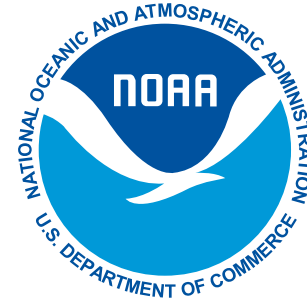


Prepared by:
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
U.S. Department of Commerce



Pursuant to:
National Environmental Policy Act Section 102(2)(C)

Environmental Assessment of the List of Fisheries Under Section 118 of the Marine Mammal Protection Act

December 2005

Abstract

In 1994, Congress amended the MMPA to address the incidental mortality and serious injury (bycatch) of marine mammals in U.S. commercial fisheries. MMPA section 118 established a system for classifying commercial fisheries according to their levels of marine mammal bycatch and created the take reduction plan (TRP) process to reduce that bycatch. The National Marine Fisheries Service (NMFS) is required to reexamine this classification of commercial fisheries, known as the List of Fisheries (LOF), at least annually and publish any changes in the *Federal Register*. This environmental assessment analyzes the process by which NMFS currently classifies U.S. commercial fisheries on the LOF. The preferred alternative, also the no action alternative, proposes to continue the current classification scheme. No significant impacts are anticipated as a result of the proposed action.

EXECUTIVE SUMMARY

Serious injury and mortality of marine mammals incidental to commercial fishing operations (bycatch) is a primary threat to many marine mammal species. In 1994, Congress amended the MMPA to address the incidental mortality and serious injury of marine mammals in U.S. commercial fisheries. MMPA section 118 established a system for classifying commercial fisheries according to their levels of marine mammal bycatch and created the take reduction plan (TRP) process to reduce that bycatch (NMFS 1995b, 1995c). The National Marine Fisheries Service (NMFS) is required to reexamine this classification of commercial fisheries, known as the List of Fisheries (LOF), at least annually and publish any changes in the *Federal Register* after notice and opportunity for public comment. This environmental assessment (EA) analyzes this fisheries classification process

NMFS has identified Alternative 1, the No Action Alternative as the preferred alternative for the proposed action. Alternative 1 would maintain the status quo, thus not presenting any changes to NMFS' current process for classifying U.S. commercial fisheries on the LOF. NMFS would continue to categorize each commercial fishery based on the two-tiered approach and the current definitions of Category I, II, and III fisheries.

Under the two action alternatives, Alternatives 2a and 2b, NMFS would use an alternate scheme to classify U.S. commercial fisheries according to the level of serious injury and mortality of marine mammals incidental to each fishery. Specifically, NMFS would continue to use a two-tiered, stock specific approach, but would change the definitions of Category II and III fisheries. Therefore, the action alternatives differ in the threshold (5% versus 0.5%) used to differentiate Category II fisheries from Category III fisheries.

Alternative 2a would define a Category II fishery as one that annually incidentally seriously injures or kills a particular stock at levels greater than 5% and less than 50% of that stock's PBR. Therefore, a fishery would be classified in Category III if less than 5% annual mortality and serious injury of a stock occurs incidental to that fishery.

Alternative 2b would define a Category II fishery as one that annually incidentally seriously injures or kills a particular stock at levels greater than 0.5% and less than 50% of that stock's PBR. Therefore, a fishery would be classified in Category III if less than 0.5% annual mortality and serious injury of a stock occurs incidental to that fishery.

Alternative 2a would potentially result in the fewest number of fisheries classified in Category II and therefore, fewer fisheries would potentially be required to reduce bycatch through take reduction planning. Further, if these fisheries were not required to have observer coverage, NMFS's ability to accurately estimate fisheries bycatch would diminish. Alternative 2a would be the least protective of marine mammal stocks and thus not consistent with the objectives of the MMPA.

Alternative 2b would potentially result in the greatest number of fisheries classified in Category II and therefore, more fisheries would potentially be required to reduce bycatch through take reduction planning. Under this conservative approach, Alternative 2b potentially protects the greatest number of marine mammal stocks. However, regardless of the number of fisheries in

Category II, NMFS is limited with respect to how many fisheries could actually be addressed through take reduction planning. Thus, in terms of conservation impacts, Alternative 2b does not differ from the No Action alternative.

Because Alternative 2a would affect the greatest number of fisheries, it would have the largest number of potential, minor, direct and indirect, negative impacts on fishery socioeconomics. Alternative 2b would have the fewest of such impacts, while Alternative 1 would result in no new impacts. Under all alternatives, impacts on fishermen are expected to be minor. Generally, the opportunity costs are lost fishing time and potential income while a take reduction team meets. The opportunity costs to all fishery participants would result from potential take reduction measures, such as time and area closures, that may reduce their fishing effort. Direct costs to fishers would be based on future take reduction plan (TRP) measures. All future TRP measures would be analyzed in subsequent NEPA documents before being finalized. In addition to time and area restrictions as mentioned above, such measures could include gear modification or replacement, which would likely result in direct costs to the fishermen as they would have to alter their gear or purchase new types of gear.

The preferred alternative, Alternative 1, would not result in any significant, adverse impacts on the human environment, including protected marine populations, commercial fisheries, fishermen, or other regulatory programs. None of the alternatives would be likely to adversely affect essential fish habitat or species listed under the Endangered Species Act.

TABLE OF CONTENTS

Executive Summary	ii
Table of Contents	iii
Acronyms and Abbreviations	i
1.0 PURPOSE AND NEED.....	1
1.1 Introduction.....	1
1.2 MMPA Elements Related to the List of Fisheries	1
1.2.1 Stock Assessments	1
1.2.2 Potential Biological Removal Level	3
1.2.3 Zero Mortality Rate Goal.....	3
1.3 Current Fishery Classification Process	4
1.3.1 Requirements for all Commercial Fisheries	5
1.3.1.1 Reporting Requirements	5
1.3.2 Requirements for Category I and II Fisheries.....	5
1.3.2.1 Registration Requirements.....	5
1.3.2.2 Monitoring Requirements	5
1.3.2.3 Take Reduction Planning.....	6
1.4 Summary of Purpose and Need.....	7
1.5 Other Environmental Requirements Considered	7
1.5.1 Endangered Species Act	7
1.5.2 Coastal Zone Management Act.....	8
1.5.3 Magnuson-Stevens Fishery Conservation and Management Act	8
1.5.4 Significance Under Executive Order 12866: Regulatory Planning and Review	8
1.5.5 Regulatory Impact Review	9
1.5.6 Regulatory Flexibility Act Analysis	9
2.0 ALTERNATIVES.....	11
2.1 Alternative 1: No Action Alternative (Preferred)	11
2.2 Alternative 2.....	11
2.2.1 Alternative 2a.....	12
2.2.2 Alternative 2b.....	12
2.3 Alternative 3.....	13
3.0 AFFECTED ENVIRONMENT	14
3.1 Status of Protected Marine Populations	14
3.1.1 Marine Mammals	14
3.1.2 Sea Turtles	15
3.1.2.1 Green Turtle	16
3.1.2.2 Hawksbill Turtle	16
3.1.2.3 Kemp’s Ridley Turtle	16
3.1.2.4 Leatherback Turtle	17
3.1.2.5 Loggerhead Turtle.....	17
3.1.2.6 Olive Ridley Turtle	17
3.1.3 Seabirds.....	18
3.1.4 Anadromous and Marine Fishes	18
3.2 Description of U.S. Commercial Fisheries	19
3.1.1 1996-2004 Lists of Fisheries.....	19
3.1.2 2005 Proposed LOF	20
3.3 TRTs and TRPs.....	21

3.3.1	Pacific Offshore Cetacean TRT	22
3.3.2	Gulf of Maine Harbor Porpoise TRT	22
3.3.3	Mid-Atlantic Harbor Porpoise TRT	22
3.3.4	Atlantic Large Whale TRT	22
3.3.5	Bottlenose Dolphin TRT	23
3.3.6	Atlantic Pelagic Longline TRT	23
4.0	ENVIRONMENTAL IMPACTS.....	23
4.1	Impacts on Protected Marine Populations	24
4.1.1	Sea Turtles, Seabirds, Salmonids and Other Protected Fishes.....	24
4.1.2	Marine Mammals	24
4.1.2.1	Alternative 1: No Action (Preferred Alternative)	24
4.1.2.2	Alternative 2a.....	24
4.1.2.3	Alternative 2b.....	25
4.2	Impacts on U.S. Commercial Fisheries.....	26
4.2.1	Alternative 1: No Action (Preferred)	27
4.2.2	Alternative 2a.....	28
4.2.3	Alternative 2b.....	29
4.3	Regulatory Impacts	30
4.3.1	Alternative 1: No Action (Preferred)	30
4.3.1.1	MMPA	30
4.3.1.2	MSA	30
4.3.2	Alternative 2a.....	30
4.3.2.1	MMPA	30
4.3.2.2	MSA	31
4.3.3	Alternative 2b.....	31
4.3.3.1	MMPA	31
4.3.3.2	MSA	31
4.4	Cumulative Impacts	32
4.5	Finding of No Significant Impact	33
5.0	LIST OF PREPARERS.....	Error! Bookmark not defined.
6.0	REFERENCES.....	36

ACRONYMS AND ABBREVIATIONS

BSAI	Bering Sea and Aleutian Islands
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CZMA	Coastal Zone Management Act
EA	Environmental assessment
EFH	Essential fish habitat
EIS	Environmental impact statement
ESA	Endangered Species Act
FMP	Fishery management plan
FONSI	Finding of No Significant Impact
FR	<i>Federal Register</i>
LOF	List of Fisheries
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
N_{\min}	Minimum population estimate
NOAA	National Oceanic and Atmospheric Administration
PBR	Potential biological removal
R_{\max}	Maximum net productivity rate
RFA	Regulatory Flexibility Act
SAR	Stock assessment report
SRG	Scientific review group
T_{ins}	Insignificance threshold
TRP	Take reduction plan
TRT	Take reduction team
USFWS	United States Fish and Wildlife Service
ZMRG	Zero Mortality Rate Goal

1.0 PURPOSE AND NEED

1.1 Introduction

Serious injury and mortality of marine mammals incidental to commercial fishing operations (bycatch) is a primary threat to many marine mammal species. The Marine Mammal Protection Act (MMPA) of 1972 states that marine mammal species and stocks should not be permitted to diminish beyond the point at which they cease to be a significant functioning element in the ecosystem of which they are a part. In 1994, Congress amended the MMPA to address the incidental mortality and serious injury (bycatch) of marine mammals in U.S. commercial fisheries. MMPA section 118 established a system for classifying commercial fisheries according to their levels of marine mammal bycatch and created the take reduction plan (TRP) process to reduce that bycatch (NMFS 1995b, 1995c). The National Marine Fisheries Service (NMFS) is responsible for implementing section 118 of the MMPA. NMFS is required to reexamine this classification of commercial fisheries, known as the List of Fisheries (LOF), at least annually and publish any changes in the *Federal Register* after notice and opportunity for public comment.

In 1995, NMFS prepared an environmental assessment (EA) on the proposed regulations to govern interactions between marine mammals and commercial fishing operations, including the fisheries classification scheme, under section 118 of the MMPA (NMFS 1995a). In order to keep our National Environmental Policy Act (NEPA) documents up-to-date, NMFS is preparing a new EA regarding the LOF classification scheme. The scope of this new EA includes the scheme for classifying commercial fisheries on the LOF and any modifications to individual fishery classifications for the next several years. Unless the system is changed in the interim, this EA will serve as the NEPA document for at least the next five years. At that time, it will be reviewed to determine if there are any changes or circumstances warranting revision.

This EA was prepared pursuant to NEPA of 1969, the Council on Environmental Quality's Regulations for Implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and the NOAA environmental review procedures (NOAA 1999). This EA analyzes the environmental impacts of continuing the existing scheme for classifying fisheries on the LOF as well as implementing several alternatives for classifying commercial fisheries under the MMPA. All references are available by request.

1.2 MMPA Elements Related to the List of Fisheries

1.2.1 Stock Assessments

MMPA section 117 requires the Secretary of Commerce, in consultation with the appropriate regional scientific review group, to prepare draft stock assessment reports (SARs) for each marine mammal stock that occurs in U.S. waters. NMFS is responsible for preparing SARs, using the best available scientific information. Each SAR must:

- 1) Describe the geographic range, including seasonal and temporal variations, of the affected stock;
- 2) Provide a minimum population estimate, current and maximum net productivity rates, and current population trend;
- 3) Estimate of the annual human-caused mortality and serious injury of the stock by source and, for a strategic stock, other factors that may cause a decline or impede recovery of the stock, including effects on marine mammal habitat and prey;
- 4) Describe commercial fisheries that interact with the stock, specifically:
 - a) The approximate number of vessels actively participating in each fishery,
 - b) The estimated level of incidental mortality and serious injury of the stock by each fishery on an annual basis,
 - c) Seasonal or area differences in such incidental mortality or serious injury, and
 - d) The rate, based on fishing effort, of such mortality and serious injury, and an analysis of whether this rate is insignificant and approaching zero;
- 5) Categorize the status of the stock as either a strategic stock or one that has a level of human-caused mortality and serious injury that is not likely to reduce the stock below its optimum sustainable population; and
- 6) Estimate the potential biological removal (PBR) level for each stock.

NMFS received one comment on the draft EA related to elements found in SARs. The commenter believes this EA is deficient because it only focuses on the thresholds for categorizing fisheries. The commenter feels the EA should consider how minimum population estimates (Nmin) and recovery factors (Rf) are defined as well as how serious injuries or mortalities are assigned to a particular marine mammal stock.

Nmin and the Rf, while related to the LOF classification scheme, are not actually part of the LOF process. Nmin is defined in MMPA section 3(27) as an estimate of the number of animals in a stock that is based on the best available scientific information on abundance, incorporating the precision and variability associated with such information and provides reasonable assurance that the stock size is equal to or greater than the estimate. Nmin is one component of the equation used to calculate PBR for a particular marine mammal stock. PBR is also defined in MMPA section 3(20). A recovery factor of between 0.1 and 1.0 is included in the PBR equation.

Pursuant to MMPA section 117, NMFS estimates PBR levels for each marine mammal stock according to the definitions in the MMPA. NMFS reports these PBR levels in individual SARs. Similar to estimating PBR, assigning serious injuries and mortalities to a particular stock also occurs during the stock assessment process. Each SAR is vetted through the appropriate SRG, who in turn reviews the reports based on their scientific expertise. Draft SARs are also available for public comment.

The process for estimating PBR (i.e., establishing Nmin and recovery factors) under MMPA section 117 is a separate process that occurs before such information is used in the process for

classifying fisheries on the LOF under MMPA section 118. This is also true for assigning serious injuries and mortalities to individual stocks. Members of the public who wish to comment on elements of the stock assessment process would need to do so during the comment period on draft SARs. This explanation is also provided in the 2005 final LOF under Comments and Responses.

1.2.2 Potential Biological Removal Level

The MMPA defines the PBR level for a marine mammal stock as the “maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population” (United States Congress 1997). NMFS currently uses PBR as a component in classifying commercial fisheries on the LOF.

Potential Biological Removal (PBR)

For any marine mammal stock,

$$\text{PBR} = N_{\min} * 0.5R_{\max} * F_r$$

where N_{\min} = the minimum population estimate of the stock

R_{\max} = the maximum theoretical or estimated net productivity rate of the stock at a small population size

F_r = a recovery factor of between 0.1 and 1.0

NMFS regulations indicate more specifically how to use the above equation to calculate PBR for marine mammal stocks (50 CFR 229.2). For example, if insufficient data exist to calculate R_{\max} properly for a particular stock, default values are used. For cetaceans, the default R_{\max} is four percent ($0.5R_{\max} = 0.02$). For pinnipeds, the default R_{\max} is 12 percent ($0.5R_{\max} = 0.06$).

Default values of F_r have been assigned according to stock status. For healthy stocks, F_r equals 1.0; for endangered stocks, F_r equals 0.1; and for stocks with a threatened, depleted, or unknown status, F_r equals 0.5. However, flexibility allows for adjustment of the default F_r on a stock-specific basis if ample scientific data exist.

1.2.3 Zero Mortality Rate Goal

In the 1994 MMPA amendments, Congress established a requirement for fisheries to reduce incidental mortality and serious injury of marine mammals to insignificant levels approaching a zero rate. This requirement is known as the Zero Mortality Rate Goal (ZMRG). To implement the ZMRG, NMFS issued a final regulation (NMFS 2004c) that defined a stock’s “insignificance threshold” as 10 percent of the PBR level of a stock of marine mammals. This insignificance threshold is the upper limit of annual incidental mortality and serious injury of marine mammals in commercial fisheries that NMFS considers as insignificant levels approaching a zero mortality and serious injury rate.

1.3 Current Fishery Classification Process

NMFS classifies commercial fisheries on the LOF based on marine mammal bycatch information contained in annual stock assessment reports as well as other sources of new information. Pursuant to MMPA section 118(c)(1)(A), each fishery is classified in one of the three following categories:

- Commercial fisheries with frequent incidental mortality and serious injury of marine mammals.
- Commercial fisheries with occasional incidental mortality and serious injury of marine mammals.
- Commercial fisheries with a remote likelihood of or no known incidental mortality and serious injury of marine mammals.

The delineations for determining the “frequent,” “occasional,” and “remote likelihood of or no known” thresholds are based on a two-tiered approach. Tier 1 assesses cumulative impacts (incidental mortalities and serious injuries of marine mammals due to commercial fishing operations) across all fisheries on a particular stock. If bycatch across all fisheries is less than or equal to ten percent of that stock’s PBR, all fisheries interacting with that stock are classified in Category III for that particular stock. If bycatch across all fisheries is greater than 10% of a stock’s PBR, then the fisheries are subject to Tier 2, which addresses impacts of individual fisheries on each marine mammal stock. According to NMFS’ Tier 2 criteria:

- Category I includes fisheries with incidental mortality and serious injury greater than or equal to 50 percent of the stock’s PBR.
- Category II includes fisheries with incidental mortality and serious injury between one and 50 percent of the stock’s PBR.
- Category III includes fisheries with incidental mortality and serious injury less than or equal to one percent of the stock’s PBR.

While Tier 1 considers the cumulative fishery mortality and serious injury for a particular stock, Tier 2 considers fishery-specific mortality and serious injury for a particular stock. Additional details regarding how the categories were determined are provided in the preambles to the proposed and final rules implementing section 118 of the MMPA (NMFS 1995b, 1995c).

Since fisheries are categorized on a per-stock basis, a fishery may qualify as one Category for one marine mammal stock and another Category for a different marine mammal stock. A fishery is categorized on the LOF at its highest level of classification (e.g., a fishery that qualifies for Category III for one marine mammal stock and for Category II for another marine mammal stock is listed under Category II).

In the absence of available data to determine the frequency of marine mammal incidental takes in a particular commercial fishery, NMFS determines such classifications based on other factors including fishing techniques, gear type, marine mammal deterrent methods, target species, seasons and areas fished, qualitative data from logbooks and fisher reports, stranding data, and marine mammal species and distributions. NMFS does not consider economic factors during the fishery classification process.

1.3.1 Requirements for all Commercial Fisheries

1.3.1.1 Reporting Requirements

In accordance with MMPA section 118(e) and 50 CFR 229.6, any vessel owner or operator, or fisher (in the case of non-vessel fisheries), participating in a Category I, II, or III fishery must report all incidental injuries or mortalities of marine mammals that occur during commercial fishing operations to NMFS. “Injury” is defined in 50 CFR 229.2 as a wound or other physical harm. In addition, any animal that ingests fishing gear or any animal that is released with fishing gear entangling, trailing, or perforating any part of the body is considered injured, regardless of the absence of any wound or other evidence of an injury, and must be reported.

1.3.2 Requirements for Category I and II Fisheries

1.3.2.1 Registration Requirements

Owners of vessels or gear engaging in a Category I or II fishery are required under the MMPA (16 U.S.C. 1387(c)(2)), as described in 50 CFR 229.4, to register with NMFS and obtain a marine mammal authorization from NMFS in order to lawfully incidentally seriously injure or kill a marine mammal during commercial fishing operations. Fishers must pay a \$25 fee to register with the Marine Mammal Authorization Program (MMAP) by contacting the relevant NMFS Regional Office unless they participate in a fishery that has a registration program that has been integrated with another permit program. Upon receipt of a completed registration, NMFS issues vessel or gear owners physical evidence of a current and valid registration that must be displayed or in the possession of the master of each vessel while fishing in accordance with section 118 of the MMPA (16 U.S.C. 1387(c)(3)(A)). For some fisheries, NMFS has integrated the MMPA registration process with existing state and Federal fishery license, registration, or permit systems and related programs. Participants in these fisheries are automatically registered under the MMAP and are not required to submit registration or renewal materials or pay the \$25 registration fee.

1.3.2.2 Monitoring Requirements

MMPA section 118(d) requires NMFS to establish a program to monitor bycatch of marine mammals during the course of commercial fishing operations. The purposes of the observer program include obtaining statistically reliable bycatch estimates, determining the reliability of the reporting requirement, and identifying changes in fishing methods or technologies that may affect bycatch rates.

MMPA section 118(c)(3)(B) requires fishers participating in a Category I or II fishery to accommodate an observer aboard vessel(s) upon request (50 CFR 229.7). Observers provide NMFS with a record of the number and type of marine mammals incidentally killed or seriously injured, species/stocks of marine mammals sighted, and bycatch of other non-target species. Observers may also perform other scientific research, such as sampling and photographing incidental marine mammal mortalities and serious injuries. There is no cost to fishers for MMPA observer coverage requirements.

Because resources for observer coverage are limited, NMFS allocates available funding on an annual basis using the priority scheme set out in MMPA section 118(d)(4) (see below). NMFS balances MMPA monitoring requirements with competing monitoring requirements mandated under the Magnuson-Stevens Act and the Endangered Species Act (ESA).

When determining how best to allocate observers among commercial fisheries, the MMPA identifies the following priorities:

- The highest priority commercial fisheries are those that seriously injure or kill marine mammals listed on the ESA,
- The second highest priority commercial fisheries are those that seriously injure or kill strategic marine mammals, and
- The third highest priority commercial fisheries are those for which the level of incidental mortality and serious injury is uncertain.

1.3.2.3 Take Reduction Planning

For all strategic stocks that interact with Category I or II commercial fisheries, the MMPA requires the formation of a take reduction team (TRT) to prepare a take reduction plan (TRP). TRTs must include a balanced representation of various stakeholders listed under the MMPA. TRPs are designed to prevent further decline and to assist in the recovery of a strategic marine mammal stock that interacts with Category I or II commercial fisheries.

Strategic Stock

A **strategic stock** is a marine mammal stock for which the level of direct human-caused mortality exceeds PBR; which, based on the best available scientific information, is declining and is likely to be listed as a threatened species under the ESA within the foreseeable future; or which is listed as a threatened species or an endangered species under the ESA or is designated as depleted under the MMPA.

NMFS may also convene a TRT and/or develop a TRP for Category I fisheries that have high incidental mortality and serious injury across a number of strategic marine mammal stocks. However, if NMFS has insufficient funds to develop and implement all required TRPs, the MMPA allows NMFS discretion when prioritizing development of TRPs. NMFS may prioritize

based on those marine mammal stocks with incidental mortality and serious injury exceeding PBR, stocks with small population size, and stocks with the highest rate of decline.

The immediate goal of a TRP is to reduce, within six months of implementation, incidental mortality and serious injury of a strategic stock to a level below PBR. The long-term goal of a TRP is to reduce, within five years of implementation, the incidental mortality and serious injury to insignificant levels approaching a zero mortality and serious injury rate, taking into account available technology (such as modified fishing gear and techniques), economic feasibility, and state and regional fishery management plans (FMPs) when designing the TRP's strategy for reducing incidental mortality and serious injury of particular stocks in specific fisheries. NMFS considers the draft TRP submitted by the TRT, develops regulations to implement the plan, allows for public review and comment on the draft plan, and subsequently issues final regulations to implement the plan. NMFS analyzes the potential environmental impacts of a TRP pursuant to NEPA during the development of individual TRPs.

1.4 Summary of Purpose and Need

NMFS is responsible for implementing the MMPA. Section 118 of the MMPA describes regulations concerning incidental taking of marine mammals during commercial fishing operations. The objective of these regulations is to reduce mortality and serious injury of marine mammals incidental to commercial fisheries. Therefore, as a first step, NMFS must classify commercial fisheries according to the level of serious injury and mortality occurring incidental to each U.S. commercial fishery. Subsequently, NMFS may use the LOF as a basis for taking additional actions necessary to reduce serious injury and mortality of marine mammals. For example, NMFS may convene a take reduction team and/or develop a take reduction plan for Category I and II fisheries interacting with strategic stocks. The immediate goal of a TRP is to reduce, within six months of its implementation, serious injury and mortality of strategic marine mammal stocks incidentally taken during commercial fishing operations to levels below PBR. The long-term goal of a TRP, and the ultimate goal of MMPA section 118, is to reduce serious injury and mortality of marine mammals incidental to commercial fisheries to insignificant levels approaching a zero rate, i.e., the ZMRG, taking into account the economics of the fishery, the availability of existing technology, and existing State or regional fishery management plans. This EA analyzes the environmental impacts associated with the process of classifying U.S. commercial fisheries on the LOF and any annual modifications to the LOF. Additional NEPA documents will be prepared for any future TRPs.

1.5 Other Environmental Requirements Considered

Although this EA pertains specifically to the MMPA, the LOF must also be consistent with other applicable laws and regulations, as discussed in the below sections.

1.5.1 Endangered Species Act

The ESA provides broad protection for species of fish, wildlife, and plants that are listed as threatened or endangered in the U.S. or elsewhere. According to the ESA, it is unlawful for any person subject to the jurisdiction of the United States to “take” any such species within the United States or the high seas, without an incidental take statement. The ESA defines “take” as to harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct to species listed as threatened or endangered in 50 CFR 402.12. (See section 3.1)

1.5.2 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) provides assistance to states, in cooperation with Federal and local agencies, for developing land and water use programs for the coastal zone. This includes the protection of natural resources and management of coastal development. A state’s coastal zone management program implements policy pursuant to the CZMA. The proposed action does not affect the land or water uses or natural resources of the coastal zone, as specified under section 307 of the CZMA.

1.5.3 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), enacted to conserve and restore the nation’s fisheries, requires regional fisheries councils to describe and identify essential fish habitat (EFH), defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. Under the MSA, Federal agencies must consult with the Secretary of Commerce regarding any activity, or proposed activity, authorized, funded, or undertaken by the agency that may adversely affect EFH. The MSA also requires FMPs to prevent overfishing and to include conservation and management measures that minimize bycatch and bycatch mortality to the extent practicable. (See section 4.3)

1.5.4 Significance Under Executive Order 12866: Regulatory Planning and Review

In determining that the proposed action of classifying U.S. commercial fisheries on the LOF pursuant to MMPA section 118(c)(1)(C) is insignificant under E.O. 12866, the following criteria were considered. The proposed action does not:

- Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- Create serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in the Executive Order.

NMFS has used the same classification scheme to categorize fisheries and publish the LOF each year since its inception in 1996 as mandated by MMPA section 118(c)(1)(C) and implemented by 50 CFR 229.8.

1.5.5 Regulatory Impact Review

NMFS must categorize each commercial fishery on the LOF into one of three categories under the MMPA based upon the level of serious injury and mortality of marine mammals that occurs incidental to each fishery. The categorization of a fishery on the LOF determines whether participants in the fishery are subject to certain provisions of the MMPA, such as registration, observer coverage, and take reduction plan requirements (see sections 1.1 and 1.3 of this EA). A description of U.S. commercial fisheries is in section 3.2 of this EA. The No Action (preferred) alternative is described in section 2.1 of this EA. Efforts to reduce incidental mortality and serious injury of marine mammals are thought to yield economic benefits associated with the intrinsic value of maintaining large and healthy populations. The only cost of the proposed action is the \$25 registration fee as described below. Approximately 347 vessels are required to pay a total of \$8,675.

1.5.6 Regulatory Flexibility Act Analysis

Under existing regulations, all fishers participating in Category I or II fisheries must register under the MMPA, obtain an Authorization Certificate, and pay a fee of \$25. Additionally, fishers may be subject to a take reduction plan and requested to carry an observer. The Authorization Certificate authorizes the taking of marine mammals incidental to commercial fishing operations. NMFS has estimated that approximately 41,600 fishing vessels, most of which are small entities, operate in Category I or II fisheries, and therefore, are required to register. However, registration has been integrated with existing state or Federal registration programs for the majority of these fisheries so that the majority of fishers do not need to register separately under the MMPA. Currently, approximately 5,800 fishers register directly with NMFS under the MMPA authorization program. However, NMFS has waived the registration fee for many of these fisheries; approximately 347 fishers pay the \$25 fee. Though the LOF may affect a number of small entities, the \$25 registration fee, with respect to anticipated revenues, is not considered a significant economic impact. If a vessel is requested to carry an observer, fishers will not incur any economic costs associated with carrying that observer. As a result of this certification, an initial regulatory flexibility analysis was not prepared. In the event that reclassification of a fishery to Category I or II results in a take reduction plan, economic analyses of the effects of that plan will be summarized in subsequent rulemaking actions.

2.0 ALTERNATIVES

MMPA section 118(c)(1) requires NMFS to classify commercial fisheries according to the following categories:

- I. Frequent incidental mortality and serious injury of marine mammals,
- II. Occasional incidental mortality and serious injury of marine mammals, or
- III. A remote likelihood of or no known incidental mortality and serious injury of marine mammals.

The following alternatives present and discuss different options for further defining categories of fisheries based on their level of marine mammal bycatch.

2.1 Alternative 1: No Action Alternative (Preferred)

NMFS has identified Alternative 1 as the preferred alternative for the proposed action. Alternative 1, the No Action Alternative, would maintain the status quo, thus not presenting any changes to NMFS' current process for classifying U.S. commercial fisheries on the LOF. NMFS would continue to categorize each commercial fishery based on the two-tiered approach and the definitions of Category I, II, and III as detailed in 50 CFR 229.2 and as described in section 1.3 of this EA. Alternative 1 adheres to the MMPA implementing regulations for publication of the List of Fisheries as set forth in 50 CFR 229.8.

Under Alternative 1, NMFS would classify U.S. commercial fisheries according to the following definitions:

Category I: Annual incidental mortality and serious injury of a stock from a given fishery is greater than or equal to 50% of the PBR of that stock.

Category II: Annual incidental mortality and serious injury of a stock from a given fishery is greater than 1% and less than 50% of the PBR of that stock.

Category III: Annual incidental mortality and serious injury of a stock from a given fishery is less than or equal to 1% of the PBR of that stock.

2.2 Alternative 2

Under Alternative 2, NMFS would use an alternate scheme to classify U.S. commercial fisheries according to the level of serious injury and mortality of marine mammals incidental to each fishery. Alternative 2 would require NMFS to change its implementing regulations for classifying U.S. commercial fisheries on the LOF. Promulgating new regulations would require NMFS to change the definitions of Category II and III from the current definitions found in 50 CFR 229.2 and described in section 1.3 of this EA. The rulemaking process generally takes longer than one year. If NMFS were to undertake rulemaking to change the current fisheries classification scheme, NMFS would fail to meet the requirements for publishing an LOF this year as detailed in section 118(c)(1)(C) of the MMPA. NMFS could, however, initiate the

rulemaking process to implement an alternate scheme to classify U.S. commercial fisheries in future LOFs.

Under Alternative 2, the Tier 1 threshold would remain the same, while the Tier 2 threshold would be modified. Specifically, the threshold that separates Category II and Category III fisheries would be changed in both Alternatives 2a (5% of a stock's PBR) and 2b (0.5% of a stock's PBR). Alternative 2 focuses on the thresholds between Categories II and III because any conservation and regulatory impacts would be realized at that level. The threshold between Category I and II fisheries (50% of a stock's PBR) would remain unchanged because the regulatory requirements for Category I and II fisheries are identical. Additionally, the effects of changing Tier 1 thresholds were recently analyzed in an environmental assessment for implementing the ZMRG under MMPA section 118 (NMFS 2004d).

2.2.1 Alternative 2a

Under Alternative 2a, NMFS would classify U.S. commercial fisheries on the LOF according to the following definitions:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 50% of the PBR of that stock.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is greater than 5% and less than 50% of the PBR of that stock.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than or equal to 5% of the PBR of that stock.

NMFS originally considered 5% of PBR as the threshold between Category II and Category III in the 1995 EA on MMPA section 118. However, NMFS decided to reconsider this threshold because the 1995 EA considered serious injury and mortality during a 20-day period rather than the 5-year period that NMFS currently uses for estimating annual serious injury and mortality in the SARs. (NMFS 1995a)

2.2.2 Alternative 2b

Under Alternative 2b, NMFS would classify U.S. commercial fisheries on the LOF according to the following definitions:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 50% of the PBR of that stock.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is greater than 0.5% and less than 50% of the PBR of that stock.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than or equal to 0.5% of the PBR of that stock.

2.3 Alternative 3

Under Alternative 3, NMFS would not classify U.S. commercial fisheries according to the definitions found in 50 CFR 229.2 and section 1.3 of this EA and, therefore, not publish an LOF. This alternative is inconsistent with the MMPA and NMFS' regulations for classifying commercial fisheries and publishing the LOF. Therefore, Alternative 3 is not considered further in this EA.

3.0 AFFECTED ENVIRONMENT

Marine mammal stocks are subject to numerous anthropogenic threats including, but not limited to, fisheries, vessel strikes, marine pollution, and noise. Because the LOF applies only to U.S. commercial fisheries that incidentally take marine mammals, this chapter focuses on the status of protected marine populations and a description of active U.S. commercial fisheries.

3.1 Status of Protected Marine Populations

The following sections discuss the status of marine populations that are protected by the MMPA and/or the ESA.

3.1.1 Marine Mammals

The 2003 SARs (NMFS 2004a, 2004b, 2004e) discuss comprehensively the status of marine mammal populations in U.S. waters. The information presented in the 2003 SARs and in the *Environmental Assessment of Proposed Regulations to Govern Interactions between Marine Mammals and Commercial Fishing Operations, under Section 118 of the Marine Mammal Protection Act* (NMFS 1995a) are incorporated here by reference.

Table 3-1 lists all domestic depleted, threatened, and endangered marine mammal stocks as well as stocks that are candidate species for ESA listing. By definition, “strategic” includes all marine mammal species listed as depleted, threatened, or endangered.

Recovery plans exist for the blue whale (NMFS 1998a), Hawaiian monk seal (NMFS 1983), the humpback whale (NMFS 1991), Northern right whale (NMFS 2005a), and Steller sea lion (NMFS 1992). The recovery plans contain more current information on each species and are available by request.

Also, as required by the MMPA, a Conservation Plan exists for the North Pacific fur seal (NMFS 1993) and is available by request.

**Table 3-1
Domestic Depleted and ESA-listed or ESA-Candidate Marine Mammal Stocks**

Common Name	Scientific Name	Status*
Blue Whale	<i>Balaenoptera musculus</i>	E
Bowhead Whale	<i>Balaena mysticetus</i>	E, D
Caribbean Monk Seal	<i>Monachus tropicalis</i>	E
Coastal Spotted Dolphin	<i>Stenella attenuata graffmani</i>	D
Cook Inlet Beluga Whale	<i>Delphinapterus leucas</i>	D, C
Eastern Spinner Dolphin	<i>Stenella longirostris orientalis</i>	D
Fin Whale	<i>Balaenoptera physalus</i>	E
Guadalupe Fur Seal	<i>Arctocephalus townsendi</i>	T
Hawaiian Monk Seal	<i>Monachus schauinslandi</i>	E, D
Humpback Whale	<i>Megaptera novaeangliae</i>	E
Bottlenose Dolphin (U.S. Mid-Atlantic coastal migratory stock)	<i>Tursiops truncatus</i>	D
Killer Whale (Eastern North Pacific Southern Resident stock)	<i>Orcinus orca</i>	D
Killer Whale (AT1 transient stock)	<i>Orcinus orca</i>	D
North Atlantic Right Whale	<i>Eubalaena glacialis</i>	E
North Pacific Fur Seal	<i>Callorhinus ursinus</i>	D
Northeastern Offshore Spotted Dolphin	<i>Stenella attenuata</i>	D
Northern Sea Otter	<i>Enhydra lutris kenyoni</i>	C
Sei Whale	<i>Balaenoptera borealis</i>	E
Southern Sea Otter**	<i>Enhydra lutris nereis</i>	T
Sperm Whale	<i>Physeter macrocephalus</i>	E
Steller Sea Lion	<i>Eumetopias jubatus</i>	E, T
West Indian Manatee	<i>Trichechus manatus</i>	E

* E = endangered, T = threatened, C = candidate for ESA-listing, D = depleted
** The Southern sea otter, also called the California sea otter, is exempt from MMPA section 118.
Sources: NMFS 2005i, USFWS 2005

3.1.2 Sea Turtles

All six sea turtles that occur in U.S. waters are listed under the ESA (see Table 3-2). NMFS and USFWS have finalized recovery plans between the years of 1991 and 1998 for each species. Entanglement in fishing gear, or bycatch, is a largely unquantified, ongoing problem for sea turtles. NMFS requires modifications to fishing gear (e.g., turtle excluder devices) and time-area closures to help reduce sea turtle bycatch in some commercial fisheries. Habitat loss, egg poaching, marine debris, beach nourishment, and artificial lighting are also common threats to sea turtles.

**Table 3-2
Sea Turtles that Occur in U.S. Waters**

Common Name	Scientific Name	Status*
Green Turtle	<i>Chelonia mydas</i>	E, T**
Hawksbill Turtle	<i>Eretmochelys imbricata</i>	E
Kemp's Ridley Turtle	<i>Lepidochelys kempii</i>	E
Leatherback Turtle	<i>Dermochelys coriacea</i>	E
Loggerhead Turtle	<i>Caretta caretta</i>	T
Olive Ridley Turtle	<i>L. olivacea</i>	E, T**
<small>* E = endangered, T = threatened ** Status assigned according to population Source: NMFS 2005f</small>		

3.1.2.1 Green Turtle

The green turtle is a circumglobal species found in tropical and subtropical waters. Post-hatchling and small juvenile green turtles reside in oceanic waters. Adults are predominantly tropical and spend most of their time in shallow, nearshore areas. However, they are known to undertake long oceanic migrations between nesting and foraging habitats.

All green turtle populations are threatened except the breeding populations off Florida and the Pacific coast of Mexico, which are endangered. Since the 1978 listing, the populations have not improved significantly (NMFS 2005f). The recovery plans for the Atlantic, Pacific, and East Pacific populations of green turtles were finalized in 1991, 1998, and 1998, respectively. These recovery plans contain more detailed information on the species and are available on the internet (NMFS and USFWS 1991a, 1998a, and 1998b).

3.1.2.2 Hawksbill Turtle

Hawksbill sea turtles are found in tropical and subtropical seas of the Atlantic, Pacific, and Indian Oceans. They are found along the continental U.S. coastline from Massachusetts southward, including all of the Gulf coast states; however, sightings north of Florida are rare. Like the green turtle, post-hatchling hawksbills are pelagic, and adults return to a variety of shallow coastal habitats including rocky outcrops, coral reefs, lagoons on oceanic islands, and estuaries.

The hawksbill has been endangered since its 1970 listing on the ESA (NMFS 2005f). The recovery plans for the Atlantic and Pacific populations of hawksbill turtles were finalized in 1993 and 1998, respectively. These recovery plans contain more detailed information on the species and are available on the internet (NMFS and USFWS 1993, 1998c).

3.1.2.3 Kemp's Ridley Turtle

The Kemp's ridley turtle is not as widely distributed as other sea turtle species. Adults are generally restricted to the coastal areas of the Gulf of Mexico and the northwestern Atlantic Ocean. Nesting occurs primarily on a single beach near Rancho Nuevo in the state of

Tamaulipas, which is located on the northeastern coast of Mexico. There are a few additional nests in Texas, Florida, South Carolina, and North Carolina.

The Kemp's ridley turtle has been endangered since its listing on the ESA in 1970. After long periods of decline, the population currently appears either stable or in the early stages of recovery due to protective measures (NMFS 2005f). The Kemp's ridley turtle recovery plan, finalized in 1992, contains more detailed information on the species and is available on the internet (NMFS and USFWS 1992b).

3.1.2.4 Leatherback Turtle

The leatherback is the largest living turtle (NMFS 2005f). Leatherback turtles are distributed worldwide in tropical and temperate waters of the Atlantic, Pacific, and Indian Oceans. Adult leatherbacks are highly migratory and are the most pelagic of all sea turtles. Females are often observed near the edge of the U.S. continental shelf, but do not frequently nest on U.S. beaches.

Leatherbacks were listed on the ESA as endangered in 1970. The recovery plans for the Atlantic and Pacific populations of leatherback turtles were finalized in 1992 and 1998, respectively. These recovery plans contain more detailed information on the species and are available on the internet (NMFS and USFWS 1992a, 1998d).

3.1.2.5 Loggerhead Turtle

Loggerhead turtles are found in tropical, subtropical, and temperate waters throughout the world. The loggerhead is the most abundant sea turtle in U.S. coastal waters. They frequent continental shelves, bays, estuaries, and lagoons. Interactions with fishing gear continue to impede recovery efforts.

Loggerheads were listed as threatened in 1978, and their status has not changed. It appears that the northern nesting aggregation in North Carolina, South Carolina, and Georgia and the Florida panhandle aggregation may be declining while the south Florida nesting aggregation seems stable. The recovery plans for the Atlantic and Pacific populations of loggerhead turtles were finalized in 1991 and 1998, respectively. These recovery plans contain more detailed information on the species and are available on the internet (NMFS and USFWS 1991b, 1998e).

3.1.2.6 Olive Ridley Turtle

Olive ridley turtles are predominantly tropical and generally more abundant in the Atlantic Ocean than in the Pacific Ocean. Olive ridley turtles form huge nesting aggregations (known as "arribadas") at several beaches along the Mexican Pacific coast, with the largest concentration at La Escobilla (NMFS 2005f). In the non-reproductive stages, olive ridleys are migratory and tend to remain in the eastern Pacific pelagic habitats. Distribution is similar to that of the leatherbacks.

In 1978, the Mexican olive ridley turtle nesting population was listed as endangered, while all other populations were listed as threatened. Since the ESA listing, abundance has declined, particularly in the Pacific. The recovery plan for olive ridley turtles, finalized in 1998, contains

more detailed information on the species and is available on the internet (NMFS and USFWS 1998f).

3.1.3 Seabirds

Seabirds are birds whose normal habitat and food source is dependent on the ocean, whether coastal waters, offshore waters, or pelagic waters (Harrison 1983). Birds included in this definition include loons (Gaviiformes), grebes (Podicipediformes), albatrosses, fulmars, prions, petrels, shearwaters, storm-petrels, diving petrels (Procellariiformes), pelicans, boobies, gannets, cormorants, shags, frigatebirds, tropicbirds, anhingas (Pelecaniformes), and shorebirds, skuas, jaegers, gulls, terns, auks, and puffins (Charadriiformes).

Table 3-3 lists the sea birds that are listed under the ESA. The *Environmental Assessment of Proposed Regulations to Govern Interactions between Marine Mammals and Commercial Fishing Operations, under Section 118 of the Marine Mammal Protection Act* (NMFS 1995a) contains much data on sea birds, and is incorporated by reference.

**Table 3-3
U.S. Sea Birds of Concern**

Common Name	Scientific Name	Status*
Brown Pelican	<i>Pelecanus occidentalis</i>	E, R**
California Least Tern	<i>Sterna antillarum browni</i>	E
Hawaiian Dark-rumped Petrel	<i>Pterodroma phaeopygia sandwichensis</i>	E
Hawaiian Stilt	<i>Himantopus mexicanus knudseni</i>	E
Least Tern	<i>Sterna antillarum</i>	E
Newell's Townsend's Shearwater	<i>Puffinus auricularis newelli</i>	T
Roseate Tern	<i>Sterna dougallii dougallii</i>	E, T**
Short-tailed Albatross	<i>Phoebastria albatrus</i>	E
* E = endangered, T = threatened, C = candidate for ESA-listing, R = recovered (delisted) ** Status assigned according to population Source: USFWS 2005		

3.1.4 Anadromous and Marine Fishes

Table 3-4 shows all anadromous and marine fishes that are endangered, threatened, or candidate species for listing under the ESA. There are no catadromous fishes listed or candidates for listing under the ESA.

Recovery plans exist for the shortnose and Gulf sturgeons and are available by request (NMFS 1998b, USFWS and Gulf States Marine Fisheries Commission 1995).

**Table 3-4
Endangered, Threatened, and Candidate Anadromous and Marine Fishes**

Common Name	Scientific Name	Status*
Alabama Shad	<i>Alosa alabamae</i>	C
Atlantic Salmon	<i>Salmo salar</i>	E
Atlantic Sturgeon	<i>Acipenser oxyrinchus oxyrinchus</i>	C
Barndoor Skate	<i>Raja laevis</i>	C
Bocaccio	<i>Sebastes paucispinis</i>	C
Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	E, T, C**
Chum Salmon	<i>Oncorhynchus keta</i>	T
Coho Salmon	<i>Oncorhynchus kisutch</i>	T, C**
Dusky Shark	<i>Carcharhinus obscurus</i>	C
Goliath Grouper	<i>Epinephelus itajara</i>	C
Green Sturgeon	<i>Acipenser medirostris</i>	C
Gulf Sturgeon	<i>Acipenser oxyrinchus desotoi</i>	T
Key Silverside	<i>Menidia conchorum</i>	C
Largetooth Sawfish	<i>Pristis perotteti</i>	C
Mangrove Rivulus	<i>Rivulus marmoratus</i>	C
Nassau Grouper	<i>Epinephelus striatus</i>	C
Night Shark	<i>Carcharhinus signatus</i>	C
Opossum Pipefish	<i>Microphis brachyurus</i>	C
Saltmarsh Topminnow	<i>Fundulus jenkinsi</i>	C
Sandtiger Shark	<i>Odontaspis Taurus</i>	C
Shortnose Sturgeon	<i>Acipenser brevirostrum</i>	E
Smalltooth Sawfish	<i>Pristis pectinata</i>	E
Sockeye Salmon	<i>Oncorhynchus nerka</i>	E, T, C**
Speckled Hind	<i>Epinephelus drummondhayi</i>	C
Steelhead Trout	<i>Oncorhynchus mykiss</i>	E, T, C**
Warsaw Grouper	<i>Epinephelus nigritus</i>	C
White Marlin	<i>Tetrapturus albidus</i>	C
* E = endangered, T = threatened, C = candidate for ESA-listing		
** Status assigned according to population		
Source: NMFS 2005g, 2005h		

3.2 Description of U.S. Commercial Fisheries

The *Environmental Assessment of Proposed Regulations to Govern Interactions between Marine Mammals and Commercial Fishing Operations, under Section 118 of the Marine Mammal Protection Act* (NMFS 1995a) provides substantial information on U.S. commercial fisheries and the information in that EA is incorporated by reference. The 2003 SARs (NMFS 2004a, 2004b, 2004e) and Lists of Fisheries from 1996 through 2004 (NMFS 1995d, 1997, 1998c, 1999, 2000, 2001, 2002, 2003, 2004f) include more recent data and are also incorporated by reference.

3.1.1 1996-2004 Lists of Fisheries

Each year during the fishery classification process, NMFS reviews the SARs and performs the tier analysis on commercial fisheries and marine mammal species/stocks. This is the basis for fishery classification changes in a proposed LOF. The 1996 LOF was the first LOF published after the 1994 amendments to the MMPA, which created section 118 and the current fisheries

classification scheme. In the 1996 LOF, NMFS classified 188 commercial fisheries according to their level of incidental mortality and serious injury: 6 were classified as Category I (frequent interactions) fisheries, 22 were classified as Category II (occasional interactions) fisheries, and 160 were classified as Category III (remote or no likelihood of interactions) fisheries (NMFS 1995d). Since 1996, NMFS has published five LOFs that included changes in fishery classifications; these changes are summarized in Table 3-5. In 2000 and 2002, NMFS published Notices of Continuing Effect of the List of Fisheries to notify the public that the previous year's LOF remained in effect for the current year (NMFS 2000, NMFS 2002).

**Table 3-5
LOF Fishery Classification Changes from 1996-2004**

Year	Fishery Classification Changes
1997	The Gulf of Maine mid-Atlantic lobster trap/pot fishery was reclassified from Category III to Category I. The California squid purse seine fishery was reclassified from Category III to Category II.
1998	None
1999	The Gulf of Mexico menhaden purse seine fishery was reclassified from Category III to Category II.
2000*	<i>None</i>
2001	The Atlantic squid, mackerel, butterfish trawl fishery was reclassified from Category II to Category I. The Atlantic blue crab trap/pot fishery was reclassified from Category III to Category II. The North Carolina inshore gillnet fishery was reclassified from Category III to Category II. The South Atlantic gillnet fishery was reclassified from Category III to Category II.
2002*	None
2003	The California/Oregon thresher shark/swordfish drift gillnet fishery was reclassified from Category I to Category II. The Alaska Cook Inlet salmon set gillnet fishery was reclassified from Category II to Category III. The Gulf of Mexico gillnet fishery was reclassified from Category III to Category II. The Atlantic mixed species trap/pot fishery was reclassified from Category III to Category II.
2004	The Hawaii swordfish, tuna, billfish, mahi mahi, wahoo, and oceanic sharks longline/set line fishery was reclassified from Category III to Category I.
*NMFS issued a Notice of Continuing Effect in 2000 and 2002. Sources: NMFS 1995d, NMFS 1997, NMFS 1998c, NMFS 1999, NMFS 2000, NMFS 2001, NMFS 2002, NMFS 2003, NMFS 2004f	

3.1.2 2005 Proposed LOF

In the 2005 LOF (NMFS 2004i), NMFS has proposed the following classification changes:

- Reclassify the Alaska Bering Sea Aleutian Islands (BSAI) flatfish trawl fishery from Category III to Category II based on interactions with Eastern North Pacific resident and transient stocks of killer whales and the Western stock of Steller sea lions,

- Reclassify the Alaska BSAI Greenland turbot longline fishery from Category III to Category II based on interactions with the Eastern North Pacific resident and transient stocks of killer whales,
- Reclassify the Alaska BSAI pollock trawl fishery from Category III to Category II based on interactions with the Central and Western North Pacific stocks of humpback whales, Eastern North Pacific resident and transient stocks of killer whales, and the Western stock of Steller sea lions,
- Reclassify the Alaska Bering Sea sablefish pot fishery from Category III to Category II based on interactions with the Central and Western North Pacific stocks of humpback whales,
- Reclassify the Alaska Gulf of Alaska Pacific cod longline fishery from Category III to Category II based on interactions with the Eastern North Pacific resident and transient stocks of killer whales,
- Reclassify the Mid-Atlantic bottom trawl fishery (proposed name change from “Mid-Atlantic mixed-species trawl”) from Category III to Category II based on interactions with the Western North Atlantic stocks of common dolphins, long-finned and short-finned pilot whales,
- Reclassify the Northeast bottom trawl fishery (proposed name change from “North Atlantic bottom trawl”) from Category III to Category II based on interactions with Atlantic white-sided dolphins, and
- Reclassify the California/Oregon thresher shark/swordfish drift gillnet fishery from Category II to Category I based on interactions with the California/Oregon/Washington stock of short-finned pilot whales.

The 2005 proposed LOF is incorporated by reference.

3.3 TRTs and TRPs

To date, NMFS has established seven TRTs, six of which are still active: Pacific Offshore Cetacean TRT, Mid-Atlantic Harbor Porpoise TRT, Gulf of Maine Harbor Porpoise TRT, Atlantic Large Whale TRT, Bottlenose Dolphin TRT, and Atlantic Pelagic Longline TRT. NMFS has implemented TRPs for each TRT except the Bottlenose Dolphin and Pelagic Longline TRTs.

NMFS convened the Atlantic Offshore Cetacean TRT in 1996. It was formed to address take reduction of North Atlantic right whales, humpback whales, sperm whales, beaked whales, pilot whales, common dolphins, bottlenose dolphins, and spotted dolphins in the Atlantic pelagic driftnet, pair trawl, and pelagic longline fisheries. Since the TRT was convened in 1996, the driftnet fishery was closed, the pair trawl fishery remained inactive, and the longline fishery changed substantially to reduce other bycatch. NMFS disbanded the TRT in 2001 due to changes in the fisheries represented on the TRT.

NMFS also plans to convene a TRT in 2006 to address incidental mortality and serious injury of marine mammals in Atlantic trawl fisheries. Both the Atlantic trawl TRT and Pelagic Longline TRT are part of an April 2003 settlement agreement (*Center for Biological Diversity et al. v.*

National Marine Fisheries Service, Case No. C-02-3901-SC (N.D. Cal. 2003)). Additional information on currently operating TRTs follows in the next sections. (NMFS 2005e)

3.3.1 Pacific Offshore Cetacean TRT

The Pacific Offshore Cetacean TRT was formed in 1996 to reduce incidental mortality and serious injury of beaked whales, pilot whales, pygmy sperm whales, sperm whales, and humpback whales in the swordfish/shark drift gillnet fishery off the coasts of California and Oregon. The TRP was implemented on October 30, 1997. The plan has three main requirements: pingers must be on all nets, nets must be set at a minimum of 36 feet below the water's surface, and vessel operators must attend educational workshops after notification from NMFS. A modification made on January 1, 1999 requires longer attachment lanyards to increase safety of pinger deployment. (NMFS 2005e)

3.3.2 Gulf of Maine Harbor Porpoise TRT

The Gulf of Maine Harbor Porpoise TRT first met in February 1996 to address incidental mortality and serious injury of harbor porpoise in the Northeast sink gillnet fishery. In December 1997, based on new bycatch and fishery data, NMFS integrated the Mid-Atlantic Harbor Porpoise TRT report and the Gulf of Maine Harbor Porpoise TRT report, resulting in one harbor porpoise TRP for the Atlantic coast. NMFS implemented the harbor porpoise TRP on January 1, 1999. The TRP consists of time and area closures unless gear meets certain specifications, some complete time and area closures that apply to any gillnet fishing, and requirements for pingers on sink gillnets in certain times and areas. (NMFS 2005e)

3.3.3 Mid-Atlantic Harbor Porpoise TRT

The Mid-Atlantic Harbor Porpoise TRT, first convened in February 1997, addressed incidental mortality and serious injury of harbor porpoise in the mid-Atlantic coastal gillnet fishery. In December 1997, based on new bycatch and fishery data, NMFS integrated the Mid-Atlantic Harbor Porpoise TRT report and the Gulf of Maine Harbor Porpoise TRT report, resulting in one harbor porpoise TRP for the Atlantic coast. NMFS implemented the harbor porpoise TRP on January 1, 1999. The TRP consists of time and area closures unless gear meets certain specifications, some complete time and area closures that apply to any gillnet fishing, and gear modification requirements for sink gillnets in certain times and areas. (NMFS 2005e)

3.3.4 Atlantic Large Whale TRT

The Atlantic Large Whale TRT was initially convened in August 1996 to design a TRP to reduce mortality and serious injury of North Atlantic right, humpback, fin, and minke whales in several east coast fisheries, including the Southeastern U.S. shark gillnet fishery, the Northeast/Mid-Atlantic lobster trap/pot fishery, the Mid-Atlantic coastal gillnet fishery, and the Northeast sink gillnet fishery. The TRP became effective in 1997 and has been modified several times since then, most recently in August 2003. The TRP includes gear restrictions, research recommendations, outreach and education recommendations, and a disentanglement program. NMFS has modified the plan to include additional fisheries, gear modifications, and time/area

closures. In light of continued entanglements of North Atlantic right whales, the TRT most recently met in February 2004 to discuss further modifications to the TRP. NMFS has recently prepared a draft environmental impact statement to analyze alternatives for modifying the plan. NMFS published a proposed rule in the *Federal Register* on June 21, 2005. (NMFS 2005c, 2005d)

3.3.5 Bottlenose Dolphin TRT

The Bottlenose Dolphin TRT was convened in November 2001 to address serious injury and mortality of the Western North Atlantic stock of coastal bottlenose dolphins in the Mid-Atlantic and Southeast gillnet, beach seine, stop net, and trap/pot fisheries. The TRT met in April 2003 and submitted recommendations, which NMFS used in preparing a proposed rule. The recommendations include measures to implement temporal restrictions, proximity and gear-marking requirements, gear length restrictions, and gear workshops. The proposed rule published in the *Federal Register* on November 10, 2004. NMFS is currently addressing comments on that rule. (NMFS 2004g, 2004h)

3.3.6 Atlantic Pelagic Longline TRT

The Pelagic Longline TRT was convened in June 2005 to address serious injury and mortality of short-finned and long-finned pilot whales in the mid-Atlantic portion of the Atlantic pelagic longline fishery. The TRT is charged with developing a TRP to reduce bycatch to levels approaching a zero mortality and serious injury rate within 5 years of implementation of the plan. (NMFS 2005b)

4.0 ENVIRONMENTAL IMPACTS

The environmental impacts of all major Federal actions, including agency rules, must be considered prior to implementation to determine whether they would significantly affect the quality of the human environment. This chapter describes the anticipated direct, indirect, and cumulative environmental impacts of the No Action and action alternatives.

This EA analyzes the process for classifying U.S. commercial fisheries according to the level of serious injury and mortality of marine mammals incidental to each fishery and annual modifications to the LOF. The process of classifying fisheries on the LOF does not directly result in regulatory action. NMFS may use the LOF as a basis for taking additional actions necessary to reduce serious injury and mortality of marine mammals. For example, NMFS must convene a take reduction team and/or develop a take reduction plan for Category I and II fisheries interacting with strategic stocks. However, any regulations proposed and implemented through take reduction planning would first undergo a separate environmental impact analysis under NEPA. NMFS would identify specific impacts through the NEPA process according to the provisions of a take reduction plan that would directly affect protected marine populations and U.S. commercial fisheries.

4.1 Impacts on Protected Marine Populations

This section discusses the potential impacts of the alternatives on protected marine populations: sea turtles, seabirds, fishes, and marine mammals.

4.1.1 Sea Turtles, Seabirds, Salmonids and Other Protected Fishes

Under each alternative (Alternatives 1, 2a, and 2b), classifying commercial fisheries could result in minor, indirect, and positive impacts to sea turtles, seabirds, salmonids and other protected fishes. To meet the long-term goal of reducing incidental mortality and serious injury of strategic marine mammal stocks, a specific TRP may require gear modifications, time/area closures, effort reduction, or some other mechanism that may reduce bycatch of other protected marine species as well. In other words, reducing bycatch of marine mammals may also reduce bycatch of other protected marine species that interact with commercial fisheries.

4.1.2 Marine Mammals

4.1.2.1 Alternative 1: No Action (Preferred Alternative)

The No Action alternative would have direct, positive impacts by indicating the need for reducing incidental mortality and serious injury of marine mammals interacting with commercial fisheries. To meet the MMPA's short- and long-term goals of reducing bycatch of marine mammals in commercial fisheries, NMFS may use the LOF for considering which fisheries to address through the take reduction process.

Because the current scheme for classifying fisheries has already been codified and implemented, the conservation benefits of this alternative would be realized immediately. Also, the current scheme is widely accepted by the scientific community and industry.

4.1.2.2 Alternative 2a

Of all the alternatives, Alternative 2a has the fewest positive impacts on the reduction of incidental mortality and serious injury of marine mammals that interact with commercial fisheries. By setting the threshold between Category II and III at 5% of PBR, fewer fisheries would be classified in Category II than under either of the other action alternatives, which set the threshold between Category II and III at 0.5% (Alternative 2b) and 1% (Alternative 1, no action) of PBR. Fewer fisheries classified in Category II may result in fewer fisheries that are potentially subject to take reduction and monitoring requirements for minimizing bycatch. Since NMFS cannot require observer coverage on Category III vessels, and more fisheries would be classified in Category III under Alternative 2a than any other alternative, this alternative could limit NMFS' ability to collect bycatch data on fisheries that may be causing a substantial amount of marine mammal bycatch, thus potentially compromising the accuracy and precision of NMFS' bycatch estimates.

Alternative 2a protects the fewest marine mammal stocks and as such is inconsistent with the findings and policy of the MMPA. MMPA section 2(6) specifies that marine mammals are of

great international significance, esthetic and recreational as well as economic, and should be protected. Further, the MMPA's primary objective of marine mammal management is to maintain the health and stability of the marine ecosystem, while obtaining optimum sustainable populations. Alternative 2a does not provide enough protection across all marine mammal stocks to achieve this objective.

NMFS reviewed commercial fisheries currently on the LOF with available data (e.g., estimated annual fishery mortality and PBR estimates) to determine whether their current classifications would change based on the threshold between Categories II and III in Alternative 2a. As expected, by raising the current threshold from 1% to 5% of PBR, fewer fisheries warrant a Category II classification. For example, the Alaska Bering Sea and Aleutian Islands pollock trawl fishery, currently proposed as a Category II fishery in the 2005 LOF, would be classified in Category III under Alternative 2a. The estimated mean annual fishery mortality of the Western U.S. stock of Steller sea lions in this fishery is 2.51 and PBR is set at 231. Therefore, the fishery's estimated annual mortality is 1.09% of the stock's PBR, which is below the 5% threshold and would thus classify this fishery in Category III under Alternative 2a. Please note that this example only considers one out of five marine mammal stocks that interact with this fishery; NMFS would not reclassify the fishery unless all stocks interacting with the fishery were below the appropriate threshold. Additionally, while this alternative analyzes the effects of changing the definitions of Categories II and III, NMFS would still retain the ability to categorize fisheries based on other relevant factors in the absence of available data (see Section 1.3 of this EA).

There have been instances in Alaska, for example, where more than ten fisheries have seriously injured or killed at least one Steller sea lion over the period of time considered for a particular fisheries' classification. Therefore, the potential exists for at least that many fisheries to seriously injure or kill at levels of 1% or more of that stock's PBR. If the threshold between Category II and III were 5%, the majority of those fisheries would fall into Category III and future data from those fisheries would not be available through observer programs. The resolution of the total mortality from those fisheries, which could collectively exceed 10% of a stock's PBR (Tier 2, the threshold for assessing individual stocks), would not be adequate. In this instance, the total serious injury and mortality from all Category III fisheries that interact with a stock could exceed the total serious injury and mortality of fisheries that are in Category II, when using a threshold of 5% of a stock's PBR. Therefore, Alternative 2a does not adequately consider the cumulative effects of total serious injury and mortality of any one stock.

4.1.2.3 Alternative 2b

NMFS sampled several commercial fisheries currently on the LOF with available data (e.g., estimated annual fishery mortality and PBR estimates) to determine whether their current classifications would change based on a different threshold between Categories II and III. Lowering the current threshold from 1% to 0.5% of PBR theoretically results in more fisheries classified in Category II. However, using the current available information (e.g., estimated annual fishery mortality and PBR estimates), there are no examples of a fishery that would be classified from Category III to Category II when applying a threshold of 0.5% of PBR. For example, there are limited data regarding mortality estimates in Category III fisheries, as NMFS' ability to observe Category III fisheries is limited. It is important to note that while this

alternative analyzes the effects of changing the definitions of Categories II and III, NMFS would still retain the ability to categorize fisheries based on other relevant factors in the absence of available data (see Section 1.3 of this EA). Providing observer coverage to achieve the accuracy and precision that this analysis requires would be very difficult, if not impossible, for some programs to achieve without a very large increase in program resources.

Of all the alternatives, Alternative 2b would seem to have the greatest potential positive impacts on the reduction of incidental mortality and serious injury of marine mammals that interact with commercial fisheries. By setting the threshold between Category II and III at 0.5% of PBR, more fisheries would be classified in Category II than under either of the other action alternatives, which set the threshold between Category II and III at 5% (Alternative 2a) and 1% (Alternative 1, no action) of PBR. More fisheries classified in Category II would result in more fisheries that are subject to take reduction requirements for minimizing bycatch. Therefore, Alternative 2b potentially protects the greatest number of marine mammal stocks.

With potentially more fisheries classified in Category II under this conservative approach, NMFS would require additional resources to reduce bycatch to appropriate levels in a greater number of fisheries. However, when resources are limited, NMFS can exercise discretion regarding which TRTs to convene (see Section 1.3.1.4 of this EA). Therefore, regardless of the number of fisheries in Category II, NMFS is limited with respect to how many fisheries could actually be addressed through take reduction planning. Thus, in terms of conservation impacts, Alternative 2b does not differ from the No Action alternative.

4.2 Impacts on U.S. Commercial Fisheries

This section analyzes the impacts of the action alternatives on active U.S. commercial fisheries.

Some marine mammal stocks do not have available abundance estimates, PBR levels, or annual fishery mortality estimates. This lack of information largely prevents NMFS from analyzing how each individual fishery's classification may change as a result of any alternative. For example, if a fishery interacts with several marine mammal stocks, but PBR and annual fishery mortality estimates are unknown for even one of those stocks, NMFS would not reclassify that fishery unless all stocks interacting with the fishery were below the appropriate thresholds. In these cases where data to determine the frequency of marine mammal bycatch in a particular fishery is unavailable, NMFS may classify commercial fisheries based on other factors including fishing techniques, gear type, marine mammal deterrence methods, target species, seasons and areas fished, qualitative data from logbooks and fisher reports, stranding data, and marine mammal species and distributions.

Under each alternative, all U.S. commercial fishers participating in a Category I, II, or III fishery must report all incidental injuries or mortalities of marine mammals that occur during commercial fishing operations to NMFS within 48 hours of the end of each fishing trip.

Under each alternative, existing TRTs would continue meeting and working through the take reduction process.

4.2.1 Alternative 1: No Action (Preferred)

Under the No Action alternative, the fishery classification scheme would not change, and there would be no new impacts on the process to produce the annual LOF. In addition to the reporting requirement, as stated above and in section 1.3.1 of this EA, U.S. commercial fisheries classified in Category I or II are subject to three requirements: 1) registration, 2) monitoring, and 3) take reduction planning.

The No Action alternative would result in minor, direct, socioeconomic impacts on U.S. commercial fisheries. In the event that a Category III fishery is reclassified as a Category I or II fishery, direct impacts in the form of registration fees could affect fishers if that fishery does not have an integrated registration program (see section 1.3.1.1 of this EA). Based on the 2004 LOF, 7 out of 41 Category I and II fisheries have not been integrated with other registration programs and fishermen participating in these 7 fisheries must pay the one-time registration cost of \$25.

As mentioned above, NMFS may use the LOF as a basis for taking additional actions necessary to reduce serious injury and mortality of marine mammals. Specifically, NMFS may convene a take reduction team and/or develop a take reduction plan for Category I and II fisheries interacting with strategic stocks. Therefore, Category III fisheries reclassified as Category I or II are subject to the take reduction process. At this time, NMFS does not plan to establish a TRT for any of the fisheries proposed for reclassification in the 2005 proposed LOF. If NMFS does convene a TRT for any of these fisheries in the future, there would be direct and indirect, minor, negative socioeconomic impacts on fishers serving on the TRT. The indirect socioeconomic impacts relate to opportunity costs. Opportunity costs to TRT participants directly correlate with the length of the TRT process. Generally, the opportunity costs are lost fishing time and potential income during TRT meetings. Because the MMPA specifies that TRT members serve without compensation, there is no financial support to offset these opportunity costs.

In the future, the opportunity costs to all commercial fishers would result from potential TRP measures, such as time and area closures, that may reduce fishing effort. Direct costs to fishers would be based on potential TRP measures. In addition to time and area restrictions, such measures could include gear modification or replacement, which would likely result in direct costs as fishers alter existing gear or purchase new types of gear. NMFS would analyze the effects of any regulations proposed and implemented through such take reduction planning in a process separate from the actual LOF classification process. NMFS would identify specific impacts through the NEPA process according to the provisions of a TRP that would directly affect U.S. commercial fisheries. Under the No Action alternative, all existing TRTs would continue meeting and working through the take reduction process.

There are no immediate impacts, positive or negative, for fisheries whose classification changes between Categories I and II. As mentioned earlier in this EA, in the absence of sufficient funding to develop and implement TRPs for all strategic stocks interacting with Category I and II fisheries, NMFS may use the LOF for prioritizing development of future TRTs/TRPs. NMFS would consider the extent (i.e., number of stocks, level of serious injury and mortality) of interactions between marine mammals and commercial fisheries while determining which TRTs/TRPs to convene.

4.2.2 Alternative 2a

Alternative 2a would change the fishery classification scheme such that the threshold between Category II and III would be raised from 1% to 5% of PBR. Alternative 2a would require NMFS to change its implementing regulations for classifying U.S. commercial fisheries on the LOF by modifying the definitions of Category II and III fisheries from the current definitions found in 50 CFR 229.2 and described in section 1.3 of this EA. Promulgating new regulations generally takes longer than one year. Therefore, if NMFS were to initiate this process immediately (i.e., before finalizing the 2005 LOF), Alternative 2a would negatively impact the process to produce the annual LOF. However, if NMFS were to modify the scheme for future LOFs (i.e., after finalizing the 2005 LOF), the process for classifying fisheries would remain the same except that NMFS would use a 5% threshold between Category II and III.

As the least conservative alternative, Alternative 2a would result in the fewest number of fisheries classified in Category II. Therefore, Alternative 2a would produce the fewest fisheries required to reduce serious injury and mortality of marine mammals. All requirements for Category I and II fisheries (reporting, monitoring, take reduction planning) would remain the same as the No Action Alternative (preferred).

Under Alternative 2a, 6 out of 7 Category III fisheries proposed for reclassification to Category II in the 2005 LOF would still qualify for inclusion in Category II. In other words, the 6 fisheries (BSAI flatfish trawl, BSAI pollock trawl, BSAI Greenland turbot longline, BSAI Pacific cod longline, Bering Sea sablefish pot, and Mid-Atlantic bottom trawl) exceed 5% of PBR for at least one marine mammal stock seriously injured or killed incidental to the fishery, thus justifying a Category II classification for each of these 6 fisheries under Alternative 2a. While there is currently no annual mortality estimate for the Western North Atlantic stock of white-sided dolphins incidental to the Northeast bottom trawl fishery, observed mortality in 2003 was 3.3% of the stock's PBR. Therefore, under Alternative 2a, NMFS would not reclassify this fishery unless bycatch estimates exceed 5% of the stock's PBR.

Because Alternative 2a would likely result in fewer fisheries being classified in Category II, this alternative would have the fewest potential, direct and indirect, negative socioeconomic impacts on commercial fishers participating on TRTs. The indirect socioeconomic impacts relate to opportunity costs. Opportunity costs to the TRT participants directly correlate with the length of the TRT process. Generally, the opportunity costs are lost fishing time and potential income during TRT meetings. Because the MMPA specifies that TRT members serve without compensation, there is no financial support to offset these opportunity costs. The opportunity costs to all commercial fishers would result from potential TRP measures, such as time and area closures, that may reduce fishing effort. Under Alternative 2a, opportunity costs would be small because fewer fisheries would be subject to the take reduction process than under any other alternative. Direct costs to fishers would be based on future TRP measures. In addition to time and area restrictions as mentioned above, such measures could include gear modification or replacement, which would likely result in direct costs as fishers alter existing gear or purchase new types of gear.

Alternative 2a is likely to have fewer negative socioeconomic impacts on all fishery participants than the other alternatives. However, such results may cause less reduction in incidental mortality and serious injury of marine mammals, which would be a negative ecological impact.

4.2.3 Alternative 2b

Under the Alternative 2b, the fishery classification scheme would change in that the threshold between Category II and III would be lowered from 1% to 0.5% of PBR. Alternative 2b would require NMFS to change its implementing regulations for classifying U.S. commercial fisheries on the LOF by modifying the definitions of Category II and III fisheries from the current definitions found in 50 CFR 229.2 and described in section 1.3 of this EA. Promulgating new regulations generally takes longer than one year. Therefore, if NMFS were to initiate this process immediately (i.e., before finalizing the 2005 LOF), Alternative 2b would negatively impact the process to produce the annual LOF. However, if NMFS were to modify the scheme for future LOFs (i.e., after finalizing the 2005 LOF), the process for classifying fisheries would remain the same except that NMFS would use a 0.5% threshold between Category II and III.

As the most conservative alternative, Alternative 2b would potentially result in the greatest number of fisheries classified in Category II. Therefore, Alternative 2b would result in the greatest number of fisheries required to reduce serious injury and mortality of marine mammals. All requirements for Category I and II fisheries (reporting, monitoring, take reduction planning) would remain the same as the No Action Alternative (preferred).

Because Alternative 2b would likely result in the greatest number of fisheries being classified in Category II, it would have the greatest potential, direct and indirect, negative socioeconomic impacts on commercial fishers serving on TRTs. The indirect socioeconomic impacts relate to opportunity costs. Opportunity costs to the TRT participants directly correlate with the length of the TRT process. Generally, the opportunity costs are lost fishing time and potential income during TRT meetings. Because the MMPA specifies that TRT members serve without compensation, there is no financial support to offset these opportunity costs. The opportunity costs to all commercial fishers would result from potential TRP measures, such as time and area closures, that may reduce fishing effort. Under Alternative 2b, opportunity costs would be greatest because more fisheries would be subject to the take reduction process than under any other alternative.

The costs to all fishers would result from future TRP measures, such as time and area restrictions, gear modification or replacement, which would reduce fishing effort and likely result in direct costs. Such direct costs could include costs to alter existing gear, purchase new types of gear, or fuel to get to new fishing areas. Alternative 2b would impose more potential costs on TRT participants than any other alternative because a greater number of fisheries would be subject to the take reduction process. Thus, Alternative 2b is the most biologically conservative alternative because it would result in the greatest reduction of marine mammal bycatch.

4.3 Regulatory Impacts

This section discusses the regulatory impacts of implementing each alternative with regard to applicable laws, namely the MMPA, ESA, CZMA, MSA, and E.O. 12866. Only the MMPA and the Magnuson-Stevens Act are discussed individually under each alternative.

None of the alternatives are likely to adversely affect ESA-listed species or their critical habitat. ESA-listed species are discussed above in section 4.1. Therefore, no formal section 7 consultation is necessary under any of the alternatives.

4.3.1 Alternative 1: No Action (Preferred)

4.3.1.1 MMPA

Implementing the No Action Alternative would be consistent with the requirements of MMPA section 118 for classifying commercial fisheries and publishing an LOF. Also, Alternative 1 would be consistent with all other sections of the MMPA.

4.3.1.2 MSA

Alternative 1 would have a minor, positive effect on bycatch reduction of species under the jurisdiction of the Magnuson-Stevens Act. Alternative 1 would require NMFS to classify fisheries according to their level of incidental serious injury and mortality of marine mammals as currently described in 50 CFR 229.8. Also, an indirect, positive effect would occur relative to bycatch of species under jurisdiction of the Magnuson-Stevens Act. Bycatch of these species may be further reduced as a result of any future TRP regulations for Category I or II fisheries. It is likely that TRTs would propose gear modifications or other restrictions that would reduce bycatch of other non-target species as a positive side effect of reducing serious injury and mortality of marine mammals.

The No Action Alternative would not affect EFH, and therefore, no formal consultation with the NMFS Office of Habitat Conservation is required. However, it is possible that future TRP provisions would consider possible impacts on EFH. For example, if a take reduction measure shifts fishing effort to a new location that has otherwise been unaffected by fishing operations, such new fishing effort should be analyzed to determine if EFH would be affected. Similarly, future TRP provisions could benefit EFH by, for example, restricting certain types of fishing gear in areas with EFH. If appropriate, NEPA analysis and coordination with the NMFS Office of Habitat Conservation would be conducted for new TRP provisions.

4.3.2 Alternative 2a

4.3.2.1 MMPA

Implementing Alternative 2a after finalizing the 2005 LOF would be consistent with the requirements of MMPA section 118 for classifying commercial fisheries and publishing an LOF. However, implementing Alternative 2a before finalizing the 2005 LOF would be inconsistent

with the MMPA. Implementing Alternative 2a requires NMFS to change the implementing regulations for classifying fisheries on the LOF. The rulemaking process generally takes longer than one year. If NMFS were to undertake rulemaking to change the current fisheries classification scheme, NMFS would fail to meet the requirements for publishing an LOF this year as detailed in MMPA section 118(c)(1)(C). Also, Alternative 2a would be consistent with all other sections of the MMPA.

4.3.2.2 MSA

Compared to the other action alternatives, the minor positive effects on bycatch reduction would be fewest under Alternative 2a because it is the least protective alternative. An indirect, positive effect would occur relative to bycatch of species under jurisdiction of the Magnuson-Stevens Act. Bycatch of these species may be further reduced as a result of any future TRP regulations for Category I or II fisheries. It is likely that TRTs would propose gear modifications or other restrictions that would reduce bycatch of other non-target species as a positive side effect of reducing serious injury and mortality of marine mammals. This indirect, positive effect would be least under Alternative 2a because fewer fisheries would be classified in Category II, and thus, fewer fisheries would be subject to the take reduction process.

Alternative 2a would not affect EFH, and therefore, no formal consultation with the NMFS Office of Habitat Conservation is required. However, it is possible that future TRP provisions would consider possible impacts on EFH. For example, if a take reduction measure shifts fishing effort to a new location that has otherwise been unaffected by fishing operations, such new fishing effort should be analyzed to determine if EFH would be affected. Similarly, future TRP provisions could benefit EFH by, for example, restricting certain types of fishing gear in areas with EFH. If appropriate, NEPA analysis and coordination with the NMFS Office of Habitat Conservation would be conducted for new TRP provisions.

4.3.3 Alternative 2b

4.3.3.1 MMPA

Implementing Alternative 2b after finalizing the 2005 LOF would be consistent with the requirements of MMPA section 118 for classifying commercial fisheries and publishing an LOF. However, implementing Alternative 2b before finalizing the 2005 LOF would be inconsistent with the MMPA. Implementing Alternative 2b requires NMFS to change the implementing regulations for classifying fisheries on the LOF. The rulemaking process generally takes longer than one year. If NMFS were to undertake rulemaking to change the current fisheries classification scheme, NMFS would fail to meet the requirements for publishing an LOF this year as detailed in MMPA section 118(c)(1)(C). Also, Alternative 2b would be consistent with all other sections of the MMPA.

4.3.3.2 MSA

Compared to the other action alternatives, the minor positive effects on bycatch reduction would be greatest under Alternative 2b because it is the most protective alternative. An indirect, positive effect would occur relative to bycatch of species under jurisdiction of the Magnuson-

Stevens Act. Bycatch of these species may be further reduced as a result of any future TRP regulations for Category I or II fisheries. It is likely that TRTs would propose gear modifications or other restrictions that would reduce bycatch of other non-target species as a positive side effect of reducing serious injury and mortality of marine mammals. This indirect, positive effect would be greatest under Alternative 2b because a greater number of fisheries would be classified in Category II, and thus, a greater number of fisheries would be subject to the take reduction process.

Alternative 2b would not affect EFH, and therefore, no formal consultation with the NMFS Office of Habitat Conservation is required. However, it is possible that future TRP provisions would consider possible impacts on EFH. For example, if a take reduction measure shifts fishing effort to a new location that has otherwise been unaffected by fishing operations, such new fishing effort should be analyzed to determine if EFH would be affected. Similarly, future TRP provisions could benefit EFH by, for example, restricting certain types of fishing gear in areas with EFH. If appropriate, NEPA analysis and coordination with the NMFS Office of Habitat Conservation would be conducted for new TRP provisions.

4.4 Cumulative Impacts

Generally, the cumulative impacts would be the same for each of the action alternatives. Regulations to reduce serious injury or mortality of marine mammals are not developed pursuant to the LOF, rather specific TRPs and implementing regulations are developed to directly reduce marine mammal bycatch. Therefore, specific impacts on protected marine populations and on U.S. commercial fisheries will be analyzed in future NEPA documents on a particular TRP. Under all alternatives, the available financial resources impacts the number of TRTs that NMFS can convene. The impacts of classifying commercial fisheries in the LOF would not directly affect other fishery regulatory programs. All fishery regulatory programs concerning marine mammals are dedicated to protecting and conserving marine mammals. All alternatives in this EA would likely contribute positively to most of these programs by classifying fisheries, which allows NMFS to prioritize efforts (e.g., observer coverage, take reduction planning) for reducing marine mammal bycatch in commercial fisheries.

The only minor, negative cumulative effects on regulatory procedures would apply to Alternatives 2a and 2b regarding fishery categories. Under Alternatives 2a and 2b, NMFS would be required to change its implementing regulations – to change the definitions of Categories II and III – for classifying U.S. commercial fisheries on the LOF. Promulgating new regulations would require NMFS to change the definitions of Categories II and III from the current definitions found in 50 CFR 229.2 and described in section 1.3 of this EA. Such a process would have minor, negative effects on NMFS as it would require time to implement a new classification scheme, which is used in the annual LOF and SARs. However, the preferred alternative, Alternative 1, would not require a new fishery classification scheme.

The socioeconomic effects on commercial fisheries are not quantifiable at this stage; future NEPA documents for specific TRPs would address specific socioeconomic impacts resulting from those TRPs. When considered in combination with other fishery regulations already in place, additive effects of the preferred alternative on socioeconomics of the commercial fishing

industry are expected to be minor. Such minor, negative effects may include slight increases in costs to fishermen to abide by TRP measures to reduce bycatch of marine mammals. Minor, positive effects may include increased landings of the target species if future required measures to reduce bycatch are enough to increase landings per trip of the target catch.

The action alternatives may have minor, indirect effects on other industries associated with commercial fishing. Such industries include gear manufacturing and the seafood industry. Effects on gear manufacturers would correlate to any gear modifications included under TRPs. Gear modifications could result in substantial, short-term, positive effects on gear manufacturers if a new type of gear is developed and required under TRPs. Minor, long-term, positive impacts may result if TRP measures include any language to replace or mend gear in regular time cycles. Fishermen who do not make their own gear would rely on gear manufacturers and contribute financially to that industry, thus boosting its economy.

The seafood industry includes seafood processors, restaurants, and markets. Ultimately, the seafood consumer may be affected as well. If the costs to fishermen increase as a result of TRP requirements (e.g., gear modification/replacement or time/area closures) to reduce bycatch below a stock's PBR level, the cost of fish may increase throughout the seafood industry. The degree of such economic ripple effects would depend on specific TRP measures.

Finally, implementation of the No Action Alternative (Preferred) or Alternative 2b may, in the long-term, result in less marine mammal bycatch nationwide, which is a moderate, positive, long-term impact. This may allow NMFS to focus more regulatory effort on methods to reduce other human-caused mortality and serious injury, such as vessel strikes and marine pollution.

4.5 Finding of No Significant Impact (FONSI) for the Process of Classifying U.S. Commercial Fisheries on the List of Fisheries under the Marine Mammal Protection Act

National Oceanic and Atmospheric Administrative Order 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality regulations at 40 CFR §1508.27 state that the significance of an action should be analyzed both in terms of “context” and “intensity”. Each criterion listed below is relevant to make a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

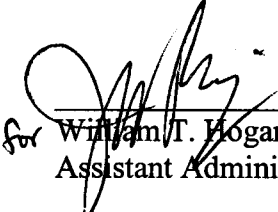
1. No significant beneficial or adverse environmental effects are expected. While beneficial environmental effects are expected under the preferred alternative in the form of marine mammal conservation, it is not expected that the LOF classification process by itself would significantly alter the populations of affected marine mammals. Minor, adverse socioeconomic effects on the commercial fishing industry may result in slightly increased costs to fishermen who participate on TRTs.

2. The preferred alternative is not expected to impact public health and safety. However, any potential effects on health and safety, based on specific TRP measures, would be analyzed in future NEPA documents for those specific TRPs.
3. The geographic scope of the preferred alternative includes what could be considered unique characteristics such as EFH and critical habitat because this EA relates to all U.S. commercial fisheries. However, the action of classifying fisheries on the LOF is an initial step in reducing incidental mortality and serious injury of marine mammals. It does not result in any impacts on the physical environment.
4. The effects of the preferred alternative on the human environment are not likely to be highly controversial. The preferred alternative is also the No Action Alternative, thus NMFS is not proposing to modify the process for classifying fisheries. While NMFS has received comments on previous LOFs, the comments primarily related to specific fishery classifications and not the process by which NMFS categorizes fisheries on the LOF. Thus, the preferred alternative is not highly controversial to the extent that the preparation of an EIS is necessary.
5. The effects of the preferred alternative are not highly uncertain, nor do they involve unique or unknown risks, as NMFS has used this same process since 1996. Classifying fisheries allows NMFS to focus bycatch reduction efforts on those fisheries with the highest level of incidental mortality and serious injury. Although specific regulatory measures (i.e., through TRPs) are unknown, it is certain that the effects of such measures would benefit the conservation of marine mammals as provided by the MMPA. No unique or unknown risks would result from implementing such measures.
6. Classifying fisheries according to the preferred alternative does not establish a precedent for future actions with significant effects. Publishing an LOF is already a mandate as provided by the MMPA and has already been implemented through 50 CFR 229.2. Any future regulatory take reduction measures would require independent NEPA analysis. Further, no decision in principle about a future consideration is involved because specific TRTs would develop future measures required for a fishery or group of fisheries to reduce serious injury and mortality of a marine mammal stock(s) to below PBR. A resulting TRP would require its own NEPA analysis before implementing any such measures. Therefore, classifying fisheries according to the preferred alternative would not establish a precedent for future actions with significant effects or represent a decision in principle about future consideration.
7. There are no individually insignificant but cumulatively significant impacts of the action. As discussed, there are other commercial fishing regulations in place and the additive effects of classifying commercial fisheries are minor. Socioeconomic effects would be minimal because publishing the LOF is already a requirement provided by the MMPA. The preferred alternative would continue to classify fisheries according to the definitions found in 50 CFR 229.2. Regarding impacts on marine mammals, the expected effects would be to decrease the amount of incidental mortality and serious injury, but such effects are not expected to be significant.

8. The action would not adversely affect entities listed in or eligible for listing in the National Register of Historic Places, nor would it cause loss of destruction of significant scientific, cultural, or historic resources.
9. The action is not expected to adversely affect endangered and threatened species, and is not expected to affect designated critical habitat. The preferred alternative is designed to have beneficial effects on endangered and threatened marine mammals by reducing incidental mortality and serious injury. Also, future TRP measures required to reduce bycatch are not expected to adversely affect critical habitats.
10. The action would not be in violation of Federal, state, or local laws for environmental protection.
11. The action is not likely to result in the introduction or spread of a nonindigenous species. The proposed action applies to the commercial fishing industry and does not involve potential species transfer.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting environmental assessment prepared for classifying U.S. commercial fisheries on the MMPA List of Fisheries, it is hereby determined that the above-mentioned final EA will not significantly impact the quality of the human environment as described above and in the EA. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.


for William T. Hogarth, Ph.D.
Assistant Administrator for Fisheries

12-22-05
Date

5.0 LIST OF PREPARERS

This environmental assessment was prepared by:

Office of Protected Resources
NOAA/National Marine Fisheries Service
1315 East-West Highway, 13th Floor
Silver Spring, MD 20910

Key personnel:

Kristy Long, Marine Biologist: 5 years of experience in fishery biology and regulatory programs. University of New Hampshire, 1999, B.S. Marine and Freshwater Biology. Duke University, 2002, M.E.M. Coastal Environmental Management.

6.0 REFERENCES

- Barlow, Jay, Steven L. Swartz, Thomas C. Eagle, and Paul R. Wade. 1995. *U.S. Marine Mammal Stock Assessments: Guidelines for Preparation, Background, and a Summary of the 1995 Assessments*. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-OPR-6.
- Harrison, P. 1983. *Seabirds, an Identification Guide*. Houghton Mifflin. Boston, MA.
- National Marine Fisheries Service (NMFS). 1983. *Recovery Plan for the Hawaiian Monk Seal, *Monachus schauinslandi**. Prepared by William G. Gilmartin for NMFS, Silver Spring, MD.
- NMFS. 1991. *Recovery Plan for the Humpback Whale (*Megaptera novaeangliae*)*. Prepared by the Humpback Whale Recovery Team for NMFS, Silver Spring, MD.
- NMFS. 1992. *Recovery Plan for the Steller Sea Lion (*Eumetopias jubatus*)*. Prepared by the Steller Sea Lion Recovery Team for NMFS, Silver Spring, MD.
- NMFS. 1993. *Final Conservation Plan for the northern fur seal (*Callorhinus ursinus*)*. Prepared by the National Marine Mammal Laboratory/Alaska Fisheries Science Center, Seattle, WA and the Office of Protected Resources/NMFS, Silver Spring, MD.
- NMFS. June 1995a. *Environmental Assessment of Proposed Regulations to Govern Interactions between Marine Mammals and Commercial Fishing Operations, under Section 118 of the Marine Mammal Protection Act*.
- NMFS. June 16, 1995b. *Taking of Marine Mammals Incidental to Commercial Fishing Operations; Authorization for Commercial Fisheries; Proposed List of Fisheries*. Federal Register Vol. 60, No. 116, p. 31666.
- NMFS. August 30, 1995c. *Taking of Marine Mammals Incidental to Commercial Fishing Operations; Authorization for Commercial Fisheries*. Federal Register Vol. 60, No. 168, p. 45086.
- NMFS. December 28, 1995d. *Final List of Fisheries for 1996*. Federal Register Vol. 60, No. 249, p. 67063.
- NMFS. January 2, 1997. *Final List of Fisheries for 1997*. Federal Register Vol. 62, No. 1, p. 33.
- NMFS. 1998a. *Recovery Plan for the Blue Whale (*Balaenoptera musculus*)*. Prepared by Reeves, R.R., P.J. Clapham, R.L. Brownell, Jr., and G.K. Silber for NMFS, Silver Spring, MD.
- NMFS. 1998b. *Recovery Plan for the Shortnose Sturgeon (*Acipenser brevirostrum*)*. Prepared by the Shortnose Sturgeon Recovery Team for NMFS, Silver Spring, MD.

- NMFS. February 4, 1998c. *Final List of Fisheries for 1998*. Federal Register Vol. 63, No. 23, p. 5748.
- NMFS. February 24, 1999. *Final List of Fisheries for 1999*. Federal Register Vol. 64, No. 36, p. 9067.
- NMFS. April 26, 2000. *Notice of Continuing Effect of List of Fisheries*. Federal Register Vol. 65, No. 81, p. 24448.
- NMFS. August 15, 2001. *List of Fisheries for 2001*. Federal Register Vol. 66, No. 158, p. 42780.
- NMFS. January 17, 2002. *Notice of Continuing Effect of List of Fisheries*. Federal Register Vol. 67, No. 12, p. 2410.
- NMFS. July 15, 2003. *List of Fisheries for 2003*. Federal Register Vol. 68, No. 135, p. 41725.
- NMFS. March 2004a. *U.S. Pacific Marine Mammal Stock Assessments: 2003*. NOAA Technical Memorandum NMFS-SWFSC-358. Prepared by James V. Carretta, Karin A. Forney, Marcia M. Muto, Jay Barlow, Jason Baker, and Mark Lowry. Southwest Fisheries Science Center, La Jolla, California.
- NMFS. May 2004b. *U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2003*. NOAA Technical Memorandum NMFS-NE-182. Prepared by Gordon T. Waring, Richard M. Pace, Janeen M. Quintal, Carol P. Fairfield, and Katherine Maze-Foley. Northeast Fisheries Science Center, Woods Hole, Massachusetts.
- NMFS. July 20, 2004c. *Authorization for Commercial Fisheries under the Marine Mammal Protection Act of 1972; Zero Mortality Rate Goal*. Federal Register Vol. 69, No. 138, p. 43338.
- NMFS. June 2004d. *Environmental Assessment and Regulatory Impact Review for the Implementation of the Zero Mortality Rate Goal of the Marine Mammal Protection Act*. Prepared by Earth Tech, Alexandria, Virginia.
- NMFS. August 2004e. *Alaska Marine Mammal Stock Assessments, 2003*. NOAA Technical Memorandum NMFS-AFSC-144. Prepared by R.P. Angliss and K.L. Lodge. Alaska Fisheries Science Center, Seattle, Washington.
- NMFS. August 10, 2004f. *List of Fisheries for 2004*. Federal Register Vol. 69, No. 153, p. 48407.
- NMFS. November 10, 2004g. *Taking of Marine Mammals Incidental to Commercial Fishing Operations; Bottlenose Dolphin Take Reduction Plan; Sea Turtle Conservation; Restrictions to Fishing Activities*. Proposed Rule. Federal Register Vol. 69, No. 217, p. 65127.

- NMFS. November 2004h. *Draft Environmental Assessment, Regulatory Impact Review, and Initial Regulatory Flexibility Act Analysis for a Proposed Rule to Implement the Bottlenose Dolphin Take Reduction Plan and Reduce Sea Turtle/Fishery Interactions in State Waters of North Carolina and Virginia*. Prepared by the NMFS Southeast Regional Office. St. Petersburg, FL.
- NMFS. December 2, 2004i. *List of Fisheries for 2005*. Proposed Rule. Federal Register Vol. 69, No. 231, p. 70094.
- NMFS. 2005a. *Recovery Plan for the Northern Right Whale (Eubalaena glacialis)*. Prepared by the Office of Protected Resources, NMFS, Silver Spring, MD.
- NMFS. June 22, 2005b. *Notice of establishment of an Atlantic Longline Take Reduction Team and meeting*. Notice. Federal Register Vol. 70, No. 119, p. 36120.
- NMFS. June 21, 2005c. *Taking of Marine Mammals Incidental to Commercial Fishing Operations; Atlantic Large Whale Take Reduction Plan*. Proposed Rule. Federal Register Vol. 70, No. 118, p. 35894.
- NMFS. Website accessed March 2005d. Atlantic Large Whale Take Reduction Team. [<http://www.nero.noaa.gov/whaletrp/>].
- NMFS. Website accessed March 2005e. Take Reduction Teams. [http://www.nmfs.noaa.gov/prot_res/PR2/Fisheries_Interactions/TRT.htm].
- NMFS. Website accessed April 2005f. Marine Turtles. [<http://www.nmfs.noaa.gov/pr/species/turtles/>].
- NMFS. Website accessed April 2005g. Marine and Anadromous Fish. [<http://www.nmfs.noaa.gov/pr/species/fish/>].
- NMFS. Website accessed April 2005h. Species of Concern and Candidate Species. [<http://www.nmfs.noaa.gov/pr/species/concern/>].
- NMFS. Website accessed April 2005i. Status of Marine Mammals Under the Law. [http://www.nmfs.noaa.gov/prot_res/PR2/Conservation_and_Recovery_Program/listedmms.html].
- NMFS and USFWS. 1991a. *Recovery Plan for U.S. Population of Atlantic Green Turtle*. NMFS, Washington, DC.
- NMFS and USFWS. 1991b. *Recovery Plan for U.S. Population of Loggerhead Turtle*. NMFS, Washington, DC.
- NMFS and USFWS. 1992a. *Recovery Plan for Leatherback Turtles in the U.S. Caribbean, Atlantic, and Gulf of Mexico*. NMFS, Washington, DC.

- NMFS and USFWS. 1992b. *Recovery Plan for the Kemp's Ridley Sea Turtle (Lepidochelys kempii)*. NMFS, St. Petersburg, FL.
- NMFS and USFWS. 1993. *Recovery Plan for the Hawksbill Turtles in the U.S. Caribbean Sea, Atlantic Ocean, and Gulf of Mexico*. NMFS, St. Petersburg, FL.
- NMFS and USFWS. 1998a. *Recovery Plan for U.S. Pacific Populations of the East Pacific Green Turtle (Chelonia mydas)*. NMFS, Silver Spring, MD.
- NMFS and USFWS. 1998b. *Recovery Plan for U.S. Pacific Populations of the Green Turtle (Chelonia mydas)*. NMFS, Silver Spring, MD.
- NMFS and USFWS. 1998c. *Recovery Plan for U.S. Pacific Populations of the Hawksbill Turtle (Eretmochelys imbricata)*. NMFS, Silver Spring, MD.
- NMFS and USFWS. 1998d. *Recovery Plan for U.S. Pacific Populations of the Leatherback Turtle (Dermochelys coriacea)*. NMFS, Silver Spring, MD.
- NMFS and USFWS. 1998e. *Recovery Plan for U.S. Pacific Populations of the Loggerhead Turtle (Caretta caretta)*. NMFS, Silver Spring, MD.
- NMFS and USFWS. 1998f. *Recovery Plan for U.S. Pacific Populations of the Olive Ridley Turtle (Lepidochelys olivacea)*. NMFS, Silver Spring, MD.
- National Oceanic and Atmospheric Administration (NOAA). June 3, 1999. Environmental Review Procedures for Implementing the National Environmental Policy Act. Effective May 20, 1999. Website accessed March 2005. [<http://www.rdc.noaa.gov/~nao/216-6.html>].
- USFWS. Website accessed April 2005. [<http://endangered.fws.gov/>].
- USFWS and Gulf States Marine Fisheries Commission. 1995. *Gulf Sturgeon Recovery Plan*. Atlanta, GA.
- Wade, Paul R. and Robyn P. Angliss. 1997. *Report of the GAMMS Workshop*. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-OPR-12.