

6.0 LIST OF CONTRIBUTORS

The Skate Plan Development Team (PDT) prepared this SAFE Report for the northeast region's skate complex. Members of the Skate PDT include:

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Because fishery-specific information is lacking for skates, the PDT relied heavily on information obtained through discussions and interviews with industry members, including fishermen, dealers, and processors. The information obtained through these interviews helped to characterize the nature of two very different directed skate fisheries (bait and wings), identify important skate markets, and characterize shoreside involvement in the skate fishery. The following list of individuals contributed their knowledge of the skate fishery to the development of this SAFE Report:

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7.0 GLOSSARY OF TERMS

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 procedure" (see below).

Availability – refers to the distribution of fish of different ages or sizes relative to that taken in the fishery.

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_{MSY} – the stock biomass that would produce maximum sustainable yield (MSY) when fished at a level equal to F_{MSY}. For most stocks, B_{MSY} is about ~~1/2~~ of the carrying capacity.

Bycatch (Incidental Catch) – 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.

Catch per Unit of Effort (CPUE) – measures the relative success of fishing operations, but also can be used as a proxy for relative abundance based on the assumption that CPUE is linearly related to stock size.

Council – New England Fishery Management Council (NEFMC).

Days-At-Sea (DAS) – the total days, including steaming time that a boat spends at sea on a trip intended to catch fish.

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).

Exploitation Rate – the percentage of catchable fish killed by fishing every year. If a fish stock has 1,000,000 fish large enough to be caught by fishing gear and 550,000 are killed by fishing during the year, the annual exploitation rate is 55%.

Fishing Effort – the amount of time and fishing power used to harvest fish. Fishing power includes gear size, boat size, and horsepower.

Fishing Mortality (see Mortality)

FMP (Fishery Management Plan) – document that describes a fishery and establishes measures to manage it. This document forms the basis for federal regulations for fisheries managed under the regional Fishery Management Councils. The New England Fishery Management Council prepares FMPs and submits them to the Secretary of Commerce for approval and implementation.

Growth Overfishing – the situation existing when the rate of fishing mortality is above F_{MAX} and then the loss in fish weight due to mortality exceeds the gain in fish weight due to growth.

Limited Access – a management system that limits the number of participants in a fishery. Usually, qualification for this system is based on historic participation, and the participants remain constant over time (with the exception of attrition).

Maximum Sustainable Yield (MSY) – the largest average catch that can be taken from a stock under existing environmental conditions.

Mortality:

Fishing Mortality (F) – (see also exploitation rate) a measurement of the rate of removal of fish from a population by fishing. F is that rate at which fish are harvested at any given point in time. ("Exploitation rate" is an annual rate of removal, "F" is an instantaneous rate.)

$F_{0.1}$ – F at which the increase in yield-per-recruit in weight for an increase in a unit-of effort is only 10% of that produced in an unexploited stock; usually considered a conservative target fishing mortality rate.

F_{MSY} – a fishing mortality rate that would produce the maximum sustainable yield from a stock when the stock biomass is at a level capable of producing MSY on a continuing basis.

F_{MAX} – the fishing mortality rate that produces the maximum level of yield per recruit.
This is the point beyond which growth overfishing begins.

F_{target} – the fishing mortality that management measures are designed to achieve.

Natural Mortality (M) – a measurement of the rate of fish deaths from all causes other than fishing such as predation, cannibalism, disease, starvation, and pollution; the rate of natural mortality may vary from species to species

Total Mortality (Z) – Fishing Mortality + Natural Mortality.

Minimum Biomass Level – the minimum stock size (or biomass) below which there is a significantly lower chance that the stock will produce enough new fish to sustain itself over the long-term. If a stock is at this level, fishing mortality must be reduced to as near zero as possible until the stock rebuilds.

Open Access – describes a fishery or permit for which there is no qualification criteria to participate or obtain. Open access permits may be issued along with restrictions on fishing activities (for example, minimum mesh requirements or possession limits).

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.

Overfished – a measure of stock biomass that is below a threshold level that would provide adequate spawning activity, i.e. the stock's productive capacity.

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.

PDT (Plan Development Team) – a group of technical experts responsible for developing and analyzing management measures under the direction of the Council; the Council has a Skate PDT that meets to discuss the development of this FMP.

Proposed Rule – a federal regulation is usually published in the Federal Register as a proposed rule with a time period for public comment. After the comment period closes, the proposed regulation may be changed or withdrawn before it is published as a final rule, along with its date of implementation and response to comments.

Rebuilding Plan – a plan that must be designed to recover stocks to the B_{MSY} level within ten years when they are overfished.

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 into the fishery.

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.

Spawning Stock Biomass (SSB) – the total weight of fish in a stock that are old enough to reproduce.

Status Determination Criteria – objective and measurable criteria used to determine if overfishing is occurring or if a stock is in an overfished condition according to the National Standard Guidelines.

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.

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

8.0 REFERENCES

The primary reference for this SAFE Report is the SAW 30 document, reporting the results of the 30th Stock Assessment Workshop, in which the northeast skate complex was assessed. The SAW 30 document was finalized and published by the Northeast Fisheries Science Center in April 2000. The SAW 30 document includes a comprehensive list of references, on which this SAFE Report also relied. Only new references that were not cited in SAW 30 are listed below.

Dulvy, Nicholas, Metcalfe, J.D., Glanville, Jamie, Pawson, M.G., and John D. Reynolds. 2000. *Fishery Stability, Local Extinctions, and Shifts in Community Structure in Skates*. Conservation Biology. 14 (1): 283-293

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DFO, 1999. *Updates on Selected Scotian Shelf Groundfish Stocks in 1999*. DFO Sci. Stock Status Report A3-35 (1999).