also change FMPs through a "framework adjustment " (see below).

**B.** Biomass, measured in terms of total weight, spawning capacity, or other appropriate units of production.

**Biological Reference Points.** Specific values for the variables that describe the state of a fishery system which are used to evaluate its status. Reference points are most often specified in terms of fishing mortality rate and/or spawning stock biomass.

**B<sub>MSY</sub>.** Long term average exploitable biomass that would be achieved if fishing at a constant fishing mortality rate equal to  $F_{MSY}$ . For most stocks,  $B_{MSY}$  is about  $\frac{1}{2}$  of the carrying capacity. Overfishing definition control rules usually call for action when biomass is below  $\frac{1}{4}$  or  $\frac{1}{2}$   $B_{MSY}$ , depending on the species.

**B<sub>target</sub>.** A desirable biomass to maintain fishery stocks. This is usually synonymous with  $B_{MSY}$  or its proxy.

**B<sub>threshold</sub>.** 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<sub>threshold</sub>. A determination of overfished triggers the SFA requirement for a rebuilding plan to achieve B<sub>target</sub> as soon as possible, usually not to exceed 10 years except certain requirements are met. B<sub>threshold</sub> is also known as B<sub>minimum</sub>.

**Bycatch.** Fish that are harvested in a fishery, but which are not sold or kept for personal use. This includes economic discards and regulatory discards. The fish that are being targeted may be bycatch if they are not retained.

**Control rule.** A pre-determined method for determining fishing mortality rates based on the relationship of current stock biomass to a biomass target. The biomass threshold (B<sub>threshold</sub> or B<sub>min</sub>) defines a minimum biomass below which a stock is considered overfished.

**Environmental Impact Statement (EIS).** An analysis of the expected impacts of a fishery management plan (or some other proposed federal action) on the environment and on people, initially prepared as a "Draft" (DEIS) for public comment. After an initial EIS is prepared for a plan, subsequent analyses are called "Supplemental." The Final EIS is referred to as the Final Supplemental Environmental Impact Statement (FSEIS).

**Exclusive Economic Zone (EEZ).** For the purposes of the Magnuson-Stevens Fishery Conservation and Management Act, the area from the seaward boundary of each of the coastal states to 200 nautical miles from the baseline.

**Exempted Fisheries.** Currently, any fishery determined by the Regional Director to have less than a 5% regulated species bycatch, by weight, of total catch according to 50 CFR §648.80 (a)(7).

**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.

**F<sub>MSY</sub>.** A fishing mortality rate that would produce MSY when the stock biomass is sufficient for producing MSY on a continuing basis.

**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.

**F<sub>threshold</sub>**. 1) The maximum fishing mortality rate allowed on a stock and used to define overfishing for status determination. 2) The maximum fishing mortality rate allowed for a given biomass as defined by a control rule.

**Growth overfishing**. Fishing at an exploitation rate or at an age at entry that reduces potential yields from a cohort but does not reduce reproductive output (see recruitment overfishing).

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

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

**MSY**. Maximum sustainable yield. The largest long-term average yield (catch) that can be taken from a stock under prevailing ecological and environmental conditions.

**Overfished**. An overfished stock is one “whose size is sufficiently small that a change in management practices is required in order to achieve an appropriate level and rate of rebuilding.”

**Overfishing**. Overfishing “occurs whenever a stock or stock complex is subjected to a rate or level of fishing mortality that jeopardizes the capacity of a stock or stock complex to produce MSY on a continuing basis.”

**Reference Points**. Values of parameters (ex.,  $B_{MSY}$ ,  $F_{MSY}$ ,  $F_{0.1}$ ) that are useful benchmarks for guiding management decisions. Biological reference points are typically limits that should not be exceeded with significant probability or targets for management.

**Status Determination**. A determination of stock status relative to  $B_{threshold}$  (defines overfished) and  $F_{threshold}$  (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 a species 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).

**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).

**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.

**TAC.** Total allowable catch; the total regulated catch from a stock in a given time period, usually one year.

Additional terms are defined in the Glossary in the Skate SAFE Report (Volume II).

## 14.0 REFERENCES

- Agler, B.A., R.L. Schooley, S.E. Frohock, S.K. Katona, and I.E. Seipt. 1993. Reproduction of photographically identified fin whales (*Balaenoptera physalus*) from the Gulf of Maine. *Journal of Mammology* 74: 577-587.
- Aguilar, R., J. Mas, and X. Pastor. 1995. Impact of the Spanish swordfish longline fisheries on the loggerhead sea turtle (*Caretta caretta*) population in the western Mediterranean. NOAA Tech. Memo. NMFS-SEFSC-361: 1-6. Washington, D.C.: U.S. Department of Commerce.
- Aguirre International. October 1996. An Appraisal of the Social and Cultural Aspects of the Multispecies Groundfish Fishery in New England and the Mid-Atlantic Regions. Submitted to NOAA under Contract Number 50-DGNF-5-00008. 141 pp.
- Barlow, J. and P. J. Clapham. 1997. A new birth-interval approach to estimating demographic parameters of humpback whales. *Ecology* 78: 535-546.
- Barnette, M.C. 2001. A review of the fishing gear utilized within the Southeast Region and their potential impacts on essential fish habitat. NOAA Technical Memorandum NMFS-SEFSC-449, 62pp.
- Barrow, C.J. 1997. Environmental and Social Impact Assessment: An Introduction. London: Arnold/Hodder Headline. x + 297 pp.
- Baum, E. 1997. Maine Atlantic Salmon, A National Treasure. Hermon, Maine: Atlantic Salmon Unlimited. 224 pp.
- Berube, M. and A. Aguilar. 1998. A new hybrid between a blue whale, *Balaenoptera musculus*, and a fin whale, *B. physalus*: frequency and implications of hybridization. *Mar. Mamm. Sci.* 14: 82-98.

- Bigelow, H.B. and W.C. Schroeder. 1953. Fishes of the Gulf of Maine. U.S. Fish Wildl. Serv., Fish.Bull. 53: 577 p.
- Bjorndal, K.A. 1997. Foraging ecology and nutrition of sea turtles. 199-233. In P.L. Lutz and J.A. Musick, eds., The Biology of Sea Turtles. New York: CRC Press. 432 pp.
- Blaylock, R.A., J.W. Hain, L.J. Hansen, D.L. Palka, and G.T. Waring. 1995. U.S. Atlantic and Gulf of Mexico marine mammal stock assessments. NOAA Tech. Memo. NMFS-SEFSC-363: 211 pp. Washington, D.C.: U.S. Department of Commerce.
- Bolten, A.B., K.A. Bjorndal, and H.R. Martins. 1994. Life history model for the loggerhead sea turtle (*Caretta caretta*) populations in the Atlantic: potential impacts of a longline fishery. NOAA Tech. Memo. NMFS-SEFSC-201: 48-55. Washington, D.C.: U.S. Department of Commerce.
- Burdge, R.J. 1998. A Conceptual Approach to Social Impact Assessment (Revised Edition). Madison, WI: Social Ecology Press. vi + 281 pp.
- Caswell, H., M. Fujiwara, and S. Brault. 1999. Declining survival probability threatens the North Atlantic right whale. Proc. Nat. Acad. Sci. 96: 3308-3313.
- Cetacean and Turtle Assessment Program. 1982. Final report of the cetacean and turtle assessment program. University of Rhode Island. Submitted to Bureau of Land Management. Ref. No. AA551-CT8-48: 568 pp. Washington, D.C.: U.S. Department of the Interior.
- Clapham, P.J., ed. 1999. Predicting right whale distribution: report of the workshop held on October 1-2, 1998 in Woods Hole, Massachusetts. Northeast Fisheries Science Center Reference Document 99-11: 44 pp.
- Clark, C.W. 1995. Application of U.S. Navy underwater hydrophone arrays for scientific research on whales. Rep. Int. Whal. Comm. 45: 210-212.
- Clarke, R. 1954. Open boat whaling in the Azores: the history and present methods of a relic history. Discovery Rep. 26: 281-354.
- Collie, J.S., S.J. Hall, M.J. Kaiser and I.R. Poiner. 2000. A quantitative analysis of fishing impacts on shelf-sea benthos. Journal of Animal Ecology 69:785-798.
- Crouse, D.T. 1999. The consequences of delayed maturity in a human-dominated world. American Fisheries Society Symposium 23: 195-202.
- Cutler, E.B. and K. Doble. 1979. North Carolina continental slope zoogeographical barrier. Deep-Sea Research 26: 851-853.



- DeAlteris, J.T., L. Scrobe and C. Lipsky. 1999. The significance of seabed disturbance by mobile fishing gear relative to natural processes: a case study in Narragansett Bay, Rhode Island. Pages 224-237 in L.R. Benaka (ed.). *Fish Habitat: essential fish habitat and rehabilitation*. American Fisheries Society, Symposium 22. Bethesda, Maryland.
- Eckert, S.A., D.W. Nellis, K.L. Eckert, and G.L. Kooyman. 1996. Diving patterns of two leatherback sea turtles (*Demochelys coriacea*) during interesting intervals at Sandy Point, St. Croix, U.S. Virgin Islands. *Herpetologica*. Sep. 42(3): 381-388.
- Ehrhart, L.M. 1979. A survey of marine turtle nesting at Kennedy Space Center, Cape Canaveral Air Force Station, North Brevard County, Florida. Unpublished report to the Div. of Mar. Fish. St. Petersburg, FL: Flor. Dept. of Nat. Res. 1-122.
- Epperly, S.P., J. Braun, A.J. Chester, F.A. Cross, J. Merriner, and P.A. Teater. 1995. Winter distribution of sea turtles in the vicinity of Cape Hatteras and their interactions with the summer flounder trawl fishery. *Bull. Mar. Sci.* 56(2): 519-540.
- Ernst, C.H. and R.W. Barbour. 1972. *Turtles of the United States*. Lexington: Univ. Press of Kentucky. 347 pp.
- Goff, G.P. and J. Lien. 1988. Atlantic leatherback turtle (*Dermochelys coriacea*) in cold water off Newfoundland and Labrador. *Can. Field Nat.* 102(1): 1-5.
- Hain, J. H. W. 1975. The international regulation of whaling. *Marine Affairs Journal* 3: 28-48.
- Hain, J.H.W., M.J. Ratnaswamy, R.D. Kenney, and H.E. Winn. 1992. The fin whale (*Balaenoptera physalus*) in waters of the northeastern United States continental shelf. *Rep. Int. Whal. Comm.* 42: 653-669.
- Hall-Arber, Madeleine, Christopher Dyer, John Poggie, James McNally and Renee Gagne. 2001. Fishing communities and fishing dependency in the Northeast Region of the United States. MARFIN Project Final Report to National Marine Fisheries Service. 429 pp.
- Hamilton, P.K. and C.A. Mayo. 1990. Population characteristics of right whales (*Eubalaena glacialis*) observed in Cape Cod and Massachusetts Bays, 1978-1986. *Rep. Int. Whal. Comm.*, Special Issue 12: 203-208.
- Hamilton, P.K., M.K. Marx, and S.D. Kraus. 1998. Scarification analysis of North Atlantic right whales (*Eubalaena glacialis*) as a method of assessing human impacts. Final report to the Northeast Fisheries Science Center, NMFS. Contract No. 4EANF-6-0004.
- Hildebrand, H. 1963. Hallazgo del are de anidacion de la tortuga "lora" *Lepidochelys kempii* (Garman), en la costa occidental del Golfo de Mexico (Rept. Chel.). *Ciencia Mex.* 22(4): 105-112.

- IWC. 1971. Report of the special meeting on sperm whale biology and stock assessments. Rep. Int. Whal. Comm. 21: 40-50.
- IWC. 1992. Report of the comprehensive assessment special meeting on North Atlantic fin whales. Rep. Int. Whal. Comm. 42: 595-644.
- Katona, S.K. and J.A. Beard. 1990. Population size, migrations, and feeding aggregations of the humpback whale (*Megaptera novaeangliae*) in the western North Atlantic ocean. Rep. Int. Whal. Comm., Special Issue 12: 295-306.
- Keinath, J.A., J.A. Musick, and R.A. Byles. 1987. Aspects of the biology of Virginia's sea turtles: 1979-1986. Virginia J. Sci. 38(4): 329-336.
- Kenney, R.D. 2000. Are right whales starving? [Online: web]. Electronic newsletter of the Center for Coastal Studies posted 29 November 2000. URL: <http://www.coastalstudies.org/entanglementupdate/kenney1.html>.
- Kenney, R.D., M.A.M. Hyman, R.E. Owen, G.P. Scott, and H.E. Winn. 1986. Estimation of prey densities required by western North Atlantic right whales. Mar. Mamm. Sci. 2(1): 1-13.
- Kenney, R.D., H.E. Winn, and M.C. Macauley. 1995. Cetaceans in the Great South Channel, 1979-1989: right whale (*Eubalaena glacialis*). Cont. Shelf Res. 15: 385-414.
- Klumov, S.K. 1962. The right whale in the Pacific ocean. In P.I. Usachev, ed., Biological marine studies. Trud. Inst. Okeanogr. 58: 202-297.
- Knowlton, A. R., J. Sigurjonsson, J.N. Ciano, and S.D. Kraus. 1992. Long-distance movements of North Atlantic right whales (*Eubalaena glacialis*). Mar. Mamm. Sci. 8(4): 397-405.
- Knowlton, A.R., S.D. Kraus, and R.D. Kenney. 1994. Reproduction in North Atlantic right whales (*Eubalaena glacialis*). Can. J. Zool. 72: 1297-1305.
- Kraus, S.D. 1990. Rates and potential causes of mortality in North Atlantic right whales (*Eubaleana glacialis*). Mar. Mamm. Sci. 6(4): 278-291.
- Leary, T.R. 1957. A schooling of leatherback turtles (*Dermochelys coriacea*) on the Texas coast. Copeia 1957: 232.
- Leatherwood, S. and R.R. Reeves. 1983. The Sierra Club handbook of whales and dolphins. San Francisco, CA: Sierra Club Books. 302 pp.
- Lutcavage, M. and J.A. Musick. 1985. Aspects of the biology of sea turtles in Virginia. Copeia 1985(2): 449-456.

- Malik, S., M. W. Brown, S.D. Kraus and B. N. White. 2000. Analysis of mitochondrial DNA diversity within and between North and South Atlantic right whales. *Mar. Mammal Sci.* 16: 545-558.
- Mate, B.M., S.L. Niekirk, and S.D. Kraus. 1997. Satellite monitored movements of the North Atlantic right whale. *J. Wildl. Manage.* 61: 1393-1405.
- Mayo, C.A. and M.K. Marx. 1990. Surface foraging behavior of the North Atlantic right whale (*Eubalaena glacialis*) and associated zooplankton characteristics. *Can. J. Zool.* 68: 2214-2220.
- McCay, Bonnie, Belinda Blinkoff, Robbie Blinkoff, and David Bart. December 1993. Fishery Impact Management Project Report, Part 2, Phase I. Report to the Mid-Atlantic Fishery Management Council. Dover, Delaware. 179 pp.
- McCay, Bonnie and Marie Cieri. April 2000. Fishing ports of the mid-Atlantic. Report to the Mid-Atlantic Fishery Management Council. Dover, Delaware. 183 pp.
- Meylan, A., B. Schroeder, and A. Mosier. 1995. Sea turtle nesting activity in the state of Florida. *Fla. Mar. Res. Publ.* 52: 1-51.
- Milton, S.L., S. Leone-Kabler, A.A. Schulman and P.L. Lutz. 1994. Effects of hurricane Andrew on the sea turtle nesting beaches of South Florida. *Bull. Mar. Sci.* 54(3): 974-981.
- Mitchell, E. 1974. Present status of the northwest Atlantic fin and other whale stocks. In W.E. Schevill, ed., *The whale problem: a status report.* Cambridge, MA: Harvard University Press. 108-169.
- Mitchell, E. 1974. Present status of the northwest Atlantic fin and other whale stocks. In W. E. Schevill, ed. *The whale problem: a status report.* Cambridge, MA: Harvard University Press. 108-169.
- Mitchell, E. and D.G. Chapman. 1977. Preliminary assessment of stocks of northwest Atlantic sei whales (*Balaenoptera borealis*). *Rep. Int. Whal. Comm., Special Edition 1:* 117-120.
- Mizroch, S.A. and A.E. York. 1984. Have pregnancy rates of southern hemisphere fin whales (*Balaenoptera physalus*) increased? *Rep. Int. Whal. Comm., Special Issue 6:* 401-410.
- Murison, L.D. and D.E. Gaskin. 1989. The distribution of right whales and zooplankton in the Bay of Fundy, Canada. *Can. J. Zool.* 67: 1411-1420.
- Murphy, T.M. and S.R. Hopkins. 1984. Aerial and ground surveys of marine turtle nesting beaches in the southeast region. U.S. Final Rept. to NMFS-SEFSC. 73pp.

- Musick, J.A. and C.J. Limpus. 1997. Habitat utilization and migration in juvenile sea turtles. In Lutz, P.L. and J.A. Musick, eds., *The Biology of Sea Turtles*. New York: CRC Press. 137-164.
- National Marine Fisheries Service. 1991. Final recovery plan for the humpback whale (*Megaptera novaeangliae*). Prepared by the Humpback Whale Recovery Team for the National Marine Fisheries Service. Silver Spring, Maryland. 105 pp.
- National Marine Fisheries Service. 1991. Final recovery plan for the North Atlantic right whale (*Eubalaena glacialis*). Prepared by the Right Whale Recovery Team for the National Marine Fisheries Service. Silver Spring, Maryland. 86 pp.
- National Marine Fisheries Service. 1998. Recovery plan for the shortnose sturgeon (*Acipenser brevirostrum*). Prepared by the Shortnose Sturgeon Recovery Team for the National Marine Fisheries Service. Silver Spring, Maryland. 104 pages.
- National Marine Fisheries Service. 1998. Draft recovery plans for the fin whale (*Balaenoptera physalus*) and sei whale (*Balaenoptera borealis*). Prepared by R.R. Reeves, G.K. Silber, and P.M. Payne for the National Marine Fisheries Service. Silver Spring, Maryland.
- National Marine Fisheries Service. 1998. Recovery plan for the blue whale (*Balaenoptera musculus*). Prepared by Reeves, R.R., P.J. Clapham, and R.L. Brownell, Jr. for the National Marine Fisheries Service. Silver Spring, Maryland.
- National Marine Fisheries Service. 1999. Final environmental impact statement and regulatory impact review for federal lobster management in the exclusive economic zone. Gloucester, MA: NMFS Northeast Regional Office. 165 pp.
- National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1991. Recovery plan for U.S. population of loggerhead turtle. Washington, D.C.: National Marine Fisheries Service. 64 pp.
- National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1991. Recovery plan for the U.S. population of Atlantic green turtle. Washington, D.C.: National Marine Fisheries Service. 52 p.
- National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1992. Recovery plan for leatherback turtles in the U.S. Caribbean, Atlantic, and Gulf of Mexico. Washington, D.C.: National Marine Fisheries Service. 65 pp.
- National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1992. Recovery plan for the Kemp's Ridley sea turtle (*Lepidochelys kempii*). St. Petersburg, FL: National Marine Fisheries Service. 40 p.

- National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1995. Status reviews for sea turtles listed under the Endangered Species Act of 1973. Silver Spring, MD: National Marine Fisheries Service. 139 pp.
- New England Fishery Management Council. 2001. Stock Assessment and Fishery Evaluation (SAFE) Report for the northeast skate complex. Newburyport, MA: NEFMC.
- New England Fishery Management Council. 2001. Report from groundfish social impact informational meetings. Newburyport, MA: NEFMC.
- New England Fishery Management Council. 2001. Summary statistics for gross revenues and landings of multispecies permit holders since FY 1994. Newburyport, MA: NEFMC.
- NEFMC. 1998. Omnibus Essential Fish Habitat Amendment (Amendment 11 to the Northeast Multispecies FMP, Amendment 9 to the Sea Scallop FMP, Amendment 1 to the Monkfish FMP, Amendment 1 to the Atlantic Salmon FMP, and Sections of the Atlantic Herring FMP).
- NEFMC. 1996. Amendment 7 to the Northeast Multispecies Fishery Management Plan.
- NEFMC. 1994. Amendment 5 to the Northeast Multispecies Fishery Management Plan.
- NEFMC. 1999. Amendment 12 to the Northeast Multispecies FMP.
- Northeast Fisheries Science Center. 2000. 30th Stock Assessment Workshop report. Woods Hole, MA. NMFS-NEFSC Ref.Doc. 00-03.
- NREFHSC (Northeast Region Essential Fish Habitat Steering Committee). 2002. Workshop on the Effects of Fishing Gear on Marine Habitats off the Northeastern United States, October 23-25, 2001, Boston, Massachusetts. *Northeast Fish. Sci. Cent. Ref. Doc.* 02-01; 86pp.
- Ogren, L.H. 1988. Biology and ecology of sea turtles. Prepared for the National Marine Fisheries Service, Panama City Laboratory.
- Payne, P.M., D.N. Wiley, S.B. Young, S. Pittman, P.J. Clapham, and J.W. Jossi. 1990. Recent fluctuations in the abundance of baleen whales in the southern Gulf of Maine in relation to changes in selected prey. *Fish. Bull.* 88(4): 687-696.
- Perry, S.L., D.P. DeMaster, and G.K. Silber. 1999. The sperm whale. In *The great whales: history and status of six species listed as endangered under the U.S. Endangered Species Act of 1973*. *Mar. Fish. Rev.*, Special Edition 61(1): 59-74.
- Pollnac, Richard B. and Littlefield, S.J. 1983. Sociocultural Aspects of Fisheries Management. *Ocean Development and International Law Journal* 12(3-4): 209-246.

- Prescott, R.L. 1988. Leatherbacks in Cape Cod Bay, Massachusetts, 1977-1987. In B.A. Schroeder, Proceedings of the Eighth Annual Workshop on Sea Turtle Conservation and Biology. NOAA Technical Memorandum NMFS-SEFC-214: 83-84.
- Pritchard, P.C.H. 1969. Endangered species: Kemp's ridley turtle. Florida Naturalist 49: 15-19.
- Pritchard, P.C.H. 1982. Nesting of the leatherback turtle (*Dermochelys coriacea*) in Pacific Mexico with a new estimate of the world population status. Copeia 1982: 741-747.
- Rebel, T.P. 1974. Sea turtles and the turtle industry of the West Indies, Florida and the Gulf of Mexico. Coral Gables, FL: Univ. Miami Press.
- Rebel, T.P. 1974. Sea turtles and the turtle industry of the West Indies, Florida and the Gulf of Mexico. Coral Gables, FL: Univ. Miami Press.
- Reeves, R.R. and E. Mitchell. 1988. History of whaling in and near North Carolina. NMFS Tech. Rep. 65: 28 pp.
- Reeves, R.R., Breiwick, J.M., and Mitchell, E. 1992. Pre-exploitation abundance of right whales off the eastern United States. In J. Hain, ed., The right whale in the western North Atlantic: a science and management workshop. 14-15 April 1992. Silver Spring, Maryland: National Marine Fisheries Service. NEFSC Ref. Doc. 92-05: 1-8.
- Richards, A. and L. Hendrickson. In review. Effectiveness of the Nordmore Grate in reducing bycatch in the Gulf of Maine northern shrimp fishery. Fisheries Research.
- Rickmers, A.D. and H.N. Todd. 1967. Statistics: an introduction. New York: McGraw-Hill.
- Robbins, J. and D. Mattila. 1999. Monitoring entanglement scars on the caudal peduncle of Gulf of Maine humpback whales. Report to the National Marine Fisheries Service. Order No. 40EANF800288. 15 pp.
- Rosenbaum, H.C., M.G. Egan, P.J. Clapham, R.L. Brownell Jr., S. Malik, M. Brown, B. White, P. Walsh and R. DeSalle. 2000. Assessing a century of genetic change in North Atlantic right whales (*Eubalaena glacialis*). Cons. Biol.
- Ross, J.P. 1979. Green turtle (*Chelonia mydas*) background paper: summary of the status of sea turtles. Report to WWF/IUCN. 4pp.
- Schaeff, C.M., Kraus, S.D., Brown, M.W., Perkins, J.S., Payne, R., and White, B.N. 1997. Comparison of genetic variability of North and South Atlantic right whales (*Eubalaena*) using DNA fingerprinting. Can. J. Zool. 75: 1073-1080.
- Schevill, W.E., W.A. Watkins, and K.E. Moore. 1986. Status of *Eubalaena glacialis* off Cape Cod. Rep. Int. Whal. Comm., Special Issue 10: 79-82.

- Seipt, I., P.J. Clapham, C.A. Mayo, and M.P. Hawvermale. 1990. Population characteristics of individually identified fin whales (*Balaenoptera physalus*) in Massachusetts Bay. Fish. Bull. 88: 271-278.
- Shoop, C.R. and R.D. Kenney. 1992. Seasonal distributions and abundance of loggerhead and leatherback sea turtles in waters of the northeastern United States. Herpetol. Monogr. 6: 43-67.
- Southeast Fisheries Science Center. 2001. Stock assessments of loggerheads and leatherback sea turtles and an assessment of the impact of the pelagic longline fishery on the loggerhead and leatherback sea turtles of the Western North Atlantic. U.S. Department of Commerce. Miami, FL: National Marine Fisheries Service. SEFSC Contribution PRD-00/01-08 Parts I-III and Appendices I-IV. NOAA Tech. Memo NMFS-SEFSC-455: 343 pp.
- Spotila, J.R., A.E. Dunham, A.J. Leslie, A.C. Steyermark, P.T. Plotkin, and F.V. Paladino. 1996. Worldwide population decline of *Demochelys coriacea*: are leatherback turtles going extinct? Chelonian Conservation and Biology 2(2): 209-222.
- Spotila, J.R., R.D. Reina, A.C. Steyermark, P.T. Plotkin, and F.V. Paladino. 2000. Pacific leatherback turtles face extinction. Nature 405(6786): 529-530.
- Steinback, S.R. and E.M. Thunberg. 2000. A method for analyzing trip limits in northeast fisheries: a case study of the spiny dogfish fishery. Woods Hole, MA: Northeast Fisheries Science Center. Northeast Fisheries Science Center Reference Document 00-06.
- Swingle, W.M., S.G. Barco, T.D. Pitchford, W.A. McLellan and D.A. Pabst. 1993. Appearance of juvenile humpback whales feeding in the nearshore waters of Virginia. Mar. Mammal Sci. 9: 309-315.
- Terwilliger, K. and J.A. Musick. 1995. Management plan for sea turtles and marine mammals in Virginia: final report of the Virginia sea turtle and marine mammal conservation team. Submitted to NOAA. 56 pp.
- Turtle Expert Working Group. 1998. An assessment of the Kemp's ridley (*Lepidochelys kempii*) and loggerhead (*Caretta caretta*) sea turtle populations in the western North Atlantic. NOAA Technical Memorandum NMFS-SEFSC-409. 96 pp.
- Turtle Expert Working Group. 2000. Assessment update for the Kemps ridley and loggerhead sea turtle populations in the western North Atlantic. U.S. Dep. Comm. NOAA Tech. Mem. NMFS-SEFSC-444. 115 pp.
- U.S. Fish and Wildlife Service. 1997. Synopsis of the biological data on the green turtle, *Chelonia mydas*. (Linnaeus 1758.) Washington, D.C.: U.S. Fish and Wildlife Service. Biological Report 97(1). 120 pp.

- Waring, G.T., C.P. Fairfield, C.M. Ruhsam, and M. Sano. 1993. Sperm whales associated with Gulf Stream features off the northeastern U.S. shelf. *Fish. Oceanogr.* 2(2): 101-105.
- Waring, G.T., J.M. Quintal, and S.L. Swartz, eds. 2000. U.S. Atlantic and Gulf of Mexico marine mammal stock assessments, 2000. NOAA Technical Memorandum NMFS-NE-162.
- Waring, G.T., J.M. Quintal, and S.L. Swartz, eds. 2001. Draft U.S. Atlantic and Gulf of Mexico marine mammal stock assessments, 2001. NOAA Technical Memorandum.
- Watkins, W.A. and W.E. Schevill. 1982. Observations of right whales (*Eubalaena glacialis*) in Cape Cod waters. *Fish. Bull.* 80(4): 875-880.
- Watkins, W.A., K.E. Moore, J. Sigurjonsson, D. Wartzok, and G. Notarbartolo di Sciara. 1984. Fin whale (*Balaenoptera physalus*) tracked by radio in the Irminger Sea. *Rit Fiskideildar* 8(1): 1-14.
- Wiley, D.N., R.A. Asmutis, T.D. Pitchford, and D.P. Gannon. 1995. Stranding and mortality of humpback whales (*Megaptera novaengliae*) in the mid-Atlantic and southeast United States, 1985-1992. *Fish. Bull., U.S.* 93: 196-205.
- Winn, H.E., C.A. Price, and P.W. Sorensen. 1986. The distributional biology of the right whale (*Eubalaena glacialis*) in the western North Atlantic. *Rep. Int. Whal. Comm., Special Issue 10*: 129-138.
- Wynne, K. and M. Schwartz. 1999. Guide to marine mammals and turtles of the U.S. Atlantic and Gulf of Mexico. Narragansett, RI: Rhode Island Sea Grant. 115pp.
- Yeung, C. 1999. Estimates of marine mammal and marine turtle bycatch by the U.S. Atlantic pelagic longline fleet in 1998. U.S. Dep. Commer. NOAA Tech. Memo. NMFS-NEFSC-430. 26pp.
- Zug, G. R. and J.F. Parham. 1996. Age and growth in leatherback turtles (*Dermochelys coriacea*): a skeletochronological analysis. *Chelonian Conservation and Biology* 2(2): 244-249.

Additional references are included in the 2000 Skate SAFE Report (Volume II) and the supplemental EFH documents (Volume III).



## 15.0 LIST OF PUBLIC MEETINGS

<b>Date</b>	<b>Meeting</b>	<b>Location</b>
July 17, 2000	Skate PDT	Woods Hole, MA
August 18, 2000	Skate PDT	Woods Hole, MA
September 20, 2000	Skate Oversight Committee	Warwick, RI
September 26-28, 2000	Council	Fairhaven, MA
November 30, 2000	Skate Committee and Advisory Panel	Middletown, RI
January 23-25, 2001	Council	Danvers, MA
January 23, 2001	Skate Scoping Hearing	Danvers, MA
February 2, 2001	Skate Scoping Hearing	Provincetown, MA
February 6, 2001	Skate Scoping Hearing	Wilmington, DE
February 12, 2001	Skate Scoping Hearing	Tiverton, RI
February 26, 2001	Skate PDT	Woods Hole, MA
March 13, 2001	Skate Committee and Advisory Panel	New London, CT
March 14-15, 2001	Council	New London, CT
April 11, 2001	Skate PDT	Pocasset, MA
April 26, 2001	Skate Oversight Committee	Warwick, RI
May 2-3, 2001	Council	Peabody, MA
May 14, 2001	Skate PDT	Pocasset, MA
May 30, 2001	Skate Oversight Committee	Warwick, RI
June 13-14, 2001	Council	Providence, RI
October 16, 2001	Skate PDT	Newburyport, MA
November 5, 2001	Skate Oversight Committee	Danvers, MA
December 19-20, 2001	Council	Danvers, MA
February 25, 2002	Skate Committee and Advisory Panel	Danvers, MA
February 26-27, 2002	Council	Danvers, MA
March 26, 2002	Skate PDT	Mansfield, MA
June 13, 2002	Skate Oversight Committee	Danvers, MA
June 24-26, 2002	Council	Rockport, ME
July 8, 2002	Skate PDT	Mansfield, MA
July 22, 2002	Skate Oversight Committee	Danvers, MA
July 23-25, 2002	Council	Portland, ME
September 16, 2002	Skate Public Hearing	New Bedford, MA

September 17, 2002	Skate Public Hearing	Narragansett, RI
September 20, 2002	Skate Public Hearing	Provincetown, MA
September 23, 2002	Skate Public Hearing	Portsmouth, NH
October 1, 2002	Skate Public Hearing	Wilmington, DE
October 10, 2002	Skate Advisory Panel	Mansfield, MA
October 22, 2002	Skate Oversight Committee	Warwick, RI
November 5-7, 2002	Council	Gloucester, MA
January 28-30, 2003	Council	Portsmouth, NH

Contributions you make to an IRA may be fully or partially deductible, depending on which type of IRA you have and on your circumstances, and. Publication 590A (2015). Generally, amounts in your IRA (including earnings and gains) are not taxed until distributed. You can make these repayment contributions even if they would cause your total contributions to the IRA to be more than the general limit on contributions.

4.0 Environmental Consequences. 5.0 Cumulative Impacts. 6.0 List of Preparers and Contributors. 7.0 References. Appendix A Noise. 3.5.1. Federally and State-Listed Threatened and Endangered Species Potentially Occurring within McLennan and Coryell Counties . 3.7.1. Utilities Suppliers for McGregor Test Site . 11.0 list of preparers. Council Staff. Name Participation. Mr. Mike Burner Principal author, Chapter 6. Ms. Laura Bozzi Contributing author, Chapters 2 and 4. Ms. Carrie Compton Proofing and editing. Dr. Christopher Kit Dahl. Preparers. Principal author, Executive Summary, Chapter 8; coauthor, Chapters 1 and 5. Ms. Kathryn Quigley Contributing author, Chapter 7 and Appendix A. Other Contributors. Name Affiliation Participation. Ms. Mariam McCall NOAA General Counsel Principal reviewer.