DRAFT ENVIRONMENTAL IMPACT STATEMENT - INITIAL REGULATORY IMPACT REVIEW - INITIAL REGULATORY FLEXIBILITY ANALYSIS

For Proposed Effort Control Measures
For the American Lobster Fishery

FEDERAL AMERICAN LOBSTER MANAGEMENT
in the Exclusive Economic Zone
based upon management measures specified in the
INTERSTATE FISHERY MANAGEMENT PLAN
FOR AMERICAN LOBSTER

April 2010

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
PROGRAM PLANNING AND INTEGRATION
Silver Spring, Maryland 20910

APR 19 2010

Dear Reviewer:

In accordance with provisions of the National Environmental Policy Act (NEPA), we enclose for your review the Draft Environmental Impact Statement (DEIS) for Proposed Effort Control Measures for the American Lobster Fishery.

This DEIS is prepared pursuant to NEPA to assess the environmental impacts associated with NOAA's National Marine Fisheries Service (NMFS) proceeding with proposed alternatives to establish limited access programs using historical participation to control fishing effort in the lobster trap fishery in the nearshore waters from Cape Cod, Massachusetts to New York, comprising lobster Management Area 2 and the Outer Cape Area. Lobstermen fishing with traps in Area 2, the Outer Cape Area, and Area 3, the offshore Area from the U.S./Canada border to North Carolina, would be allowed to transfer (buy and/or sell) blocks of lobster traps to other lobstermen. With each transfer of traps, a percentage of the total traps transferred would be permanently eliminated as a resource conservation tax.

Additional copies of the DEIS may be obtained from the Responsible Program Official identified below. The document is also accessible electronically through the NMFS Northeast Region's website at: http://www.nero.noaa.gov/nero/.

Written comments should be submitted through mail, facsimile (fax), or email to the Responsible Program Official identified below. Written comments submitted during the agency's 60-day public comment period must be received by June 29, 2010. When submitting fax or email comments include the following document identifier in the comment subject line: Lobster DEIS.

Oral comments on the DEIS may be presented at one of the public meetings to be held at the following times and locations:

1. Monday, May 24, 2010, 3 p.m. – Gulf of Maine Research Institute, 350 Commercial Street, Portland, ME.
2. Tuesday, May 25, 2010, 3 p.m. - Urban Forestry Center, 45 Elwyn Road, Portsmouth, NH.
3. Tuesday, June 1, 2010, 3 p.m. - Chatham Community Center, 702 Main Street, Chatham, MA.
4. Wednesday, June 2, 2010, 3 p.m. - Narragansett Town Hall Assembly Room, 25 Fifth Street, Narragansett, RI.
5. Monday, June 7, 2010, 3 p.m. - Riverhead Town Board Room at Town Hall, 200 Howell Avenue, Riverhead, NY.
6. Tuesday, June 8, 2010, 3 p.m. – Rutgers Cooperative Extension, Cape May Court House, 355 Court House/South Dennis Road (Route 657), Cape May Court House, NJ.

Responsible Program Official: Patricia A. Kurkul
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Sincerely,

for

Paul N. Doremus, Ph.D.
NOAA NEPA Coordinator

Enclosure

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LIST OF ACRONYMS

ACRONYM	DEFINITION
ACA	Atlantic Coastal Act (Short for ACFCMA)
ACCSP	Atlantic Coastal Cooperative Statistics Program
ACFCMA	Atlantic Coastal Fisheries Cooperative Management Act
ALWTRP	Atlantic Large Whale Take Reduction Plan
ASMFC	Atlantic States Marine Fisheries Commission
BA	Biological Assessment
BO	Biological Opinion
BRP	Biological reference points
C	Celsius
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CL	Carapace Length
CPH	Confirmation of Permit History
CPUE	Catch Per Unit Effort
CV	Coefficient of Variation
CWA	Clean Water Act
CWA	Cape Wind Associates
CZMA	Coastal Zone Management Act
DAS	Days-at-Sea
DEIS	Draft Environmental Impact Statement
DMF	Division of Marine Fisheries
DOI	Department of Interior
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FMP	Fishery Management Plan
GBK	Georges Bank
GOM	Gulf of Maine
HMS	Highly Migratory Species
ISFMP	Interstate Fishery Management Plan
ITT	Individual Transferable Trap Program
IUCN	International World Conservation Union
IWC	International Whaling Commission
LAP	Limited Access Privilege

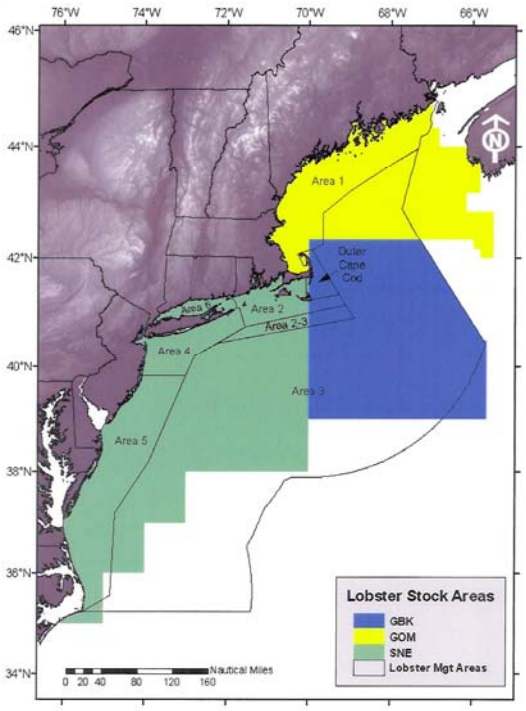
LCMA	Lobster Conservation Management Area
LCMT	Lobster Conservation Management Team
MAFMC	Mid-Atlantic Fishery Management Council
MARAD	Maritime Administration
MMPA	Marine Mammal Protection Act
MMS	Mineral Management Service
MOU	Memorandum of Understanding
MPA	Marine Protected Area
MSA	Magnuson-Stevens Fishery Conservation and Management Act
Mt	Metric Ton
ND	Not determined
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fishery Science Center
NEPA	National Environmental Policy Act
NERO	Northeast Regional Office
NMFS	National Marine Fisheries Service
NMS	National Marine Sanctuaries
NOAA	National Oceanic & Atmospheric Administration
NOI	Notice of Intent
OCC	Outer Cape Cod
OCLMA	Outer Cape Lobster Management Area
OCS	Outer Continental Shelf
OLE-NMFS	Office of Law Enforcement - National Marine Fisheries Service
OSP	Optimum Sustainable Population
PBR	Potential Biological Removal
SBNMS	Stellwagen Bank National Marine Sanctuary
SCUBA	Self Contained Underwater Breathing Apparatus
SNE	Southern New England
STSSN	Sea Turtle Stranding and Salvage Network
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
VTR	Vessel Trip Report
YONAH	Years of the North Atlantic Humpback

Executive Summary

Executive Summary

From Maine through North Carolina, American lobsters are managed under dual state and Federal regulatory authorities, whereby individual states manage the resource within their state waters (0-to-3 nautical miles from the shoreline) and the Federal government has primary jurisdiction over the resource in waters 3-to-200 nautical miles from the shoreline (also known as the Exclusive Economic Zone, or EEZ). Under the Atlantic Coastal Fisheries Cooperative Management Act (Atlantic Coastal Act or Act)[1], the Atlantic States Marine Fisheries Commission[2] (Commission) prepares fishery management actions on an ongoing, as-needed basis, in consultation with the states and the Federal government. Once new measures are approved through the Commission process, states implement and enforce them. In turn, the Federal government is asked to implement management measures for the American lobster fishery that are consistent with and supportive of the actions of the Commission. Federal management of the American lobster fishery thus is largely, though not exclusively, influenced by the management recommendations of the Commission.

Figure ES - 1 - American Lobster Management and Stock Areas[3]



Lobster resources are managed within seven Lobster Conservation Management Areas (LCMAs): Area 1 - Inshore Gulf of Maine (GOM); Area 2 - Inshore Southern New England (SNE); Area 3 - Offshore

[1] 16 U.S.C. 5101-5109; Title VIII of Pub. L. 103-206, as amended, (ACFCMA, 1993).

[2] The Atlantic States Marine Fisheries Commission was formed in 1942 by the 15 coastal states to improve interstate coordination in the protection and management of marine fisheries resources. It is a "deliberative" body, composed of representatives from the states and the Federal government, that serves to facilitate coordination among its members on matters of fishery management. Member states are Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, and Florida.

[3] See Stock Assessment Report No. 09-01 (Supplement) of the Atlantic States Marine Fisheries Commission, "*American Lobster Stock Assessment Report for Peer Review,*" 2009, www.asmfc.org, (ASMFC 2009a).

waters; Area 4 - Inshore Northern Mid-Atlantic; Area 5 - Inshore Southern Mid-Atlantic; Area 6 - New York and Connecticut State Waters (primarily Long Island Sound); and Outer Cape Cod (OCC).

NMFS has prepared this draft Environmental Impact Statement (DEIS) to address a number of management measures recently approved by the Commission for the American lobster fishery affecting LCMAs 2, 3, and the OCC. The actions to be evaluated with this DEIS thus are fundamentally management in nature and their potential impacts on fishery management will be evaluated herein, along with other impacts (e.g., biological and physical, social and economic - see Chapter 4). The Commission has forwarded these measures to NMFS, with a recommendation that Federal regulations to support these measures be promulgated. In general, the recommendations submitted by the Commission focus on two strategies to control fishing effort in the American lobster fishery: 1) limiting the number of lobster permits in a management area, and 2) limiting the number of traps fished by lobster permit holders. More specifically, the Commission's recommendations include the following:

- Measures that would limit the number of **permits**:
  - Cap the number of participants by limiting entry to a Lobster Management Area (proposed for LCMA 2 and OCC).
  - Authorize permits and associated trap allocations only to fishermen and/or vessels with a historic record of fishing in an LCMA.
  - Limit how many permits one entity (individual or corporation) can hold (*i.e.*, excessive share provisions).
- Measures that would limit the number of **traps**:
  - Deduct traps from a permit holder's trap allocation, primarily through the implementation of a "conservation tax," applied when Federal permits are sold or "transferred" within the fishery through an Individual Transferable Trap (ITT) program (discussed below).
  - Cap the number of traps a permit holder with multiple LCMA allocations can fish through the application of the "most-restrictive rule" (also discussed below).
  - Cap the number of traps a "dual permit holder" (someone with both a state and Federal permit) can fish by mandating that a fisher's fishing history, on which trap allocations are based, follow the Federal permit (i.e., prohibit the "stacking" of state and Federal fishing history, which would result in a proliferation of traps).

Individual Transferable Trap (ITT) program

The *ITT program*, as proposed, is meant to increase the business flexibility of lobster fishers to buy and sell lobster traps, while preserving the conservation benefits found within each LCMA's management program. The ITT program is generally thought to be a popular concept within the lobster industry because it would provide a business alternative for permit holders who for various reasons may wish to gain economic benefit by selling traps and "scaling down" their business operations. These measures, described briefly below, are more fully discussed in Chapters 2 and 4.

Currently, permit holders in certain LCMAs can transfer their lobster permits and all associated traps with the sale of a vessel, but do not have the option to sell portions of their trap allocation. The Commission's recommended measures would allow permit holders within those LCMAs to transfer blocks of traps without selling their entire trap allocation and permits. As part of this program, with each transfer, the number of traps allowed in the water associated with a specific permit would be permanently reduced by either 10 or 20 percent, depending on the number of traps sold (a *conservation "tax"*).

Status of the American Lobster Fishery

American lobster (*Homarus americanus*) supports one of the most valuable commercial fisheries in the Northeast United States, with an annual estimated revenue in excess of $350 million in 2004 (NMFS, 2006). The U.S. lobster resource occurs in continental shelf waters from Maine to North Carolina[4]. The commercial U.S. lobster fishery is conducted within three biological stock units – Gulf of Maine (GOM), Georges Bank (GBK), and Southern New England (SNE). While each area has an inshore and offshore component to the fishery, GOM and SNE areas are predominantly inshore fisheries and the GBK area is predominantly an offshore fishery. The GOM stock is primarily fished by fishermen from the states of Maine, Massachusetts, and New Hampshire. The GBK stock is primarily fished by fishermen from Massachusetts and Rhode Island. The SNE stock is primarily fished by fishermen from the states of Connecticut, Massachusetts, New York, and Rhode Island, with smaller contributions from the states of New Jersey, Delaware and Maryland.

GOM supports the largest fishery, constituting 76% of the U.S. landings from 1981 to 2007, and 87% since 2002. Landings in the GOM were stable between 1981 and 1989, averaging 14,600 mt, then increased dramatically from 1990 (19,200 mt) to 2006 (37,300 mt). Landings averaged 33,000 mt from 2000-2007.

GBK constitutes the smallest portion of the U.S. fishery, averaging 5% of the landings from 1981 to 2007. From 1981-2002, landings from the GBK fishery remained stable (averaging 1,300 mt). Landings nearly doubled from 2003-2007, reaching a high of 2,400 mt in 2005, and they have remained high since.

SNE has the second largest fishery, accounting for 19% of the U.S. landings between 1981 and 2007. Landings increased sharply from the early 1980s to the late 1990s, reaching a time series high of 9,900 mt in 1997. Landings remained near the time series high until 1999, when the fishery experienced dramatic declines in landings. From 2000 to 2007, landings from the SNE accounted for only 9% of the U.S. total for American Lobster, reaching a time series low of 6% in 2004.

The most recent 2009 Stock Assessment Report concluded that "(t)he American lobster fishery resource presents a mixed picture, with stable abundance for much of the GOM stock, increasing abundance for the GBK stock, and decreased abundance and recruitment yet continued high fishing mortality for the SNE stock."[5]

Addendum XII

Addendum XII (see Appendix 3) calls for the states and NMFS to adopt a uniform approach when implementing limited access programs and thus is important, among other reasons, for its attempt to address management inconsistencies across LCMA jurisdictions. Nonetheless, while measures under Addendum XII are a necessary step, NMFS recognizes that problems associated with a lack of uniformity will likely remain, even after these measures are implemented, given that the vast majority of involved states qualified permit holders and allocated traps long before the Addendum was approved. Further, NMFS has already noted that states have interpreted aspects of the Commission's LCMA 2 and OCC limited entry programs differently (e.g., one state's LCMA 2 appeal criteria is more liberal than that of its LCMA 2 neighbor) and the states have likely applied differing levels of circumspection in their review of involved qualification and allocation data. Many of these complexities are discussed in detail in Chapter 4.

[4] In addition to American lobster, the United States also has a spiny lobster fishery, which makes up a small percentage of the total U.S. landings. For purposes of this EIS, however, it is assumed that total U.S. landings are composed exclusively of American lobster.

[5] See Stock Assessment Report No. 09-01 (Supplement) of the Atlantic States Marine Fisheries Commission, "*American Lobster Stock Assessment Report for Peer Review,"* 2009, www.asmfc.org, (ASMFC 2009a).

Alternatives

The National Environmental Policy Act requires that any Federal agency proposing a major action consider reasonable alternatives to the proposed action. The evaluation of alternatives in an Environmental Impact Statement assists the Secretary in ensuring that any unnecessary impacts are avoided through an assessment of alternative ways to achieve the underlying purpose of the project that may result in less environmental harm.

To warrant detailed evaluation by NMFS, an alternative must be reasonable[6] and meet the Secretary's purpose and need (see Section 1.2). Screening criteria are used to determine whether an alternative is reasonable (see Section 4.0, Table 4.1). After applying the screening criteria to an identified range of alternatives, the following alternatives were brought forward for detailed review in the EIS:

Table ES-1 – Criteria Used For Outer Cape Area Limited Access Alternatives

	Alternative 1 – No Action	**Alternative 2 – Commission (Preferred Option)**	**Alternative 3 – Qualify Only**
QUALIFICATION Criteria for Future access into the Area	None - Status Quo: Existing regulations apply – open access to all with a Federal lobster permit	Yes – Qualification Required – Future participation based on 1999-2001 fishing history	Yes – Qualification Required – Future participation based on 1999-2001 fishing history
ALLOCATION Criteria for Future Trap Allocation	None - Status Quo: Up to 800 Traps – subject to more restrictive state trap limits	Yes – Qualification Required – Based on highest effective traps fished during the 2000-2002 fishing history	None - Status Quo: Up to 800 Traps – subject to more restrictive state trap limits

LCMA OCC Limited Access Alternatives: Under the No Action Alternative, no Federal limited access program would be enacted in the OCC LCMA. As such, American lobster in the OCC LCMA would continue to be managed in Federal waters under trap limit provisions of existing regulations under the Atlantic Coastal Act. The fishery would remain open access to all who hold a Federal lobster permit and individuals would be able to fish up to 800 traps (subject to the existing Most Restrictive Rule)[7].

Under Alternative 2-Commission Alternative and Alternative 3-Qualify Only, permit holders would be qualified to fish under a limited access program based on a demonstration of prior fishing history (1999-2001) within the LCMA. Trap allocations under Alternative 2-Commission Alternative would be based on "effective traps fished" during the 2000-2002 period, while under Alternative 3-Qualify Only, no new trap allocations would be established.

[6] "Section 1502.14 (of NEPA) requires the EIS to examine all reasonable alternatives to the proposal. In determining the scope of alternatives to be considered, the emphasis is on what is "reasonable" rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are *practical or feasible from the technical and economic standpoint and using common sense*, rather than simply desirable from the standpoint of the applicant." (40 Questions) (emphasis added)

[7] See Section 4.1 of this DEIS and Addendum XII (see Appendix 3), section 4.2 for a detailed description of the Most Restrictive Rule.

Table ES-2 – Criteria Used for Area 2 Limited Access Alternatives

	Alternative 1 – No Action	Alternative 2 – Commission (Preferred Option)	Alternative 3 – Qualify Only
QUALIFICATION Criteria for Future Access into the Area	None – Status Quo: Existing regulations apply – Open access to all with a Federal lobster permit	Yes – Qualification Required – Future participation based on 2001-2003 fishing history	Yes – Qualification Required – Future participation based on 2001-2003 fishing history
ALLOCATION Criteria for Future Trap allocation	Status Quo - Fish up to 800 traps – subject to existing Most Restrictive Rule.	Yes – Qualification Required –Based on 2001-2003 fishing history	None - Status Quo: Up to 800 traps – Subject to more restrictive state trap limits

LCMA 2 Limited Access Alternatives: Under Alternative 1-No Action, no Federal limited access program would be enacted in the LCMA 2. American lobster in the LCMA 2 would continue to be managed in Federal waters under trap limit provisions of existing regulations under the Atlantic Coastal Act. The fishery would remain open access to all who hold a Federal lobster permit and individuals would be able to fish up to 800 traps (subject to the existing Most Restrictive Rule)[8].

Under Alternative 2-Commission Alternative and Alternative 3-Qualify Only, permit holders would be qualified to fish under a limited access program based on a demonstration of prior fishing history (2001-2003) within the LCMA. Trap allocations under Alternative 2-Commission Alternative would be based on "effective traps fished" during the 2001-2003 period, while under Alternative 3-Qualify Only, no new trap allocations would be established.

Table ES-3 – Conditions Applied to Individual Transferable Trap (ITT) Program Alternatives

	Alternative 1 – No Action	Alternative 2 – Commission	Alternative 3 – LCMA 3 Only	Alternative 4 – Optional Trap Transferability
TRANSFER CONDITIONS	None – Status Quo: No transfers allowed – Existing regulations apply	Yes – Transfers allowed – AOC and Area 2, up to a 800 trap cap; Area 3 – up to a 2000 trap cap	Yes – Transfers allowed, but only in Area 3 with up to a 2000 trap cap	Federal permit holders must agree to more restrictive of Federal or state trap allocation
CONSERVATION "TAX"	None – Status Quo: No conservation tax applied to transfers	Yes – AOC and Area 2 have 10% tax; Area 3 has 20% tax on partial and 10% tax on full transfers	Yes – Area 3 has 20% tax on partial and 10% tax on full transfers	Yes – AOC and Area 2 have 10% tax; Area 3 has 20% tax on partial, and 10% tax on full transfers

[8] See Section 4.1 of this DEIS and Addendum XII (see Appendix 3), section 4.2 for a detailed description of the Most Restrictive Rule.

ITT Background

Effort control plans approved or proposed by the Commission and implemented by various states and NMFS to date all have one thing in common: they use documented fishing history and fishing performance to allocate the amount of traps that a permit holder can fish within a given LCMA.[9] As the number of these plans has increased, the need to apply uniform criteria that will allow for the consistent assignment of fishing histories across state and Federal programs has been recognized by both state and Federal regulators.

With Addendum XII, the Commission approved a number of unifying measures that will bring various state practices for assigning fishing history into alignment with existing Federal practice. In so doing, a number of fundamental management principles that are key to the success of overall lobster fishery have been firmly established. These principles include the following:

- A lobster permit and its history cannot be separated.
- Fishing histories accumulated under dual state and Federal permits cannot be treated as separate histories and stacked for the purposes of qualification and allocation. A single fishing entity is considered to have established a single lobster fishing history even if that person is a dual permit holder fishing under a state and federal fishing permit.
- Lobster history accumulated under dual state/Federal permits cannot be divided and apportioned between the permits. Because records are imprecise (and in most cases, do not exist) to determine which part of a dual permit holder's catch was caught in state waters and which part was caught in the EEZ, a dual permit holders' fishing history will be considered indivisible so long as some part of the catch was caught in both state and Federal waters. If a dual permit holder "splits" his/her permits by transferring either the Federal or state permit to another entity, then the entire fishing history is to remain with the Federal permit for the purposes of the initial qualification and allocation decision. [Alternatively, a dual permit holder who permanently relinquishes or surrenders his/her Federal lobster permit can allow his/her fishing history to be transferred to his/her state permit.]

The proposed effort control measures, discussed below, rely on these established principles to meet the conservation goals for the lobster fishery.

Program Overview

As proposed, the Individual Transferable Trap (ITT) program for Federal permit holders in the American lobster fishery establishes fishing privileges for U.S. lobster fishers heretofore unseen in a Federal lobster management program. Under this program, participants are allowed to "transfer" (i.e., sell) blocks of traps to one another after their initial qualification and allocation into the fishery. By allowing fishers to buy and sell lobster traps, the ITT program is meant to provide permit holders with opportunities to enhance efficiency or respond to inadequate trap allocation by obtaining additional allocation from other fishers who may want to scale down their own business or leave the fishery.

Transferable Trap Programs have the potential to reduce effort (i.e., fishing power, often described in number of traps fished) in the fishery through the use of a conservation "tax" (discussed below). In the long run, however, the primary purpose of a transferable trap program is to improve the overall economic efficiency of the lobster industry (ASMFC 2002b).

[9] Through various addenda to the interstate fishery management plan for American lobster, history-based effort control plans based on fishery performance have been enacted by NMFS (Areas 3, 4, and 5) and states (MA in Outer Cape Cod; NY and CT for Area 6; and MA, RI, CT,& NY for Area 2). The only Lobster Management Area currently without a history-based effort control plan is Area 1, and Addendum XVI proposed a LAP for all Federal permit holders in Area 1.

ITT Alternatives: Common to all of the ITT alternatives are provisions that would:

- Allow trap transfers within an LCMA between individuals who have qualified for that LCMA;
- Reduce the seller's trap allocation in all LCMA's by the amount of the traps transferred;
- Establish a conservation "tax" that would require the permanent removal of a percentage of traps with each transfer for conservation purposes.[10]
- Establish a database to track the transfer of traps. This tracking system would be centrally developed and maintained. All jurisdictions would have access to this data in accommodation with states' confidentiality requirements. This database would allow managers to track transfers across jurisdictions (e.g., state-to-state, or any transfer involving a dual permit holder);
- Prohibit the leasing of traps;
- Prohibit the development of excessive shares by limiting the number of traps that can be transferred to a concentrated group of individuals;

Under Alternative 1-No Action, no Federal trap transfer program would be implemented. State-level trap transfer programs, currently in LCMAs 2, 3, and OCC, would continue. Under Alternative 2-Commission Alternative, LCMAs 2, 3, and OCC qualifiers would be allowed to buy and sell traps subject to area-specific conservation taxes, trap caps, and "haul-out" provisions. Under Alternative 3-ITT for LCMA 3 Only, trap transfers would be limited to LCMA 3 Federal waters only and would be administered by NMFS. All transfers would be in increments of 50 or more traps and subject to a 10% or 20% partial conservation tax. Under Alternative 4-ITT as an Optional Program, qualifiers would not be obligated to take part in the transferability program, but could choose to do so, subject to a number of additional parameters designed to make the application of an ITT program more uniform across LCMA jurisdictions.

Regulatory Setting for American Lobster

From a Federal perspective, lobster management has an unusual construct in that management actions largely emerge through a state-initiated Commission process in which Federal managers act in coordination with the Commission, rather than through unilateral action such as is seen in many other areas of fishery management. On the one hand, this construct is a practical response to the state/Federal jurisdictional realities behind lobster management, since lobster harvests occur primarily within state waters (see also discussion in Section 1.0); on the other hand, it also serves to spotlight the differences in jurisdictional perspectives: though a broad view of the needs of the overall fishery may suggest one type of action from a Federal perspective, NMFS may reject that option because it is deemed to be inconsistent with the National Standards as articulated under the MSA. Furthermore, as discussed in Chapter 1, when implementing regulations, it is the obligation of Federal lobster managers to ensure that those regulations are compatible with the Commission's ISFMP for lobster. Because management interests can and often do diverge however, not only between the states and the Federal lobster managers but also between the states themselves, finding compatible regulatory approaches to lobster management can be challenging. (These challenges are explained in greater detail in Section 2.0.)

Lobster management has evolved into an increasingly complex regulatory environment. Individual states (through the LCMTs, via the Commission) have advanced numerous management measures, some of which are out-of-sync with each other, while the Federal government has struggled to promote regulatory consistency between state and Federal management efforts through its own rule-making processes in response to Commission actions. In response, NMFS has placed strong emphasis on improving

[10] Transferability taxes are proposed in Addendum III (for the OCC LCMA), Addenda IV and V (for LCMA 3), Addendum IX (for LCMA 2), and Addendum XII (Appendix 3).

coordination between itself and the states via the Commission. While in many ways there is more coordination than ever as a result, these efforts have so far been unable to keep pace with the myriad of management actions that continue to be advanced. A number of factors contribute to these circumstances.

1) *The Commission's inherent structure*:

- The Commission (and its Lobster Board) is not a singular entity so much as it is an amalgamation of multiple independent and sovereign entities. Specifically, the Lobster Board is composed of eleven (11) sovereign states and the Federal Government, which is itself sovereign. Each sovereign government has its own laws and authorities that govern what it can do and how it can do it.
- Governments have different rulemaking apparatuses – e.g., some states can create regulations quickly by executive action, while others need legislative approval – as a result, regulations are often enacted on different timelines.

2) *State/Federal regulatory disconnects*:

Regulatory consistency across state/Federal jurisdictions is a particular challenge to NMFS due to two unique characteristics of the Federal fishery.

- First, NMFS has territorial jurisdiction -- and thus must be concerned about consistency -- in six (6) of the seven (7) management areas, while the majority of Commission states have territorial jurisdiction over only a single lobster management area (see Table 3.1).[11] As the Commission states have implemented requirements that are increasingly divergent from one another, the ability for NMFS to implement consistent measures across different LCMAs that are also consistent with the Plan approved through the Commission process has become more difficult.
- A second challenge to consistency that is unique to NMFS involves the nature of so-called "dual permit holders." Dual permit holders are individuals that hold two permits: a state permit allowing the person to fish in state waters 0-to-3 nautical miles from shore; and a federal permit allowing the person to fish in federal waters beyond 3 nautical miles from shore.[12] Although fishing under two permits, these dual permit holders operate their fishing businesses as a singular entity and the Commission, under Addendum XII provisions, considers their fishing practices and fishing history to be unified and indivisible. This creates further incentive for the involved state and Federal jurisdictions to make consistent decisions on the dual permit holder and disincentive (and potential for chaos) should the jurisdictions not do so. For the Federal government, however, compatible dual permit holder regulations requires attempted consistency with each of the eleven (11) managing states, which are themselves not always consistent with one another. Furthermore, given the time lag between state and federal rulemaking, NMFS can often be left trying to reconcile eleven sets of independently developed and already enacted regulations before it can issue its own regulations.

[11] The exceptions are New York and New Jersey, which have territory in just two management areas, and Massachusetts, which has territorial jurisdiction in three areas--although Massachusetts law mandates that its fishers must choose and thus fish in only one of these "near-shore" management areas. (Lobster Management Areas 1, 2, 4, 5 ,6 and Outer Cape Cod are sometimes referred to as "near-shore" management areas because their western boundaries run to the beach and are thus "near the shoreline." Area 3, whose western-most boundary is miles from the coast, is sometimes referred to as the "offshore" management area.)

[12] It may also be possible in certain limited situations to have dual state permits, but such situations are rare and not germane to the present analysis.

It is within this overall regulatory context, where state/Federal regulatory consistency has become increasingly difficult to achieve, that the proposed management measures that are the subject of this EIS analysis are being considered by NMFS.

Economic Environment

American lobster is one of the most valuable commercial fisheries in the United States.[13] Despite this, available data indicate that profit margins for lobster fishers are declining (see discussion below): even while the value of American lobster at times may rise, the costs associated with lobster fishing may rise at a higher rate, thus reducing the income of those who participate in the fishery.

For purposes of this analysis, the economic environment for a lobster fisher can be seen as driven by both macro and micro incentives. At the macro level, a fisher is concerned with whether the regional value of the catch is high enough to want to take on the economic burdens associated with being an active participant in the fishery. At the micro level, a fisher must weigh the potential revenue from the catch against the substantial costs of operating within the fishery (including the risks associated with exposure to volatile regional economies, such as has been seen in recent years). In general, these costs include: the boat, bait, traps, rope, fuel, and overhead. Whether an individual can realize a sufficient profit margin after these costs and revenues have been factored will, for purposes of this analysis, suggest whether those fishers currently participating in the lobster fishery will have incentives to become buyers or sellers under an ITT program (this will be discussed further in Chapter 4).

Social Environment

The social environment discussion in this DEIS (see Sec. 3.3) examines the social and cultural setting of the communities potentially affected by the proposed LAP and ITT programs. Potentially affected communities were identified by first looking at the distribution of lobster fishers (trap vessels) across the relevant states and management areas, then identifying the towns in which those lobster license holders reside and, finally, identifying the counties in which those towns are located. Within each county, social and cultural characteristics of the towns with the strongest participation in the American Lobster fishery were used as a proxy for the county as a whole. Using this approach, the American Lobster fishery breaks down by state and across LCMAs as indicated in Table 3.2.

Table ES-4 - Trap Vessels by Area and State (2000-2007)

	A2			A3			OCC		
	2000	**2004**	**2007**	**2000**	**2004**	**2007**	**2000**	**2004**	**2007**
CT	12	16	16	3	4	2	1	3	4
MA	253	204	176	173	43	34	174	155	131
ME	71	68	22	393	18	6	24	17	7
NH	10	12	11	32	13	10	1	2	3
NJ	10	24	28	67	16	9	4	10	9
NY	33	43	42	23	10	5	5	4	6
RI	215	201	169	93	43	39	10	27	20
Other	2	7	7	22	3	4	1	7	4
Totals	606	575	471	806	150	109	220	225	184

[13] (NMFS Office of Science and Technology, 2009).

Based on the relative number of trap vessels across states, the data show in general that Massachusetts and Rhode Island are the major participants (both historically and based on the most recent 2007 data), followed by New York and New Jersey. Further, overall participation has been declining among the major participants across all LCMAs, with participation in LCMA 3 showing the most dramatic decrease over the 8-year period from 2000 to 2007.

From a county perspective, the analysis shows that, for Massachusetts, Rhode Island, New York and New Jersey, the following counties are the most active in the American Lobster fishery across LCMAs 2, 3 and the OCC from 2000-2007:

Table ES-5 - Most Active Counties by State in the American Lobster Fishery (2000-2007)

State	Counties
Massachusetts	Barnstable, Bristol, Dukes, Essex, Plymouth
Rhode Island	Newport, Washington
New York	Suffolk
New Jersey	Ocean, Cape May

Environmental Impacts

A number of key topics are important to a clear understanding of the impacts analysis within this DEIS, as follows: data used for the analysis; documentation of historical participation in the lobster fishery; the need for a centralized database tracking system; sources of "disconnects" across state and Federal jurisdictions; the Most Restrictive Rule; and latent effort. Background on each of these topics is provided in Section 4.1.

LCMA OCC Limited Access Alternatives

In general, the analysis of limited access alternatives for the LCMA OCC shows the following:[14]

- In shifting from the status quo in the LCMA OCC (where any Federal permit holder can elect to fish the area) to an OCC Area-specific limited-access program, "accounting" of what is taking place within the fishery becomes more accurate in two important ways. First, the number of permit holders actually fishing within the LCMA OCC becomes more accurate. Unlike the status quo, where a wide gap exists between those permit holders "electing" to fish and those actually purchasing trap tags, under a limited-access program, the number of "qualified" permit holders and those purchasing trap tags (those who "really" fished) would generally be equal. Second, the number of traps being fished (i.e., effort) also becomes more accurate, as the gap between the number of traps initially allocated to qualified fishers and those actually fished would become far more narrow than the gap between traps allocated to those "electing" to fish and traps actually fished under the No Action Alternative 1.
- The number of traps allocated shrinks significantly when shifting from the status quo to a LCMA OCC area-specific limited-access fishery (by 90% under Alt 2-Commission Alternative and 85% under Alt 3-Qualify Only);

[14] See full discussion in Section 4.2.

- Massachusetts emerges as the dominant player within the LCMA OCC under an OCC Area-specific limited-access program; no permit holders within the other contiguous states would qualify for an initial allocation of traps, based on the qualifying criteria passed by the Commission. This may be due to the geographical characteristics of the LCMA OCC (predominantly a Massachusetts fishery) and the expense and time required for boats to transit long distances if they were located in an adjacent state. Further, the practical reality of changing fishing locations in a highly territorial fishery limits to some unquantifiable degree the extent to which vessels switch from one area to another.

Regulatory Environment: Under No Action, the Federal adoption of Commission-approved regulations would be rejected and moderate-to-major adverse long-term direct regulatory impacts would be expected to occur as a result. Inconsistencies between state and Federal lobster management would remain and likely worsen over time, and management, administrative and enforcement objectives would become more difficult to achieve as a result. The Commission Alternative would implement management measures for the American Lobster fishery that are compatible with Commission-approved measures, significantly addressing the inconsistencies between state and Federal management programs; major, beneficial, long-term regulatory impacts would be expected as a result. The Qualify-Only alternative reflects a compromise between absolute consistency with the Commission-approved limited access program and the realization that consistency on all aspects of the program and between all state/Federal jurisdictions involved may not be possible. Under this alternative, both minor, beneficial, long-term and moderate, adverse long-term regulatory impacts are therefore expected, as some but not all of the significant disconnects between state and Federal lobster management will be addressed.

Biological Environment: Under No Action, negligible-to-minor, adverse, long-term indirect impacts to biological resources (lobster, protected resources, by-catch fish and bait fish) are expected as a result of a small (unquantifiable) increase in fishing effort anticipated under this option. Under the Commission alternative, little change in the amount of effort (i.e., traps in the water) is anticipated because participants would be qualified and traps would be allocated based on historical fishing practices. This option would also substantially reduce the amount of potential latent effort within the fishery. Based on this, negligible-to-minor beneficial, long-term, indirect impacts on biological resources are expected under the Commission alternative. Under the Qualify-Only alternative, little change in the amount of fishing effort is anticipated, given that the number of participants will be capped at historical levels and it is assumed that the number of traps fished will be approximately the same as those shown for 2007 (latest year for complete data). As a result, negligible-to-minor beneficial, long-term indirect impacts on biological resources are expected as a result of a small (unquantifiable) decrease in fishing effort under this option relative to the No Action alternative.

Economic Environment: Though only a small (unquantifiable) increase in fishing effort is anticipated under the No Action alternative, the most likely economic impact of any upward shift in effort would be a dilution of profitability for current and future participants. Under both the Commission alternative and, to a lesser extent, the Qualify Only alternative, increased certainty over eligibility to fish and the number of traps that may be fished in the area may increase the effectiveness, timeliness, and transactions costs associated with managing the OCC lobster trap fishery. Based on this, negligible-to-minor beneficial, long-term, indirect economic impacts would be expected, depending on the alternative chosen.

Social Environment: Because all of the alternatives considered for the LCMA OCC limited-access program will have a neutral impact on those historically participating in the fishery, NMFS believes that the impacts on the social environment from these options will be neutral. At the same time, NMFS recognizes the possibility that there may be fishers who want to fish in the area, but have no history, and who will therefore be denied future access under an area-specific Limited Access program (unless they participate through an ITT program, should one be implemented). Nonetheless, for those fishers who have historically fished the area, increased certainty over eligibility to fish and the number of traps that may be

fished may increase the effectiveness, timeliness, and transactions costs associated with managing the LCMA OCC lobster trap fishery, resulting in an improved economic environment that will also have social benefits for the affected communities. On balance, therefore, NMFS concludes that the social impacts will be ***neutral***, with the potential for some beneficial impacts as a result of improved economic conditions.

LCMA 2 Limited Access Alternatives

In broad terms, the overall effects of the limited access program alternatives in LCMA2 are similar to those described for the LCMA OCC above: better accounting of who is actually fishing within the management area and a trap allocation that will cap future fishing effort, both of which will set the stage for an ITT program (evaluated in Section 4.4).

In other ways, however, there are important differences that would occur under a limited access program in LCMA 2 compared with the LCMA OCC. First, among the most significant difference is the geographic representation by the fishers: whereas the LCMA OCC is predominantly (and, under its Alternatives 2 & 3, likely exclusively) a Massachusetts-based fishery (See Table 4.2), LCMA2 is truly multi-state, with Massachusetts and Rhode Island sharing strong positions in its geographic make-up. The regulatory complications that surround efforts to manage the lobster fishery in this multi-state setting thus become even more pronounced relative to what was seen in LCMA OCC. These complications are discussed more fully in Chapter 4.

Second, in addition to being geographically more diverse, LCMA 2 also has a much larger fishery, both in terms of numbers of participants and the number of traps fished, than the LCMA OCC. Its larger size means that proportionate changes to characteristics such as number of traps allocated under a limited access program will also be more pronounced than in the LCMA OCC; in other words, a 3% difference in traps allocated between the LCMA2 alternatives (an already large fishery) may have greater impacts on, for example, biological resources, than a 3% difference in traps allocated between the LCMA OCC alternatives (already a relatively small fishery to begin with).

Keeping these characteristics in mind, the potential impacts of the limited access alternatives for LCMA 2 are evaluated below.

Based on the findings in Table 4.3, above, the following observations can be made:

- In shifting from the status quo (where any permit holder can elect to fish the area) to an area-specific limited access fishery within Federal waters of LCMA 2, "accounting" of what is taking place within the fishery becomes more accurate in two important ways: *first*, the number of permit holders actually fishing within Area 2 becomes more accurate (as evidenced by the smaller gap between "qualified" permit holders and those purchasing trap tags when compared to the gap between those permit holders "electing" to fish (but not necessarily fishing) and those purchasing trap tags under current Federal regulations); *second*, the number of traps actually being fished (i.e., effort) would also become more accurate, as the gap between the number of traps initially allocated to qualified fishers and those actually fished would become far more narrow than the gap between traps allocated to those "electing" to fish and traps actually fished under current regulations and Alternative 1 (Table 4.3).
- The number of traps allocated within Federal waters of the LCMA 2 shrinks significantly when shifting from the status quo to an area-specific limited access program: by 63% and 52% for Alternatives 2 and 3, respectively.
- In addition to a reduction in allocated traps, the data indicate that the number of Federal vessels that would qualify under a limited access program also shrinks substantially—from 431 under Alternative 1 (status quo) to 207 under Alternatives 2 and 3. Unlike the LCMA OCC, where geographical characteristics and the expense and time required to transit to the area tend to limit

participation, Area 2 has multiple state jurisdictions involved and almost eight times the number of estimated qualifiers.

- Under a limited access program, Massachusetts and Rhode Island will more clearly be the dominant players within LCMA2. Though the data indicate that 28 Federal permit holders from New Jersey currently elect Area 2 on their Federal lobster permit (Table 4.3), a preliminary review of the landings history for these permit holders indicate that none of them landed lobster in a state adjacent to Area 2 (MA/RI/CT/NY), as specified in the ISFMP (Addendum VII, Section 4.2.1.1). As a result, these vessels do not appear to qualify in Area 2 under a limited access program based on the Commission-approved criteria.

Regulatory Environment: Under No Action, the Federal adoption of Commission-approved regulations would be rejected and moderate-to-major adverse long-term direct regulatory impacts would be expected to occur as a result. Inconsistencies between state and Federal lobster management would remain and likely worsen over time, and management, administrative and enforcement objectives would become more difficult to achieve as a result. The Commission Alternative would implement management measures for the American Lobster fishery that are compatible with Commission-approved measures, significantly addressing the inconsistencies between state and Federal management programs; major, beneficial, long-term regulatory impacts would be expected as a result. The Qualify-Only alternative reflects a compromise between absolute consistency with the Commission-approved limited access program and the realization that consistency on all aspects of the program and between all state/Federal jurisdictions involved may not be possible. Under this alternative, both minor, beneficial, long-term and moderate, adverse long-term regulatory impacts are therefore expected, as some but not all of the significant disconnects between state and Federal lobster management will be addressed.

Biological Environment: Under No Action, negligible-to-minor, adverse, long-term indirect impacts to biological resources (lobster, protected resources, by-catch fish and bait fish) are expected as a result of a small (unquantifiable) increase in fishing effort anticipated under this option. Under the Commission alternative, little change in the amount of effort (i.e., traps in the water) is anticipated because participants would be qualified and traps would be allocated based on historical fishing practices. This option would also substantially reduce the amount of potential latent effort within the fishery. Based on this, negligible-to-minor beneficial, long-term, indirect impacts on biological resources are expected under the Commission alternative. Under the Qualify-Only alternative, little change in the amount of fishing effort is anticipated, given that the number of participants will be capped at historical levels and it is assumed that the number of traps fished will be approximately the same as those shown for 2007 (latest year for complete data). As a result, negligible-to-minor beneficial, long-term indirect impacts on biological resources are expected as a result of a small (unquantifiable) decrease in fishing effort under this option relative to the No Action alternative.

Economic Environment: Though only a small (unquantifiable) increase in fishing effort is anticipated under the No Action alternative, the most likely economic impact of any upward shift in effort would be a dilution of profitability for current and future participants. As with the LCMA OCC Limited Access options (discussed above), under both the Commission alternative and, to a lesser extent, the Qualify Only alternative, increased certainty over eligibility to fish and the number of traps that may be fished in the area may increase the effectiveness, timeliness, and transactions costs associated with managing the OCC lobster trap fishery. Based on this, negligible-to-minor beneficial, long-term, indirect economic impacts would be expected, depending on the alternative chosen.

Social Environment: As with the LCMA OCC, NMFS believes that all of the alternatives considered for the LCMA 2 limited-access program will have a neutral impact on those historically participating in the fishery; at the same time, it acknowledges that those without history in the management area will not be able to qualify under the program options. Nonetheless, for those fishers who have historically fished the area, increased certainty over eligibility to fish and the number of traps that may be fished may increase

the effectiveness, timeliness, and transactions costs associated with managing the LCMA 2 lobster trap fishery, resulting in an improved economic environment that will also have social benefits for the affected communities. On balance, therefore, NMFS concludes that the social impacts will be ***neutral***, with the potential for some beneficial impacts as a result of improved economic conditions.

Inter-Transferable Trap Alternatives

The establishment of an Individual Transferable Trap (ITT) program is the last step in a three-step process that necessarily begins with qualifying permit holders into an LCMA (step 1), followed by allocating the number of traps that a qualified permit holder can fish within that LCMA (step 2). Once these two steps have been completed, an ITT program would allow lobster fishers to sell, or "transfer," partial trap allocations to one another. Under the current Federal program, lobster fishers who want to sell trap fishing rights assigned to a lobster permit must sell their entire trap allocation (and thus get out of the fishery completely). By allowing participants to buy and sell partial trap allocations separate from the Federal lobster permit, an ITT program would establish fishing privileges for U.S. lobster fishers heretofore unseen in Federal lobster management.

To date, a number of ITT programs have been approved through the Commission process within certain LCMAs, beginning with the OCC LCMA in 2002, followed with the LCMA 3 in 2003 and, finally, with the LCMA 2 in 2005 (see also Section 2.0). For any ITT program, a central objective is to provide permit holders with opportunities to enhance their own business efficiency or respond to inadequate trap allocation by obtaining additional allocation from other fishers who may want to scale down their own business or leave the fishery altogether. Because the total number of traps that can be fished within an LCMA will have already been determined (through steps 1 and 2, above), ITT programs are not about effort control or about affecting the number of lobsters in the water (although measures to reduce effort are incorporated into the ITT program to a limited degree, discussed below). Rather, ITT programs are about affecting the behavior of the people who fish for lobster; in particular, they are about giving the people who fish for lobster economic options (through opportunities to buy and sell partial trap allocations) that are not available to them under existing Federal lobster management. Ultimately, therefore, the primary purpose of an ITT program is to improve the overall economic efficiency of the lobster industry.[15] (ASMFC 2002)

Except for *Alternative 3-LCMA 3 Only*, each of the ITT program alternatives discussed below would apply to LCMAs 2, 3 and the OCC for the American Lobster fishery. Further, common to each of the alternatives (except No Action) are management provisions that would: 1) mitigate against the potential activation of "latent effort" and 2) require a database tracking system to manage the inter-jurisdictional complexities of trap transfers. These two issues—latent effort under ITT and the need for a database tracking system--are discussed in turn, below.

Latent effort under ITT

Latent effort is potential effort. In the lobster fishery, it would represent the number of traps that could be fished, but that are not actually being fished. For example, if a fisher with an 800 trap allocation decides to fish only 500 traps, the remaining 300 traps represent latent effort. Concern about the potential activation of latent effort increases under an ITT program because the more latent effort that exists, the more potential that a spike in fishing effort will occur when those traps not being fished can be transferred (i.e., sold) once ITT is "turned on." Under these circumstances, lobster fishers could maximize their income by transferring "latent" traps to other fishers who would use these traps more actively,

[15] To date, a number of state-level trap transfer programs have been implemented within certain LCMAs, beginning with the OCC LCMA in 2002, and LCMA 2 in 2005.The OCC LCMA program was proposed in Addendum III in February 2002, followed by LCMA 3 program in Addendum IV in December 2003 and finally the LCMA 2 in Addendum VII in November 2005. Transferability taxes are proposed in Addendum III (for the OCC LCMA), Addenda IV and V (for LCMA 3), Addendum IX (for LCMA 2), and Addendum XII. Addendum VII does not establish a transferability program so much as it suggests that the states establish such a program at some point in the future (see Addendum VII, Section 4.2.1.3, November 2005).

thereby increasing the overall level of fishing effort. Though steps 1 and 2 (whereby fishers are qualified to fish within an LCMA and receive trap allocations based on fishing history) attempt to "cap" latent effort, some amount likely remains because many lobster fishers fish less than their maximum allocation.

Recognizing this potential, the Commission added a number of measures to its ITT program to balance against the activation of latent effort, as follows: a "conservation tax," (whereby a certain percentage of traps are permanently debited from each trap transfer); trap caps (establishes a maximum trap number above which no vessel may fish); debiting of a seller's trap allocation following a sale; prohibition against excessive shares; prohibition against leasing. These measures are discussed in greater detail in Section 4.4.

Request for Comment #1

Trap Cap for LCMA 3 under ITT

The ITT alternatives evaluated in this DEIS include a trap cap for LCMA 3, which is reflective of the trap cap approved by the Commission for this management area under Addendum XIV (see Appendix 5).

While NMFS seeks public comment on any and all issues relevant to this DEIS analysis, the agency also requests, in particular, public comment on the LCMA 3 trap cap provision as proposed under Federal lobster management herein.

Database Tracking System

NMFS believes that the establishment of a Commission managed database system is a pre-requisite to the approval of any Federal ITT program for the American Lobster fishery. This database would be necessary to allow resource managers to track trap transfers across jurisdictions (e.g., state-to-state, or any transfer involving a dual permit holder); without it, the management of LCMA-wide ITT programs would become overly burdensome and potentially chaotic.

The following conditions would apply as a pre-requisite to any Federal approval of an ITT program for the American Lobster fishery:

- All jurisdictions would have access to this database, in accommodation with state confidentiality requirements;
- Continual funding must be guaranteed (i.e., long-term funding must be allocated to ensure ongoing operational support);
- Dedicated staff is on call to answer questions regarding the database.

Request for Public Comment - #2

Database Tracking System

NMFS believes that a database tracking system that will allow resource managers to track and monitor trap transfers across Federal and state jurisdictions should be centrally developed and maintained. The source of its ongoing support and management should be considered in public forums, including public comments on this EIS.

While NMFS seeks public comment on any and all issues relevant to this DEIS analysis, the agency is also requesting public comment on the database issue in general and on the pre-requisite conditions described above, in particular.

Regulatory Environment: Under the No Action ITT alternative, Alternative 1, ITT programs could or would occur at the state level, regardless of their absence at the Federal level. Various states thus would manage their lobster fishery subject to their own history-based determinations as to who qualifies for how many traps (in accordance with Commission-approved measures), while at the Federal level, up to 3200+ Federal permit holders could "transfer" a fishing vessel with a Federal lobster permit (or a valid Federal lobster that is currently in CPH[16]), its associated fishing history and all traps associated with the Federal lobster permit. As a result, under No Action, significant differences, or "disconnects," between the administering of state and Federal lobster industry management programs are expected. Management, administrative and enforcement objectives would become very difficult to achieve as a result. Moderate-to-major, adverse, long-term, direct regulatory impacts are anticipated under this option.

Request for Public Comment - #3

Approval of the No-Action Alternative for ITT

While NMFS seeks public comment on any and all issues relevant to this DEIS analysis, the agency is also requesting in particular that the public comment on the potential impacts of inter-jurisdictional management of the American Lobster fishery should a Federal ITT program not be implemented.

Under the Commission Alternative, Alternative 2, an ITT program for the American Lobster fishery would be administered in Federal waters in accordance with Commission-approved measures and as such, Federal permit holders would be allowed to transact both whole and partial trap transfers within the Federal fishery. Because this alternative would result in coordinated state and Federal ITT programs, the

[16] Confirmation of Permit History: A confirmation of permit history is required when a vessel that has been issued a limited access permit has sunk, been destroyed, or been sold to another person without its permit history and a new vessel has not been purchased. Possession of a confirmation of permit history will allow the applicant to maintain permit eligibility without owning a vessel.

divergence in lobster management programs across jurisdictions (such as described under No Action) would be largely diminished (though not entirely eliminated). Fishers would be qualified and traps would be allocated based on historic fishing practices, greatly narrowing the gap between state and Federal numbers of participants within the fishery. As a result, the potential for latent effort to be activated under an ITT program shrinks significantly under this option. Moderate-to-major, beneficial, long-term, direct regulatory impacts are anticipated under this option.

Request for Public Comment - #4

Potential Inconsistencies in ITT Implementation Across Jurisdictions Under the Commission Alternative

Under Commission-approved measures, greater consistency in the management of American Lobster resources across state/Federal jurisdictions is expected. Nonetheless, NMFS believes that several of these measures could result in certain inconsistencies in how states administer ITT across LCMAs, which could in turn frustrate efforts to implement a unified state-Federal ITT program. These measures are identified below and discussed in greater detail in Section 4.4.2. NMFS requests public comment on the following topics:

- Medical Appeals
- ITT participation (i.e., all permit holders to buy and sell traps or only initially "qualified" permit holders)
- Minimum Number of Traps Per Transfer
- Annual Trap Transfer Application Deadlines
- Forego Permanent Loss of Federal Permit When Retaining Less Than 50 Traps
- Trap Haul-Out Requirements

While NMFS seeks public comment on any and all issues relevant to this DEIS analysis, the agency is also requesting in particular that the public comment on the medical appeals provisions.

Under the ITT in LCMA 3-Only option, Alternative 3, a Federal ITT program would be implemented in LCMA 3 only (administered by NMFS), while state-level ITT programs (currently in LCMAs 2 and OCC) would continue. This alternative attempts to respond to a potential finding that the inability to entirely eliminate the "disconnects" between state and Federal LAP and ITT programs under any of the other alternatives would result in unacceptable impacts, either on the regulatory setting or on resources for American Lobster. This alternative thus is meant to reflect a compromise between absolute consistency with the Commission's ISFMP and the complete absence of any Federal ITT program. Though this alternative would allow for a limited Federal ITT program, the lack of a unified program across all affected LCMAs would likely result in administrative confusion across jurisdictions and, along with this, management and enforcement burdens would likely increase. As a result, moderate adverse, long-term, direct regulatory impacts are expected under this option.

Under the Optional ITT Program alternative, Alternative 4, all qualified permit holders would have the "option" of participating in a Federal ITT program - participation in the ITT program as specified in the ISFMP would not be mandatory. Those permit holders who "opt in" to the ITT program would be subject to a number of management requirements designed to address the potential "disconnects" that would remain under the Commission-approved program. These additional requirements are described in detail in Section 4.4.4. This alternative attempts to balance the industry's need for flexibility with the manager's need to ensure that joint state-Federal management of the lobster resource is consistent across jurisdictions and the program can be effectively tracked and managed. In particular, this alternative is designed to mitigate against the problem of compounding allocation disconnects across state/Federal jurisdictions once a trap transfer program is implemented. Moderate-to-major beneficial, long-term, direct regulatory impacts are expected under this alternative.

Depending on the LAP alternatives used (Section 4.1 and 4.2), under an Optional ITT Program, Alternative 4, it is likely that a number of Federal permit holders (ranging from a limited number of "qualified" participants under LAP Alternative 3-Qualify Only to potential involvement of all 3200+ Federal permit holders under LAP Alternative 1-No Action) would choose not to participate. How many permit holders choose to participate is impossible to predict with any degree of precision and might ultimately depend on the alternatives chosen in Sections 4.1 and 4.2 of this document. Potential management, administrative, and enforcement impacts under the Optional ITT alternative depend on the number of permit holders participating in the program. It is anticipated, however, that many of the management, administrative and enforcement impacts under this option will be minimized relative to the No Action alternative because this option mitigates the problems that would compound if differential trap allocations were transferred. If a majority of those eligible chose not to participate in the optional ITT program, potential management, administrative, and enforcement impacts would be similar to those described in Section 4.4.1-ITT-No Action Alternative 1, combined with LAP Alternative 2.

Biological Environment: Under ITT No Action, Alternative 1, minor adverse, long-term indirect impacts to biological resources (lobster, protected species, bait fish and by-catch) are anticipated. The potential for increased fishing effort in terms of number of traps fished varies depending on which Federal limited access program is chosen in partnership with an ITT program. An ITT No Action alternative combined with LAP No Action would present the greatest potential for increased effort. When combined with any of the other LAP alternatives considered, however, the potential for additional effort under ITT No Action, Alternative 1, is substantially reduced.

Under the Commission's ITT alternative, Alternative 2, there will be a benefit to biological resources as a result of 1) the more effective coordination and synchronization of management and enforcement programs across state/Federal jurisdictions and 2) the proposed conservation "tax" feature that is common to all of the ITT options, which over time will reduce the number of traps in the water. While some latent effort remains under this option, NMFS believes that the potential short-term increase in the number of traps actually fished will be off-set over time by the implementation of a conservation "tax," which under the Commission alternative ranges from 10-20% of the number of traps sold with each transfer. Both moderate beneficial, long-term, direct impacts and minor adverse, short-term indirect biological impacts are thus anticipated under this alternative.

Under the ITT in LCMA 3-Only alternative, Alternative 3, potential biological impacts on lobster resources and protected species are expected to fall in between those projected for ITT No Action and the Commission Alternative. Minor adverse, long-term, indirect biological impacts could occur as a result of a possible small (unquantifiable) increase in fishing effort under this option, most likely from the activation of any latent effort within LCMA 3.

The potential biological impacts on lobster resources and protected resources from the Optional ITT alternative, Alternative 4, would also fall in between those described under No Action and the Commission alternatives. While there would be some number of Federal permit holders who would choose to participate in an ISFMP-compatible ITT program, there would be some who may choose not to participate. Though there is the potential for an increase in fishing effort, as described in ITT No Action Alternative 1, NMFS believes that the short-term adverse impacts on biological and physical American Lobster resources and on protected species would be minor and longer term impacts would be negligible. Because the amount of latent effort that would exist under this option is anticipated to be significantly less than what would be possible under the ITT No Action alternative, minor-to-moderate beneficial, long-term indirect biological impacts to American Lobster resources and protected species are also expected to occur, off-setting the short-term adverse impacts identified above.

Economic Environment: In general an ITT program is expected to provide individual lobster businesses the flexibility to scale their business up or down according to individual business plans. Since trap allocations will be based in part on historic participation within the fishery, many permit holders may

find that their vessels have allocations that do not reflect their desired business plan -- some vessels will have more allocation than they want or need, while others will have less. An ITT program makes it possible for trades to take place under these conditions, thereby increasing economic efficiency on the use of traps within the lobster fishery as a whole. Traps may be expected to be traded from less economically efficient vessels to more efficient ones. That is, the buyer may be expected to be more profitable either because it has a lower cost structure than the seller or is more technically efficient, or both. The conservation tax provides a mechanism to offset the potential transfer of either latent or less efficient traps from one entity to another, more technically efficient one.

Under ITT No Action, Alternative 1, the ITT program already being administered by the Commonwealth of Massachusetts for the LCMA OCC would continue. Massachusetts' program would be unaffected but would only apply to individuals that qualified and were issued trap tags by the Commonwealth. Assuming the Commission alternative for qualification and trap allocation were selected, any qualifying vessel from a state other than Massachusetts would be unable to take advantage of the economic flexibility that an ITT would offer. Similarly, since ITT programs have yet to be implemented for either LCMA 2 or 3 by the states, any qualifying vessel would be constrained by its initial allocation of traps and would be unable to take advantage of the economic opportunities that an ITT would provide.

Under the Commission Alternative 2, the particular ITT design elements for each LCMA are tailored to the economic objectives among LCMA participants. As such they may be expected to have higher positive economic benefit for fishery participants compared to No Action. However, administering and monitoring three different ITT programs for EEZ permit holders would be the most costly among all considered ITT alternatives. Further complicating administration of an ITT program under the Commission alternative is the fact that creation of an ITT within an LCMA is left up to each state to develop. This creates considerable uncertainty over the timing of implementation and the manner in which provisions of an ITT program across state may differ.

The ITT LCMA 3-Only Alternative 3 preserves the essential economic benefits that come with an ITT program at a lower administrative cost, but those benefits are realized for a very limited portion of the lobster industry overall. This alternative would not affect dual permit holders from Massachusetts fishing in the OCC LCMA since the state has already implemented an ITT. However, permit holders from any other state who qualify for the OCC LCMA as a result of this proposed action would not be able to participate. The same may also be true for vessels in LCMA 2 depending on when different states implement ITT programs for their dual permit holders.

Under the Optional ITT Alternative 4, many of the features that would generate positive economic benefits under the Commission's ITT Alternative 2 are preserved. Some reduction in realized economic benefits may result under this alternative since trades would not be immediately effective. However, this provision is likely to result in some programmatic cost savings since trap tags would only need to be reissued during the fishing year and would facilitate a full accounting of trap allocations at only one time each year. Any potential loss in economic flexibility may be more than offset by the potential to expand the opportunity to have an ITT program to a larger number of lobster trap fishing businesses.

This action would differ from what has already been implemented by Massachusetts in the OCC LCMA only in the respect that trades would become effective only at the start of the fishing year. This would also be the case for the Commission's recommended LCMA 3 ITT program. Also this alternative would not implement any share accumulation cap either in terms of allocated traps or number of permitted vessels. It is unlikely that these caps are necessary to avoid market power as suggested by the Commission recommendations for each LCMA and are more likely to have been selected to accomplish some social objectives. Nevertheless, states may implement a cap-on-trap accumulation on their own, which any dual permitted vessel would be required to abide by. In fact, this alternative may be likely to allow for greater levels of economic efficiency gains to be realized without a trap cap than the Commission's recommended ITT that does contain ownership caps.

Social Environment: Those American Lobster permit holders who qualify under the proposed limited-access alternatives identified above represent the universe of "sellers" under an ITT program. Because "selling" or "buying" trap allocations is a discretionary action, it is unknown how many individuals would choose to participate in an ITT program and what that would mean in terms of altering the geographic representation for the fishery, as detailed above and in Chapter 3. Without knowing this, it is not possible to even speculate on what the impacts of an ITT program ultimately would be to the affected communities as measured by the demographic parameters outlined in Table 3.12.

What can be said, qualitatively, is that with an ITT program, economic flexibility for permit holders is greatly increased because it creates the opportunity for fishers to respond to inadequate trap allocation by obtaining additional allocation from other fishers who may want to scale down their own business or leave the fishery. In general, this added flexibility will have a positive impact on social "well-being," since, for example, those permit holders who want to retire or otherwise leave the fishery will have more opportunity (and fewer economic disincentives) to do so, while others who want to increase their participation in the fishery will also have more opportunities to do so. Without an ITT program, these options will not exist for permit holders and those individuals will be locked in to their permit allocations.

Based on this, NMFS believes that the direct social impacts from ITT Alternative 1, No Action, will be *major, long-term, and adverse,* while those associated with the proposed ITT alternatives would be *major, long-term, and beneficial.*

Table ES-6 - Comparison of Impacts by Limited Access Alternatives for LCMA OCC

	Alt. 1 No-Action	**Alt. 2 Commission Alt.**	**Alt. 3 Qualify Only Alt.**
Regulatory Setting	Moderate-to-major, adverse, long-term, direct	Major, beneficial, long-term, direct	Minor, beneficial, long-term, direct *AND* moderate, adverse, long-term direct
Biological/Physical Resources			
Lobster	Negligible-to-minor, adverse, long-term, indirect to biological and physical resources	Minor, beneficial, long-term, indirect to biological and physical resources	Minor, beneficial, long-term, indirect to biological and physical resources
Protected Species	Minor, adverse, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
By-Catch	Negligible-to-minor, adverse, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
Bait Fish	Negligible-to-minor, adverse, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
Economic Environment	Negligible-to-minor, adverse, long-term, indirect	Minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
Social Environment	Neutral, with potential for adverse, indirect impact	Neutral, with potential for beneficial, indirect impact	Neutral, with potential for beneficial, indirect impact

Table ES-7 - Comparison of Impacts by Limited Access Alternatives for LCMA 2

	Alt. 1 No-Action	**Alt. 2 Commission Alt.**	**Alt. 3 Qualify Only Alt.**
Regulatory Setting	Moderate-to-Major, adverse, long-term, direct	Major, beneficial, long-term, direct	Minor, beneficial, long-term, direct *AND* moderate, adverse, long-term, direct
Biological/Physical Resources			
Lobster	Minor, adverse, long-term, indirect to biological and physical resources	Minor, beneficial, long-term, indirect to biological and physical resources	Negligible-to-minor, beneficial, long-term, indirect *AND* minor, adverse, long-term, indirect to biological and physical resources
Protected Species	Minor, adverse, long-term, indirect	Minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
By-Catch	Minor, adverse, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
Bait Fish	Minor, adverse, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
Economic Environment	Minor, adverse, long-term, indirect	Minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
Social Environment	Neutral, with potential for adverse, indirect impact	Neutral, with potential for beneficial, indirect impact	Neutral, with potential for beneficial, indirect impact

Table ES-8 - Comparison of Impacts by ITT Alternatives

	Alt. 1 No-Action	Alt. 2 Commission Alt.	Alt. 3 ITT for LCMA3 Alt.	Alt. 4 Optional ITT
Regulatory Setting	Moderate-to-major, adverse, long-term, direct	Moderate, beneficial, long-term, direct	Moderate, adverse, long-term, direct	Moderate-to major, beneficial, long-term, direct
Biological/Physical Resources				
Lobster	Minor, adverse, long-term, indirect	Moderate, beneficial, long-term, indirect *AND* minor, adverse, short-term, indirect	Minor, adverse, short-term, indirect	Moderate, beneficial, long-term, indirect *AND* minor, adverse, short-term, indirect
Protected Species	Minor, adverse, long-term, indirect	Moderate, beneficial, long-term, indirect *AND* minor, adverse, short-term, indirect	Minor, adverse, short-term, indirect	Moderate, beneficial, long-term, indirect *AND* minor, adverse, short-term, indirect
By-Catch	Minor, adverse, long-term, indirect	Minor, beneficial, long-term, indirect *AND* negligible, adverse, short-term, indirect	Minor, adverse, short-term, indirect	Moderate, beneficial, long-term, indirect *AND* negligible, adverse, short-term, indirect
Bait Fish	Minor, adverse, long-term, indirect	Minor, beneficial, long-term, indirect *AND* negligible, adverse, short-term, indirect	Minor, adverse, short-term, indirect	Moderate, beneficial, long-term, indirect *AND* negligible, adverse, short-term, indirect
Economic Environment	Moderate, adverse, long-term, indirect	Moderate, beneficial, long-term, indirect	Minor, adverse, long-term, indirect	Moderate-to-major, beneficial, long-term, indirect
Social Environment	Major, adverse, long-term, direct	Moderate, beneficial, long-term, direct	Minor, beneficial, long-term, direct	Moderate-to-major, beneficial, long-term, direct

Chapter 1 – Introduction and Purpose and Need

INTRODUCTION AND PURPOSE AND NEED CHAPTER 1

1.0 ATLANTIC COASTAL ACT AND ATLANTIC STATES MARINE FISHERIES COMMISSION MANAGEMENT MEASURES

From Maine through North Carolina, American lobsters are managed under dual state and Federal regulatory authorities, whereby individual states manage the resource within their state waters (0-to-3 nautical miles from the shoreline) and the Federal government has primary jurisdiction over the resource in waters 3-to-200 nautical miles from the shoreline (also known as the Exclusive Economic Zone, or EEZ). Until the late 1990s, Federal authority to regulate the lobster fishery was controlled by the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act)[17] and Federal management measures were implemented by the National Marine Fisheries Service (NMFS) through a Fishery Management Plan (FMP) developed by the New England Fishery Management Council[18] and approved by the Federal government.

This began to change in 1993, when Congress passed the Atlantic Coastal Fisheries Cooperative Management Act (Atlantic Coastal Act or Act)[19] facilitating a state-oriented fishery management structure for American lobster and, in practical terms, strengthening the role of an organization known as the Atlantic States Marine Fisheries Commission[20] (Commission) in the development of management measures for the resource. Since passage of the first Atlantic Coastal Act American lobster regulations in 1999, management measures deemed necessary for the protection of the resource are advanced by the Commission through the use of amendments and addenda to the existing Interstate Fishery Management Plan (ISFMP) for American lobster. The Commission prepares these actions on an ongoing, as-needed basis, in consultation with the states and the Federal government. Once new measures are approved through the Commission process, states implement and enforce them. In turn, under the Act, the Federal government is asked to implement management measures for the American lobster fishery that are consistent with and supportive of the actions of the Commission.

Congress's reasons for changing Federal lobster management were straightforward: since approximately 80% of the fishery occurs in state waters, NMFS could not ensure that the Federal FMP, which covered only Federal waters, could accomplish the requisite management objectives under the Magnuson-Stevens Act to prevent overfishing. What was needed, and what the Atlantic Coastal Act provided, was a regulatory structure that more realistically reflected the joint state-Federal nature of the resource and the need for cooperative and coordinated management. Under this regime, Federal management of the

[17] 16 U.S.C. §§ 1801-1884, (MSA 2007).

[18] The fishery management council system was established by Congress under the Magnuson-Stevens Fishery Conservation and Management Act by Congress in 1976 (originally called the Fishery Conservation and Management Act) for the purpose of managing fisheries in a newly recognized exclusive economic zone (EEZ) between 3 and 200 miles offshore of the US coastline. Under the Act, eight regional fishery management councils serve as decision-making bodies that develop and recommend specific management measures in the form of fishery management plans, subject to approval and implementation by NMFS.

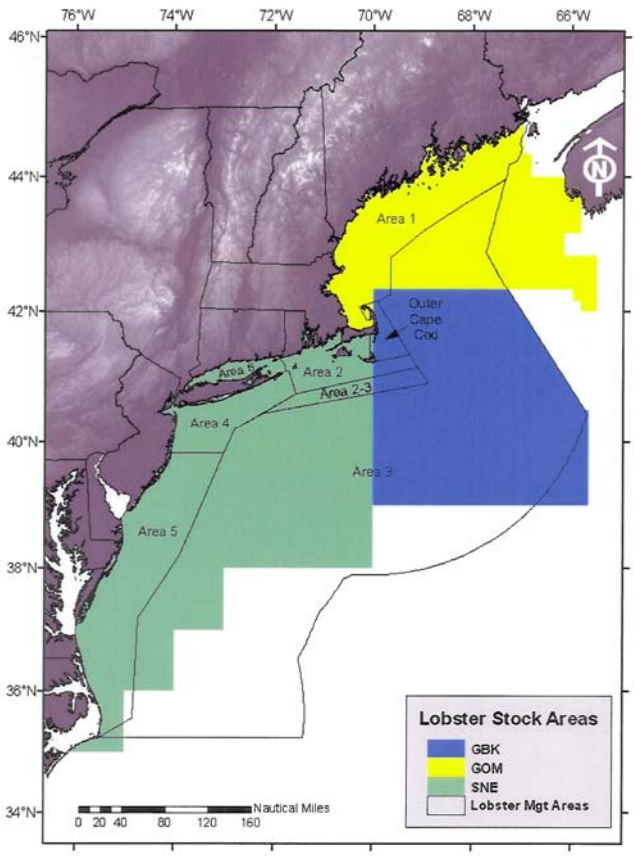
[19] 16 U.S.C. 5101-5109; Title VIII of Pub. L. 103-206, as amended, (ACFCMA 1993).

[20] The Atlantic States Marine Fisheries Commission was formed in 1942 by the 15 coastal states to improve interstate coordination in the protection and management of marine fisheries resources. It is a "deliberative" body, composed of representatives from the states and the Federal government, that serves to facilitate coordination among its members on matters of fishery management. Member states are Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, and Florida. In a legal sense, the Atlantic Coastal Act did not confer upon the Commission any new authority over state and Federal lobster fishery management. In practical terms, however, that Act provides a means by which recalcitrant states that do not implement necessary management measures approved by the Commission may be, through a deliberative process, subject to a Federal moratorium on fishing activities until such time that the management measures are put in place.

American lobster fishery thus is largely, though not exclusively, influenced by the management recommendations of the Commission.

One of the most important changes implemented under this new regime was the establishment of seven Lobster Conservation Management Areas (LCMAs): Area 1 - Inshore Gulf of Maine (GOM); Area 2 - Inshore Southern New England (SNE); Area 3 - Offshore waters; Area 4 - Inshore Northern Mid-Atlantic; Area 5 - Inshore Southern Mid-Atlantic; Area 6 - New York and Connecticut State Waters (primarily Long Island Sound); and Outer Cape Cod (OCC). All state and Federal management efforts since 1997 have been based on this LCMA-focused management structure.

Figure 1.1 - American Lobster Management and Stock Areas[21]



NMFS has prepared this Environmental Impact Statement (EIS) to address a number of management measures recently approved by the Commission for the American lobster fishery. Consistent with the Atlantic Coastal Act, the Commission has forwarded these measures to NMFS, with a recommendation that Federal regulations to support these measures be promulgated. Generally speaking, most of the recommendations submitted by the Commission focus on two strategies to control fishing effort in the American lobster fishery: 1) limiting the number of lobster permits in a management area, and 2) limiting

[21] See Stock Assessment Report No. 09-01 (Supplement) of the Atlantic States Marine Fisheries Commission, "*American Lobster Stock Assessment Report for Peer Review,"* 2009, www.asmfc.org, (ASMFC 2009a).

the number of traps fished by lobster permit holders. More specifically, the Commission's recommendations include the following:

- Measures that would limit the number of **permits**:
    - Cap the number of participants by limiting entry to a Lobster Management Area (proposed for LCMA 2 and OCC).
    - Authorize permits and associated trap allocations only to fishermen and/or vessels with a current or historic record of fishing in an LCMA.
    - Limit how many permits one entity (individual or corporation) can hold (*i.e.*, excessive share provisions).
- Measures that would limit the number of **traps**:
    - Deduct traps from a permit holder's trap allocation, primarily through the implementation of a "conservation tax," applied when Federal permits are sold or "transferred" within the fishery through an Individual Transferable Trap (ITT) program (discussed below).
    - Cap the number of traps a permit holder with multiple LCMA allocations can fish through the application of the "most-restrictive rule" (also discussed below).
    - Cap the number of traps a "dual permit holder" (someone with both a state and Federal permit) can fish by mandating that a fisher's fishing history, on which trap allocations are based, follow the Federal permit (i.e., prohibit the "splitting" of state and Federal fishing history, which would result in a proliferation of traps).

Individual Transferable Trap (ITT) program

The *ITT program*, as proposed, is meant to increase the business flexibility of lobster fishers to buy and sell lobster traps, while preserving the conservation benefits found within each LCMA's management program. The ITT program is generally a popular concept within the lobster industry because it would provide a business alternative for permit holders who for various reasons may wish to gain economic benefit by selling traps and "scaling down" their business operations. These measures, described briefly below, are more fully discussed in Chapters 2 and 4.

Currently, permit holders in certain LCMAs can transfer their lobster permits and all associated traps with the sale of a vessel, but do not have the option to sell portions of their trap allocation. The Commission's recommended measures would allow permit holders within those LCMAs to transfer blocks of traps without selling their permits. As part of this program, with each transfer, the number of traps allowed in the water would be reduced by either 10 or 20 percent, depending on the number of traps sold (a *conservation "tax"*).

1.1 PURPOSE AND NEED

The purpose of the proposed measures is to manage the American lobster fishery in a manner that maximizes resource sustainability[22], recognizing that Federal management occurs in consort with state management.

In order to achieve this purpose, NMFS needs to take action in response to recently approved state management measures that control effort within the fishery. These management measures seek to 1) promote economic efficiency[23] within the fishery while maintaining existing social and cultural features of the industry where possible and, 2) realize conservation benefits that will contribute to the prevention of overfishing of the American lobster.

1.1.1 Status of the American Lobster Fishery

American lobster (*Homarus americanus*) supports one of the most valuable commercial fisheries in the Northeast United States, with an annual estimated revenue in excess of $306 million in 2008 (NMFS, 2009b). The U.S. lobster resource occurs in continental shelf waters from Maine to North Carolina[24]. A recent peer-reviewed stock assessment for American lobster, prepared in 2005 and published by the ASMFC in 2006, identified three new biological stock units, delineated primarily on the basis of regional differences in life history parameters, such as lobster distribution and abundance, patterns of migration, location of spawners, and the dispersal and transport of larvae. These stock units are the Gulf of Maine (GOM), Georges Bank (GBK), and Southern New England (SNE).[25]

The U.S. lobster fishery is conducted in each of the three stock units -- GOM, GBK, and SNE. While each area has an inshore and offshore component to the fishery, GOM and SNE areas are predominantly inshore fisheries and the GBK area is predominantly an offshore fishery. The GOM stock is primarily fished by fishermen from the states of Maine, Massachusetts, and New Hampshire. The GBK stock is primarily fished by fishermen from Massachusetts and Rhode Island. The SNE stock is primarily fished by fishermen from the states of Connecticut, Massachusetts, New York, and Rhode Island, with smaller contributions from the states of New Jersey, Delaware and Maryland.

Through the late 1970s, total landings for the U.S. lobster fishery were relatively constant, at 14,000 mt. Since then, landings have more than doubled, reaching 37-38,000 mt in 1997-98 and then dropping to 33,000 mt in 2003. These landings are primarily composed of catch from nearshore waters (0 to 12 nautical miles).

GOM supports the largest fishery, constituting 76% of the U.S. landings from 1981 to 2007, and 87% since 2002. Landings in the GOM were stable between 1981 and 1989, averaging 14,600 mt, then increased dramatically from 1990 (19,200 mt) to 2006 (37,300 mt). Landings averaged 33,000 mt from 2000-2007.

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[22] This is consistent with the concept of "sustainability" as set forth in National Standard #1of the Magnusun-Stevens Fishery Conservation Management Act and is incorporated in the Atlantic Coastal Fisheries Cooperative Management Act, under which lies the Federal authority to manage lobster. The Magnusun-Stevens National Standards are set forth in greater detail under Section 2.1.

[23] "Economic efficiency refers to the point at which the added cost of producing a unit of fish (or lobster in this case) is equal to what buyers pay. Economic efficiency refers to a condition of minimal waste in the fishery and economy, when the difference between fishing costs and fishing revenue for the fishery as a whole is greatest, not when catch and/or revenue is maximized", (ASMFC 2002b).

[24] In addition to American lobster, the United States also has a spiny lobster fishery, which makes up a small percentage of the total U.S. landings. For purposes of this EIS, however, it is assumed that total U.S. landings are composed exclusively of American lobster.

[25] These units replace previously delineated boundaries, which were the GOM, Georges Bank and Southern New England Outer Shelf (GBS), and South of Cape Cod to Long Island Sound (SCCLIS) stock areas.

GBK constitutes the smallest portion of the U.S. fishery, averaging 5% of the landings from 1981 to 2007. From 1981-2002, landings from the GBK fishery remained stable (averaging 1,300 mt). Landings nearly doubled from 2003-2007, reaching a high of 2,400 mt in 2005, and they have remained high since.

SNE has the second largest fishery, accounting for 19% of the U.S. landings between 1981 and 2007. Landings increased sharply from the early 1980s to the late 1990s, reaching a time series high of 9,900 mt in 1997. Landings remained near the time series high until 1999, when the fishery experienced dramatic declines in landings. From 2000 to 2007, landings from the SNE accounted for only 9% of the U.S. total for American Lobster, reaching a time series low of 6% in 2004.

The most recent 2009 Stock Assessment Report concluded that "(t)he American lobster fishery resource presents a mixed picture, with stable abundance for much of the GOM stock, increasing abundance for the GBK stock, and decreased abundance and recruitment yet continued high fishing mortality for the SNE stock."[26]

More specifically, the 2009 stock assessment evaluated the status of the American lobster fishery in terms of stock abundance, fishing mortality, and fishery performance (i.e., fishing effort, as measured by number of traps, landings, mean length of catch, and gross CPUE), measuring these parameters against recommended reference points that include median reference abundance and median exploitation rate thresholds for sexes combined over the fixed time period of 1982-2003 in GOM and GBK and 1984-2003 in SNE. Conclusions about stock status would be determined by comparing the average reference abundance and average exploitation rate for sexes combined during the most recent three years to stock-specific threshold values.

Based on these reference points, "overfishing" would occur if the average effective exploitation rate during 2005-2007 were higher than the stock-specific median threshold. A stock would be "depleted" if average reference abundance during 2005-2007 fell below the median threshold level. In either of these cases, corrective management action should be implemented. The results of this evaluation are as follows:

Table 1.1 - 2009 Stock Assessment Results for American Lobster by Stock Area[27]

Variable	GOM	GBK	SNE
Effective exploitation			
Effective exploitation threshold	0.49	0.51	0.44
Recent effective exploitation 2005-2007	0.48	0.30	0.32
Effective exploitation below threshold?	YES	YES	YES
Reference abundance			
Abundance threshold	72,030,500	1,912,355	25,372,700
Recent abundance 2005-2007	116,077,000	4,698,670	14,676,700
Abundance above threshold?	YES	YES	NO

[26] See Stock Assessment Report No. 09-01 (Supplement) of the Atlantic States Marine Fisheries Commission, *"American Lobster Stock Assessment Report for Peer Review,"* 2009, www.asmfc.org, (ASMFC 2009a).
[27] Ibid.

The GOM stock is in favorable condition based on the recommended reference points. The stock is above the reference abundance threshold and slightly below the effective exploitation threshold. *Therefore the GOM lobster stock is not depleted and overfishing is not occurring.*

The GBK stock is in a favorable condition based on the recommended reference points. The stock is above the reference abundance threshold and below the effective exploitation threshold. *Therefore the GBK lobster stock is not depleted and overfishing is not occurring.*

The SNE stock is in poor condition based on the recommended reference points. The stock is below the reference abundance threshold and below the effective exploitation threshold. Model runs that incorporated increasing trends (50%-100%) in natural mortality (*M*) also predicted reference abundance below the median. *Therefore the SNE lobster stock is depleted but overfishing is not occurring.*

1.2 SCOPE AND ORGANIZATION OF THIS EIS

In considering the proposed management measures, the Secretary of Commerce (Secretary), through NMFS, is responsible for complying with a number of Federal regulations, including NEPA. As such, the purpose of the Environmental Impact Statement (EIS) is to provide an environmental analysis to support the Secretary's regulatory decision and to encourage and facilitate involvement by the public in the environmental review process.

This EIS assesses potential impacts on the biological and human environments associated with the establishment under Federal regulation of various effort control measures for the American lobster fishery. The actions evaluated with this DEIS are fundamentally management in nature and thus their potential impacts on fishery management will be evaluated herein, along with other impacts (e.g., biological and physical, social and economic - see Chapter 4). The chapters that follow describe the proposed management measures and potential alternatives (Chapter 2), the affected environment as it currently exists (Chapter 3), the probable consequences on the human environment that may result from the implementation of the proposed management measures and their alternatives (Chapter 4), and the potential cumulative impacts from the proposed measures and their alternatives (Chapter 5).

In developing this EIS, NMFS adhered to the procedural requirements of NEPA; the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations (CFR) 1500-1508)[28], and NOAA's procedures for implementing NEPA[29].

The following definitions will be used to characterize the nature of the various impacts evaluated with this EIS:

- *Short-term or long-term impacts.* These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term impacts are those that would occur only with respect to a particular activity or for a finite period. Long-term impacts are those that are more likely to be persistent and chronic.

- *Direct or indirect impacts.* A direct impact is caused by a proposed action and occurs contemporaneously at or near the location of the action. An indirect impact is caused by a proposed action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action. For example, a direct impact of erosion on a stream might include sediment-laden waters in the vicinity of the action, whereas an indirect impact of

[28] See Reference (CEQ 1969).

[29] NOAA Administrative Order 216-6, Environmental Review Procedures for Implementing the National Environmental Policy Act.

the same erosion might lead to lack of spawning and result in lowered reproduction rates of indigenous fish downstream.

- *Minor, moderate, or major impacts.* These relative terms are used to characterize the magnitude of an impact. Minor impacts are generally those that might be perceptible but, in their context, are not amenable to measurement because of their relatively minor character. Moderate impacts are those that are more perceptible and, typically, more amenable to quantification or measurement. Major impacts are those that, in their context and due to their intensity (severity), have the potential to meet the thresholds for significance set forth in CEQ regulations (40 CFR 1508.27) and, thus, warrant heightened attention and examination for potential means for mitigation to fulfill the requirements of NEPA.

- *Adverse or beneficial impacts.* An adverse impact is one having adverse, unfavorable, or undesirable outcomes on the man-made or natural environment. A beneficial impact is one having positive outcomes on the man-made or natural environment. A single act might result in adverse impacts on one environmental resource and beneficial impacts on another resource.

- *Cumulative impact.* CEQ regulations implementing NEPA define cumulative impacts as the "impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." (40 CFR 1508.7) Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time within a geographic area.

1.3 PUBLIC REVIEW AND COMMENT

Agency and public participation in the NEPA process promotes open communication between the public and the government and enhances decision making. All persons and organizations having an interest in the Secretary's decision on whether to promulgate the proposed regulations are encouraged to participate in the decision-making process. The actions set forth in this Final Rule have undergone extensive and open public notice, debate and discussion both at the Commission and Federal levels.

Commission Public Process

Typically, this public discussion of a potential Federal lobster action begins within the Commission process. Specifically, the Commission's Lobster Board often charges its Plan Development Team or Plan Review Team sub-committees of the Lobster Board to investigate whether the existing ISFMP needs to be revised or amended to address a problem or need, often as identified in a lobster stock assessment. The Plan Review and Plan Development Teams are typically comprised of personnel from state and federal agencies knowledgeable in scientific data, stock and fishery condition and fishery management issues. If a team or teams conclude that management action is warranted, it will so advise the Lobster Board, which would then likely charge the LCMTs to develop a plan to address the problem or need. The LCMTs, most often composed of industry representatives, will conduct a number of meetings open to the public wherein they will develop a plan or strategy, i.e., remedial measures, in response to the Lobster Board's request. The LCMTs then vote on the plan and report the results of their vote back to the Lobster Board. Minutes of the LCMT public meetings can be found at the Commission's website at http://www.asmfc.org under the "Minutes & Meetings Summary" page in the American Lobster sub-category of the Interstate Fishery Management heading.

After receiving an LCMT proposal, the Commission's Lobster Board will often attempt to seek specialized comment from both the Lobster Technical Committee and Lobster Advisory Panel before the

proposal is formally brought before the Board. The Technical Committee is composed of specialists, often scientists, whose role is to provide the Lobster Board with specific technical or scientific information. The Advisory Panel is a committee of individuals with particular knowledge and experience in the fishery, whose role is to provide the Lobster Board with comment and advice. Minutes of the Technical Committee and Advisory Panel can be found at the Commission's website at http://www.asmfc.org under the "Minutes & Meetings Summary" page in the American Lobster sub-category of the Interstate Fishery Management heading.

After receiving sub-committee advice, the Lobster Board debates the proposed measures in an open forum whenever the Board convenes (usually four times per year, one time in each of the spring, summer, fall and winter seasons). Meeting transcripts of the Lobster Board can be found at the Commission's website at http://www.asmfc.org under "Board Proceedings" on the "Minutes & Meetings Summary" page in the American Lobster sub-category of the Interstate Fishery Management heading. These meetings are typically scheduled months in advance and the public is invited to comment at every Board meeting. In the circumstance of an addendum, the Board will vote on potential measures to include in a draft addendum. Upon approving a draft addendum, the Lobster Board will conduct further public hearings on that draft addendum for any state that so requests. After conducting the public hearing, the Lobster Board will again convene to discuss the public comments, new information, and/or whatever additional matters are relevant. After the debate, which may or may not involve multiple Lobster Board meetings, additional public comment and/or requests for further input from the LCMTs, Technical Committee and Advisory Panel, the Lobster Board will vote to adopt the draft addendum, and if applicable, request that the Federal Government implement compatible regulations.

Federal Public Process

NMFS initiated the public scoping process for this action following action by the Commission with the approval of Addendum I in August, 1999. Addendum I was in response to Commission actions that established LCMTs and tasked those LCMTs to develop management programs suited to the needs of the LCMA while meeting the targets in the ISFMP. Following TC review of the plans, in Addendum I, the Board initiated a program directed towards controlling effort and began the process to establish historical participation and transferable trap programs that has evolved over several Commission addenda. In response to the Board action, on September 1, 1999, NMFS published an ANPR (64 FR 47756) notifying Federal permit holders that regulatory actions in the lobster fishery may involve further restrictions on access to LCMAs.

In follow up to additional Commission action in Addenda II and III, on September 5, 2002 (67 FR 56800), NMFS published a Notice of Intent (NOI) to prepare an EIS to evaluate Commission recommendations to limit future access in several LMCAs, including LCMA 3 and the OCLMA. This and subsequent NOIs included information on the proposed regulatory action; requested public comments on the scope of the EIS; and provided information on how the public could submit comments by mail, hand delivery, facsimile, or electronic means. Following Commission revisions to several relevant LCMA LAP/ITT provisions in Addenda IV through VI, NMFS published a ANPR/NOI on May 10, 2005 (70 FR 24495) of its' intent to move forward with regulatory actions based upon the redesigned LAP/ITT provisions in the ISFMP. A summary of the public scoping comments received an how they were address in this DEIS can be found in Appendix 15. On October 31, 2005, the Commission approved Addendum VII that further refined certain LAP/ITT in LCMA 2. However, the follow up implementation of the LAP/ITT measures at the state level identified additional problems that resulted in further evaluation of the plans by the Lobster Board in 2006 and 2007. Based on the delays, NMFS continued to work within the Commission process and updated Federal lobster permit holders of NMFS intention to take complementary action. (See Appendix 13, Notice to American Lobster Permit holders, dated June 12,

2007). Ultimately, the Board action resulted in additional refinements to the ISFMP, outlined in Addendum IX, and Addenda XII through XIV (see Table 2.1).

1.4 REGULATORY REQUIREMENTS

NMFS is the lead Federal agency for the proposed actions evaluated in this DEIS. Any regulations that result from these actions will be drafted under the Atlantic Coastal Act (ACA). Although the ACA is the primary regulatory driver behind the proposed management measures, requirements under numerous other Federal environmental laws concerning specific environmental resources are also triggered by the proposed measures and must be factored in to any final decision made by the agency. Examples of these include Section 7 of the Endangered Species Act (ESA), the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the Marine Mammal Protection Act (MMPA), and Section 307 of the CZMA. These requirements are discussed in detail in Sec. 6.0, "*Other Applicable Law*."

Chapter 2 – Detailed Description of Proposed Management Measures and Alternatives

DETAILED DESCRIPTION OF PROPOSED MANAGEMENT MEASURES AND ALTERNATIVES CHAPTER 2

2.0 BACKGROUND

As discussed in Chapter 1, the most recent stock assessment for American lobster resulted in a number of major conclusions**,** two of which are particularly significant to this action: 1) that portions of the fishery (specifically, the SNE stock unit) were "depleted," as evidenced by reduced stock abundance[30], and 2) that the number of traps being fished suggests that there is a high level of effort occurring in portions of the fishery.[31] Generally speaking, state and Federal efforts to address these problems fall within two types of management actions: 1) broodstock measures, which focus on abundance and mortality issues and rely on restrictions limiting the size of the lobsters that can be landed so that egg-producing females are protected and 2) effort-control measures, which have conservation benefits, but also focus on economic efficiency issues[32] and rely on restrictions that limit access to the fishery through the number of permits and traps allowed. The Commission has passed addenda that establish various broodstock measures for the states and these measures either have been addressed already or will be addressed by NMFS through separate actions under NEPA and the Federal rulemaking process. The focus of this EIS is on effort control measures—and, in particular, measures recently approved by the Commission limiting access to the fishery and certain associated business and operational practices therein. Following a brief discussion of limited access as it has been applied to the lobster fishery to date, the rest of this chapter will identify the Commission-approved management measures to be analyzed within this DEIS and their alternatives.

Limiting Access into the Lobster Fishery

The concept of controlling lobster fishing effort by limiting access to historical fishers is not new. Specifically, in 1994, NMFS generally limited access into the Federal lobster fishery to those who could document participation in the fishery before 1991 (59 FR 31938 – June 21, 1994). Years later, in August 1999, the Commission passed Addendum 1, which limited access to LCMAs 3, 4 and 5 to only those who could document fishing history in those areas. Subsequent Commission addenda similarly attempt to control effort by limiting access to other LCMAs (see Table 2.1).

[30] The 2009 American Lobster Stock Assessment states, "(t)he SNE stock is in poor condition based on the recommended reference points," and that portions of the GOM stock unit (statistical area 514) "….continued to experience very high exploitation rates and declines in recruitment and abundance since the last assessment", (ASMFC 2009a).

[31] Ibid.

[32] See Footnote 23 on economic efficiency.

Table 2.1 - Limited Entry

Area	Commission Action[33]	Corresponding Federal Action
EEZ	March 1994 - Amendment 5[34]	June 21, 1994 (59 FR 31938)
LCMA 6	1995 – by State action	
LCMA 3	August 1999 – Addendum 1	March 2003 (68 FR 14902)
LCMA 4	August 1999 – Addendum 1	March 2003 (68 FR 14902)
LCMA 5	August 1999 – Addendum 1	March 2003 (68 FR 14902)
LCMA OCC	February 2002 – Addendum III	Under Analysis
LCMA 2	December 2003 – Addendum IV[35]	Under Analysis
LCMA 3	March 2004 – Addendum V	Under Analysis
LCMA 2	February 2005 – Addendum VI	Under Analysis
LCMA 2	November 2005 – Addendum VII	May 10, 2005 (70 FR 24495)
LCMA 2	October 2006 – Addendum IX	Under Analysis
All LCMAs	February 2009 – Addendum XII	Under Analysis
LCMA OCC	May 2008 – Addendum XIII	Under Analysis
LCMA 3	May 2009 – Addendum XIV	Under Analysis
LCMA 1	November 2009 – Addendum XV	January 2, 2009 (74 FR 67)

Limited Access Criteria

In limiting access since approval of Amendment 3 in 1997, the Commission has used a similar step-by-step approach in all of the LCMAs (except for LCMA 1, where access has thus far remained constant). First, participants are qualified based upon their ability to document a history of fishing within the LCMA; second, those who qualify are allocated some number of traps within a given management area, based upon their ability to document the level of past fishing effort in the LCMA.[36] Moreover, for three of the LCMAs (LCMAs 2, 3, and the Outer Cape) the Commission has introduced and approved a third step, individual transferable trap (ITT) programs, in which permit holders can transfer full or partial trap allocations among themselves.

Despite some similarities in approach across LCMAs, including the use of past fishing performance as a cornerstone for qualifying and allocating to fishers, there are differences in how the states have applied Commission-approved criteria for limiting access within the various LCMAs. For example, depending on the LCMA, different time periods are used to establish fishing history. LCMAs 3, 4, and 5, for example, used the time period from 1991-to-1999; LCMA 6 used 1995-to-1998; the Outer Cape LCMA uses 1999-to-2002; and Area 2 uses 1999-to-2003. Other examples of differences in the LCMA programs include

[33] All Addenda can be found at www.asmfc.org, under Interstate Fisheries Management, American Lobster. The following are attached to this EIS as appendices: Addendum VI (Appendix 1), Addendum VII (Appendix 2), Addendum XII (Appendix 3), Addendum XIII (Appendix 4), and Addendum XIV (Appendix 5).

[34] New England Fishery Management Council document. This action occurred prior to the 1999 transfer of Federal lobster management to the Commission under the Atlantic Coastal Act.

[35] Addendum IV was rescinded in Addendum VI and then revised and approved in Addenda VII (Appendix 2) and XII (Appendix 3).

[36] Through various addenda to the ISFMP for American lobster, history-based effort control plans based on fishery performance have been enacted by NMFS (Areas 3, 4, and 5) and states (MA in Outer Cape Cod; NY and CT for Area 6; and MA, RI, CT,& NY for Area 2). The only Lobster Management Area currently without a history-based effort control plan is Area 1. Addendum XV, approved in November 2009, outlines Commission criteria for a history-based plan for Federal permit holders in Area 1.

the following: the use of appeals (not mentioned in the Outer Cape LCMA program, but set forth in some detail in the Area 2 program); the number of traps allowed to be transferred and the percentage of trap reduction levied when traps are transferred (e.g., higher in LCMA 2 than in LCMA 3); and the nature of the documentation allowed for use by an applicant (e.g., a document hierarchy for LCMAs 3, 4 and 5 as suggested in Addendum 1, compared to catch report statistics for the LCMA OCC in Addendum 3). NMFS previously identified documentation as a significant concern when developing its complementary limited access program for LCMAs 3, 4 and 5[37]. Specifically, different states have different reporting requirements and thus, different documents that contain different information. Some states, in fact, have no reporting requirements and thus no documentation. The advent of the Commission's Mandatory Reporting Program (Addendum X – February 2007) might help resolve this lack of uniformity in the future, but in the meantime, the issues identified in the Area 3, 4 and 5 limited access FEIS[38] remain relevant today.

The Commission came to realize that the seemingly minor differences in how the states administered the various limited access programs and the management inconsistencies these differences created across LCMAs had the potential to undermine the overall effectiveness of the Lobster ISFMP (also referred to as the Lobster Plan). As the affected states began the Area 2 qualification process for their residents in 2006, variations in approach by different states led to concerns of inconsistent application of the Addendum VII criteria. Ultimately, in response, a "white paper" was developed by a technical review committee in October 2007 identifying many of the inconsistencies left unaddressed by previous Commission addenda and ultimately forming the basis of Addendum XII, passed by the Commission in February 2009.[39]

Addendum XII

Addendum XII calls for the states and NMFS to adopt a uniform approach when implementing limited access programs. Specifically, the document seeks all jurisdictions to treat fishing history the same way. In particular, the document identifies the following:

> Despite the overall similarity of the effort control plans, administration of six [LCMA's with] similar, but not identical, plans involving potential regulations by 12 states, from Maine to North Carolina and NOAA Fisheries, is obviously complex and challenging. Not only must all jurisdictions implement each addenda, but they must implement each addenda in a substantially identical fashion lest the overall integrity of the plan be compromised and the effectiveness of the measures be lost. Due to the complexity of this program, the development and ongoing operation of a transferable trap allocation tracking systems is identified as a fundamental requirement to the effective administration of this program.
>
> ….
>
> In order to ensure that the various LCMA-specific effort control plans remain cohesive and viable, and that one jurisdiction's interpretation of a plan does not undermine the implementation of another jurisdiction, this addendum does three things: First, it clarifies certain foundational principles present in the Commission's overall history-based trap allocation effort control plan. Second, it redefines the most restrictive rule. Third, it establishes management measures to ensure that history-based trap allocation effort control plans in the various LCMAs are implemented without undermining resource conservation efforts of neighboring jurisdictions or LCMAs.[40]

[37] See Final Supplemental Environmental Impact Statement (FSEIS), October 30, 2002, p. 32 (NMFS 2002a).

[38] See Final Environmental Impact Statement (FEIS) November 8, 2002, (67 FR 68128).

[39] This issue is discussed in greater detail in Chapter 4. See Addendum XII (Appendix 3) and the Commission's white paper (Appendix 6).

[40] See Addendum XII page 4, attached to this DEIS as Appendix 3.

Addendum XII thus is important, among other reasons, for its attempt to address management inconsistencies across LCMA jurisdictions. But while it is a necessary step, NMFS recognizes that problems associated with a lack of uniformity will likely remain given that the vast majority of involved states qualified permit holders and allocated traps long before the Addendum was approved. Further, NMFS has already noted that states have interpreted aspects of the Commission's LCMA 2 and OCC limited entry programs differently (e.g., Rhode Island's LCMA 2 appeal criteria is more liberal than that of its LCMA 2 neighbor, Massachusetts) and the states have likely applied differing levels of circumspection in their review of involved qualification and allocation data. Many of these complexities are discussed in detail in Chapter 4.

2.1 ALTERNATIVES

NEPA requires that any Federal agency proposing a major action consider reasonable alternatives to the proposed action. The evaluation of alternatives in an EIS assists the Secretary in ensuring that any unnecessary impacts are avoided through an assessment of alternative ways to achieve the underlying purpose of the project that may result in less environmental harm.

To warrant detailed evaluation by NMFS, an alternative must be reasonable[41] and meet the Secretary's purpose and need (see Section 1.2). Screening criteria are used to determine whether an alternative is reasonable. The following discussion identifies the screening criteria used in this EIS to evaluate whether an alternative is reasonable; evaluates various alternatives against the screening criteria (including the proposed measures) and identifies those alternatives found to be reasonable; identifies those alternatives found not to be reasonable; and for the later, the basis for this finding. Alternatives considered but found not to be reasonable are not evaluated in detail in this EIS.

Screening Criteria – To be considered "reasonable" for purposes of this EIS, an alternative must meet the following criteria:

- *An alternative must be compatible with the ISFMP for lobster and consistent with its goals.*[42] The ISFMP embodies the state management directives for the fishery. It would make no practical sense to advance Federal management measures that conflict with the efforts of the states, which are relied upon for the overall success of the fishery. Given this, while there may be other ways, not identified here, to reduce fishing effort in the

[41] "Section 1502.14 (of NEPA) requires the EIS to examine all reasonable alternatives to the proposal. In determining the scope of alternatives to be considered, the emphasis is on what is "reasonable" rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are *practical or feasible from the technical and economic standpoint and using common sense*, rather than simply desirable from the standpoint of the applicant." (40 Questions) (emphasis added)

[42] The plan's overall objectives were set forth in Amendment 3. They are as follows:

(1) Protect, increase or maintain, as appropriate the brood stock abundance at levels that would minimize risk of stock depletion and recruitment failure;
(2) Develop flexible regional programs to control fishing effort and regulate fishing mortality rates;
(3) Implement uniform collection, analysis and dissemination of biological and economic information and improve understanding of the economics of harvest;
(4) Maintain existing social and cultural features of the industry wherever possible;
(5) Promote economic efficiency in harvesting and use of the resource;
(6) Minimize lobster injury and discard mortality associated with fishing;
(7) Increase understanding of biology of American lobster, improve data, improve stock assessment models;
improve cooperation between fishermen and scientists;
(8) Evaluate contributions of current management measures in achieving objectives of the lobster plan;
(9) Ensure that changes in geographic exploitation patterns do not undermine success of Commission management program;
(10) Optimize yield from the fishery while maintaining harvest at a sustainable level;
(11) Maintain stewardship relationship between fishermen and the resource.

American lobster fishery, it is in the Federal interest to focus on measures that will support coordinated management of this state/Federal resource.

- *An alternative must be consistent with the 10 National Standards set forth in the Magnuson-Stevens Act.*[43]

- *An alternative must be administratively feasible*. The costs associated with implementing an alternative cannot be prohibitively exorbitant or require unattainable infrastructure, such as databases or additional staffing.

- *An alternative cannot violate other laws (e.g., ESA, MMPA).*

The Secretary proposes to act on the Commission's recommendations to promulgate regulations designed to control fishing effort in the American lobster fishery. Some of the measures proposed are specific to a particular LCMA, while other measures would apply to multiple LMCAs for the American lobster fishery. All of the measures would limit access (i.e., permit authorizations) to certain LCMAs, limit the number of traps, or both.

[43] The 10 National Standards are:
(1) Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.
(2) Conservation and management measures shall be based upon the best scientific information available.
(3) To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.
(4) Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, (Continued at foot of next page) such allocation shall be: (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.
(5) Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.
(6) Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.
(7) Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.
(8) Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to: (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.
(9) Conservation and management measures shall, to the extent practicable: (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.
(10) Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

2.1.1 LCMA Outer Cape Cod (OCC) Limited Access Alternatives

Table 2.2 - Criteria Used For Outer Cape Area Limited Access Alternatives

	Alternative 1 – No Action	Alternative 2 – Commission (Preferred Option)	Alternative 3 – Qualify Only
QUALIFICATION Criteria for Future access into the Area	None - Status Quo: Existing regulations apply – open access to all with a Federal lobster permit	Yes – Qualification Required – Future participation based on 1999-2001 fishing history	Yes – Qualification Required – Future participation based on 1999-2001 fishing history
ALLOCATION Criteria for Future Trap Allocation	None - Status Quo: Up to 800 Traps – subject to more restrictive state trap limits	Yes – Qualification Required – Based on highest effective traps fished during the 2000-2002 fishing history	None - Status Quo: Up to 800 Traps – subject to more restrictive state trap limits

Overview

In February 2002, the Commission established a state-level limited access program in the OCC LCMA "in order to control the expansion of fishing effort" in that area.[44] The Commission's limited access plan envisioned a two-step entry process: first, qualify individuals for access into the LCMA based on their fishing history in that area and, second, allocate traps to the qualified individuals based upon the number of traps they historically fished within the LCMA.

In December 2003, Massachusetts proposed a variation on this program that the Commission determined was the "conservation equivalent" of their own and thus allowable under the ISFMP. The Massachusetts variation focused on the allocation formula, for which it shifted the involved time period forward a year and used lobster pounds landed as the metric to determine allocation.[45] With the approval by the Commission of Addendum XIII in May, 2008 (Appendix 4), the Massachusetts program was adopted OCC-wide not simply as a conservation equivalent, but as replacing, and thus becoming, the official Commission OCC plan itself. Details of this and other OCC limited entry alternatives are found below and in Chapter 4, *Environmental Impacts*.

[44] Addendum III, Section 2.1.7.2, February 20, 2002, (ASMFC 2002a).

[45] Massachusetts's conservation equivalency is significant because the location of the OCC LCMA suggests that the vast majority of potential participants would be Massachusetts residents. In other words, if the only participants are Massachusetts residents, then the Massachusetts plan would not simply be an equivalent to the Commission Plan, it would, for all practical purposes, be the Plan itself.

Alternative 1 – No Action

Under this alternative, no Federal limited access program would be enacted in the OCC LCMA. As such, American lobster in the OCC LCMA would continue to be managed in Federal waters under trap limit provisions of existing regulations under the Atlantic Coastal Act. The fishery would remain open access to all who hold a Federal lobster permit and individuals would be able to fish up to 800 traps (subject to the existing Most Restrictive Rule)[46].

Any vessel issued an American Lobster limited access permit fishing with traps would continue to annually declare to NMFS in which lobster management area or areas the vessel intends to fish. Once a vessel has declared the management area(s), no changes may be made for the remainder of the fishing year unless the vessel(s) becomes a replacement vessel for another qualified vessel. Under existing regulations (50 CFR Sec. 697.4(a)(7)), all qualified vessels may elect to fish with traps in currently "open access" LCMAs 1, 2 and the OCC. In addition, vessels qualified to fish in limited-access LCMAs 3, 4 and 5 may continue to designate those areas and trap allocations for those areas would be based according to each area's requirements.

Alternative 2 – Commission Alternative (Preferred Alternative)

Under this alternative (formerly the *Massachusetts Conservation Equivalency* proposal), Federal regulations match measures recently approved by the Commission under Addendum XIII (Appendix 4).

Qualification Scheme

There will be a moratorium on new commercial permits to harvest lobster by use of pots and SCUBA in the OCC LCMA. Those with a fishing history in the OCC LCMA will be qualified to continue based upon verifiable landings of lobster caught by traps or by hand using SCUBA gear from the OCC LCMA in any year from 1999-2001. "Verifiable" means that fishers can demonstrate that they satisfy each of the following three criteria:

1. Use of LCMA OCC was specified on their license applications in 2003;
2. Landings were reported in at least one of the OCC statistical areas[47] in 1999, 2000, or 2001;
3. They reported fishing traps in at least one of the OCC statistical areas in 1999, 2000 or 2001;

Rationale

In choosing the above dates, the Commission sought to prevent the expansion of fishing effort into the OCC. Specifically, the years 1999 – 2001 were chosen because they were indicative of a historic presence in the area. The year 2003 was added as a requirement by Massachusetts because it because it suggested active, present participation in the fishery as of the date of Massachusetts' conservation equivalent regulation (December 2003). The Commission adopted the 2003 date when it adopted the Massachusetts plan as its own. In so doing, the Commission acknowledged that the relative geographical isolation of the OCC suggested that the vast majority of OCC lobster fishers would likely be Massachusetts residents and thus already beholden to the Massachusetts conservation equivalent plan. Although NMFS has had Federal permit holders from many states designating the OCC, no other state received an OCC request for limited entry from one of its citizens, which suggests that, in fact, few if any OCC lobster fishers are citizens of states other than Massachusetts. Reasons why Federal lobster fishers

[46] See Chapter 4.1 of this DEIS and Addendum XII (Appendix 3), Section 4.2 for a detailed description of the Most Restrictive Rule.

[47] Each biological stock unit is composed of "statistical areas." See Figure 5.1 for statistical areas.

might designate an LCMA despite having no intent or ability to fish there are discussed in greater detail later in this DEIS (see Section 3.3.1)

Allocation Scheme

Individual trap allocations will be established in accordance with the following measures:

1. Trap allocations for use in the OCC LCMA shall be assigned based on the highest annual level of Effective Traps Fished during 2000, 2001 and 2002.

2. Effective Traps Fished shall be the lower value of the maximum number of traps reported fished for a given year compared to the predicted number of traps that is required to catch the reported poundage of lobsters for a given year during 2000, 20001 and 2002.

3. For coastal lobster permit holders who fished for lobster primarily by hand using SCUBA gear, Effective Traps Fished shall be the annual predicted number of traps that is associated with the permit holder's reported poundage of lobsters during the performance years 2000 – 2002 (See Considered But Rejected).

4. The value for predicted number of traps shall be based on a MA DMF[48] published analysis of traps fished and pounds landed for the OCC LCMA.

5. It shall be unlawful to fish more than 800 traps aboard any vessel involved in the commercial lobster fishery in the OCC LCMA, regardless of the number of fishermen holding coastal or offshore commercial lobster permits on board said vessel.

6. Appeals to eligibility or trap allocations shall only be considered based on technical data errors and/or miscalculations such as on catch reports.

Rationale

The Commission chose to allocate based upon "Effective Traps Fished" because it felt that it was more reflective of actual fishing effort in the area. There are reasons why pounds of lobster landed might be more indicative of actual traps fished than simply accepting documentation of the number of traps employed by a fisher. First, the Commission found that many individuals, hearing about the potential OCC limited access measures, speculated and bought more trap tags and/or reported fishing more traps than they actually fished. This is similar to the LCMA designation speculation referred to above and discussed in detail later in Section 3.3 of this DEIS. More specifically, once word got out that managers might limit entry and allocate traps some time in the future based upon documentation of fishing practices in the past, some lobster fishers started ordering more trap tags or putting more traps in the water simply to ensure that their future limited access documentation would reflect a maximum trap allocation. Second, certain lobster fishers put some traps in the water not so much to actively fish, but instead, to hold bottom. Holding bottom is analogous to the concept of squatter's rights. In other words, certain highly productive bottom can become so overcrowded with traps that it becomes impossible to set new traps into the area when lobster migrate through it. Accordingly, some lobster fishers will occasionally set significant numbers of traps in a seasonal hot spot simply to be in position when the area later becomes productive. Often, these traps are not being baited, nor are they being regularly tended; the traps

[48] See the Comprehensive Status Report, "*Reducing Trap Effort in the Outer Cape Lobster Conservation Management Area Fishery through an Effort Control Plan*", December 2003-July 2008, (MA DMF 2008b).

are simply occupying bottom. Accordingly, the Commission decided that it would not allocate traps designated and/or used for such purposes.

Alternative 3 – Qualify Only

Under this alternative, applicants would be qualified, thus limiting entry into the LCMA, but no new trap allocations would be made.

Qualification Scheme

Applicants would be qualified using the same criteria as those used under Alternative 2, *Commission Alternative*.

Allocation Scheme

There is no new allocation scheme enacted under this alternative. As such, American lobster in the OCC LCMA would continue to be managed in Federal waters under trap limit provisions of existing regulations under the Atlantic Coastal Act. Qualified individuals would be able to fish up to 800 traps (subject to the existing Most Restrictive Rule).

Considered-But-Rejected: State Qualification of Scuba Divers in the Outer Cape

In 2003, the Lobster Board granted a Massachusetts request to allow Massachusetts SCUBA divers a trap allocation even though the SCUBA divers never previously fished with lobster traps. NMFS considered the option of granting SCUBA divers a trap allocation, but rejects it as a viable alternative.

As a preliminary matter, granting trap allocations to SCUBA divers is generally contrary to the Commission's limited entry approach and would create inconsistencies amongst lobster management areas. At present, all Commission lobster limited entry programs in all areas, including the OCC, have limited entry criteria based on a gear specific fishing history, i.e., all future limited access privileges are based on proof of fishing 'with traps,' and the individual trap allocation in each program is based on the number of 'traps' fished over some specified time period. NMFS incorporated this approach in its previous rulemaking that established a limited entry and individual trap allocation in Areas 3, 4, and 5 (68 FR 14925, March 27, 2003). No other LCMA has a SCUBA exemption. In fact, the OCC's SCUBA exemption was not even a part of the original LCMA OCC plan, but instead was included as a conservation equivalent before eventually being more formally identified in Addendum XIII.

Massachusetts' OCC SCUBA exemption does not require compatible Federal regulations. In reality, the Massachusetts exemption is not about SCUBA diving at all. With or without the exemption, SCUBA divers would be able to dive and collect lobsters in the Federal waters of the OCC just as before. They simply would not be able to convert their SCUBA catch history into Federal trap catch history - a negligible impact given that these individuals did not historically fish with traps in this area anyway. These SCUBA divers could, however, use their Massachusetts exemption to set their Massachusetts trap allocation in state waters.

Accordingly, NMFS does not believe it prudent to start creating exemptions to the historical basis of its lobster area limited access programs. The present SCUBA exemption is limited to Massachusetts divers and contained within state waters of the OCC. This exemption can exist without compatible Federal regulations. Therefore, NMFS does not believe it wise to create a new trap allocation program based upon SCUBA diving history in the Federal waters of the OCC.

Conclusion

Except for the No Action alternative, all of the alternatives identified above appear to meet the screening criteria established under Section 2.1 and thus are being carried forward for detailed review. In particular, all of the alternatives identified, except for No Action, are consistent with the ISFMP for American lobster and compatible with its goals. Alternative 2 is consistent with the Commission ISFMP on its face as it seeks to implement the OCC Limited Access Plan verbatim[49], while Alternative 3 implements the first step of the OCC Limited Access Plan (i.e., qualification).

[49] We note that Alternative 2, the *Commission Alternative*, potentially discriminates against permit holders from other states insofar as it applies Massachusetts standards to all Federal permit holders (a possible *National Standard* violation under the Magnuson-Stevens Act). NMFS has repeatedly stated in the past that Federal lobster regulations do not differentiate based upon a person's state citizenship and that its objective would be to identify a "one standard" approach that would comply with the national Standards and at the same time be consistent with the Lobster ISFMP. To the extent NMFS publishes a Proposed Rule based upon Alternative 2, one might expect that Massachusetts documentation would be allowed, perhaps even a presumptive part of the documentary proof, but likely not the exclusive proof. Accordingly, the alternative is not eliminated for this reason, in deference to the Commission and for comparative purposes. Documenting historical participation is discussed further in Chapter 4, Section 4.1.

2.1.2 LCMA 2 Limited Access Alternatives

Table 2.3 - Criteria Used for Area 2 Limited Access Alternatives

	Alternative 1 – No Action	Alternative 2 – Commission (Preferred Option)	Alternative 3 – Qualify Only
QUALIFICATION Criteria for Future Access into the Area	None – Status Quo: Existing regulations apply – Open access to all with a Federal lobster permit	Yes – Qualification Required – Future participation based on 2001-2003 fishing history	Yes – Qualification Required – Future participation based on 2001-2003 fishing history
ALLOCATION Criteria for Future Trap allocation	Status Quo - Fish up to 800 traps – subject to existing Most Restrictive Rule.	Yes – Qualification Required –Based on 2001-2003 fishing history	None - Status Quo: Up to 800 traps – Subject to more restrictive state trap limits

Overview

From 2002-2003, scientific findings showed that a significant downturn in the American lobster stock within LCMA 2 was taking place. In response, the Commission began to formulate, through various addenda, effort control measures on an emergency basis.[50] While some of these measures have already been implemented by the states, the Commission's state-level program overall has continued to evolve through various addenda as conditions within the fishery have become more clearly understood (see Table 2.1). Further, as discussed in Chapter 1, the most recent peer-reviewed stock assessment for American lobster reconfirmed that LCMA 2's stock is overfished and that overfishing is occurring, as reflected in its conclusions regarding the SNE biological stock unit.

The most recent state-level effort control plan for LCMA 2 is the Commission's second attempt at an Area 2 limited access program. The Commission's first attempt was set forth in Addendum IV, passed in December 2003. Ultimately, however, Addendum IV's program proved too difficult to implement and was thought to potentially increase effort in Area 2. Accordingly, the Commission quickly withdrew the program in February 2005 before it could be implemented.[51]

During this time, conditions in Area 2 had deteriorated to the point that effort reduction was already taking place naturally. In other words, the recent lobster downturn had forced so many boats out of business, that fishing effort had already been naturally reduced by simple market forces. Accordingly, lobster fishers surmised that if a revised Area 2 limited access program could capture that attrition in the industry, then no further effort reductions would be needed. The Commission agreed and implemented such a limited access program in Addendum VII in November, 2005.

[50] The Commission increased the Area 2 legal minimum size by emergency action in February 2003. See Addendum VII (Appendix 2), Section 2.0 (ASMFC 2005).
[51] The Commission withdrew the Plan in Addendum VI. See Addendum VI (Appendix 1), Section 1.0 (ASMFC 2004b).

Similar to the OCC limited access program, LCMA 2's effort control program established a two-step entry process: first, qualify individuals into the area according to their fishing history in the area; and second, allocate traps to the qualified individuals based upon the number of traps they historically fished.

The specifics of the Commission's LCMA 2 plan, and its alternatives, are set forth below.

Alternative 1 – No Action

Under this alternative, no Federal limited access program would be enacted in LCMA 2. As such, American lobster in the LCMA 2 would continue to be managed in Federal waters under trap limit provisions of existing regulations under the Atlantic Coastal Act. The fishery would remain open access to all who hold a Federal lobster permit and individuals would be able to fish up to 800 traps (subject to the existing Most Restrictive Rule).

Any vessel issued an American lobster limited access permit fishing with traps would continue to annually declare to NMFS in which lobster management area or areas the vessel intends to fish. Once a vessel has declared the management area(s), no changes may be made for the remainder of the fishing year unless a vessel becomes a replacement for another qualified vessel. Under existing regulations (50 CFR Sec. 697.4(a)(7)), all qualified vessels may elect to fish with traps in currently "open access" LCMAs 1, 2 and the OCC. In addition, vessels qualified to fish in "closed access" LCMAs 3, 4 and 5 may continue to designate those areas and trap allocations for those areas would be based according to each area's requirements.

Alternative 2 – Commission Alternative (Preferred Alternative)

Qualification Scheme

According to Addendum VII, the following measures would be implemented to control effort in LCMA 2:

1. There will be a moratorium on new permits for commercial fishing of lobster traps.

2. No person shall land lobster in any state taken from pots in LCMA 2 unless that person has been issued an LCMA 2 pot allocations by their home state.

3. Individuals can qualify for access in LCMA 2 according to their documented LCMA 2 landings history from 2001-2003. If an LCMA 2 fisher had been incapable of fishing during the 2001-2003 fishing years, that individual could apply for a hardship that would allow them to use landings from 1999 and 2000 as the basis for qualification.

Rationale

In choosing the above dates, the Commission sought to cap fishing effort in Area 2 at recent levels. In so doing, the Commission's rationale was similar, but not identical, to the rationale it employed in setting the access dates for the LCMA OCC discussed earlier in this DEIS section. Similar to the OCC Limited Access Program, the Commission wanted to grant access to those with past trap fishing history in LCMA 2, while excluding speculators and/or individuals who might have a history of LCMA 2 permit designations, but little, if any, actual fishing history there.

Unlike the LCMA OCC access dates, however, the LCMA 2 dates were chosen in order to capture the attrition that occurred in the fishery during the downturn years in 2001-2003. In certain limited circumstances, individuals could use different qualifying years – i.e., 1999 and 2000 – but the Commission noted that 1999 and 2000 were not downturn years and fishing effort remained elevated. Therefore, excessive reliance on 1999 and 2000 fishing histories could subvert the Plan's underlying premise - i.e., to capture the attrition that had recently occurred – and undermine the effectiveness of the Area 2 Plan. Accordingly, the Commission limited the use of the 1999-2000 dates only to those who failed to qualify using the 2001-2003 time periods due to documented medical issues or military service.[52]

Allocation Scheme

Individual trap allocations will be established in accordance with the following measures:

1. Trap allocations for use in LCMA 2 shall be assigned based on the highest annual level of Effective Traps Fished during 2001, 2002 and 2003.

2. Effective Traps Fished shall be the lower value of the maximum number of traps reported fished for a given year compared to the predicted number of traps that is required to catch the reported poundage of lobsters for a given year during 2001, 2002 and 2003. "Predicted Traps Fished" are calculated for 2001-2003 from an individual's total landings in each of those years using a regression relationship for LCMA 2.

3. Predicted Traps Fished and a state's most accurate Calculated or Reported Traps Fished is compared for each year and the lower value would be the "Effective Traps Fished" values.

4. Trap allocation in the highest value of the three annual "Effective Traps Fished" values.

Rationale

The rationale underlying the use of "effective traps fished" is similar to the rationale used in the OCC limited access program. In short, the Commission found that permit designations and trap tag orders might not accurately reflect actual fishing effort in LCMA 2 due to practices such as speculation and holding of ground. These practices were discussed in greater detail in the earlier discussion of the Commission OCC alternative, above. In the Area 2 Program, the Commission determined that actual lobster landings better reflected the amount of traps fished.[53]

The Commission tested its Program's premise scientifically and found that the regression formula used to calculate effective traps fished suggested good correlation between the theory and data. This regression analysis was vetted through intensive scientific debate and peer review. Ultimately, the Program was determined to be scientifically sound, although it was noted that the criteria favored full-time lobster fishers. The Commission noted this point, but made the policy determination to use the criteria

[52] Unfortunately, information suggests that the involved states may have interpreted aspects of Addendum VII differently, so rote adherence to Addendum VII may not necessarily result in substantially identical criteria even among jurisdictions that use Addendum VII as a regulatory template. NMFS's dilemma in this regard is discussed in greater detail in Chapters 1, 3, and 4 of this document. The Commission's Addendum VII plan, including LCMA 2 regression curves, may be found in Appendix 2 or at www.asmfc.org under Interstate Fisheries Management, then clicking "American lobster."

[53] See Addendum VII (Appendix 2), which states that total landings must be used because existing landings data does not distinguish the percentage caught in LCMA 2 versus other areas. "…a permit holder's total landings during the time period constitutes the best available information across all management jurisdictions and are the authorized basis for meeting the purposes of this plan."

nevertheless. The Commission's regression curves can be found on page 11 of Addendum VII. A technical review of the Commission's regression formula can be found in Appendix 7.

Alternative 3 – Qualify Only

Qualification Scheme

Individual applicants would qualify to fish according to the criteria set forth under Alternative 2, *Commission Plan*: individuals can qualify for access into LCMA 2 according to their documented LCMA 2 landings history from 2001-2003. If an LCMA 2 fisher had been incapable of fishing during the 2001-2003 fishing years, then that individual could apply for a hardship that would allow them to use landings from 1999 and 2000 as the basis for qualification.

Allocation Scheme

There is no new allocation scheme enacted under this alternative. As such, American Lobster in the LCMA 2 would continue to be managed in Federal waters under trap limit provisions of existing regulations under the Atlantic Coastal Act. Qualified individuals would be able to fish up to 800 traps (subject to the existing Most Restrictive Rule)[54].

Conclusion

Except for the No Action alternative, all of the alternatives identified above appear to meet the criteria established under Section 2.1, above, and thus are being carried forward for detailed review. In particular, all of the alternatives identified above, except for No Action, are consistent with the ISFMP for American lobster and compatible with its goals. Alternative 2 is consistent with the Commission ISFMP on its face as it seeks to implement the OCC Limited Access Plan verbatim[55], while Alternative 3 implements the first step of the OCC Limited Access Plan (i.e., qualification).

[54] See Chapter 4.1 of this DEIS and Addendum XII, Section 4.2 for a detailed description of the Most Restrictive Rule.

[55] Again, we note that Alternative 2, the *Commission Alternative*, potentially discriminates against permit holders from other states insofar as it applies Massachusetts standards to all Federal permit holders (a possible *National Standard* violation under the Magnuson-Stevens Act). NMFS has repeatedly stated in the past that Federal lobster regulations do not differentiate based upon a person's state citizenship and that its objective would be to identify a "one standard" approach that would comply with the national Standards and at the same time be consistent with the Lobster ISFMP.[55] To the extent NMFS publishes a Proposed Rule based upon Alternative 2, one might expect that Massachusetts documentation would be allowed, perhaps even a presumptive part of the documentary proof, but likely not the exclusive proof. Accordingly, the alternative is not eliminated for this reason, in deference to the Commission and for comparative purposes.

2.1.3 Individual Transferable Trap (ITT) Program Alternatives

Table 2.4 - Conditions Applied to Individual Transferable Trap (ITT) Program Alternatives

	Alternative 1 – No Action	Alternative 2 – Commission	Alternative 3 – LCMA 3 Only	Alternative 4 – Optional Trap Transferability
TRANSFER CONDITIONS	None – Status Quo: No transfers allowed – Existing regulations apply	Yes – Transfers allowed – AOC and Area 2, up to a 800 trap cap; Area 3 – up to a 2000 trap cap	Yes – Transfers allowed, but only in Area 3 with up to a 2000 trap cap	Federal permit holders must agree to more restrictive of Federal or state trap allocation
CONSERVATION "TAX"	None – Status Quo: No conservation tax applied to transfers	Yes – AOC and Area 2 have 10% tax; Area 3 has 20% tax on partial and 10% tax on full transfers	Yes – Area 3 has 20% tax on partial and 10% tax on full transfers	Yes – AOC and Area 2 have 10% tax; Area 3 has 20% tax on partial, and 10% tax on full transfers

Background

Effort control plans approved or proposed by the Commission and implemented by various states and NMFS to date all have one thing in common: they use documented fishing history and fishing performance to allocate the amount of traps that a permit holder can fish within a given LCMA.[56] As the number of these plans has increased, the need to apply uniform criteria that will allow for the consistent assignment of fishing histories across state and Federal programs has been recognized by both state and Federal regulators.

With Addendum XII, the Commission approved a number of unifying measures that will bring various state practices for assigning fishing history into alignment with existing Federal practice. In so doing, a number of fundamental management principles that are key to the success of overall lobster fishery have been firmly established. These principles include the following:

- A lobster permit and its history cannot be separated.
- Fishing histories accumulated under dual state and Federal permits cannot be treated as separate histories and stacked for the purposes of qualification and allocation. A single fishing entity is considered to have established a single lobster fishing history even if that person is a dual permit holder fishing under a state and federal fishing permit.
- Lobster history accumulated under dual state/Federal permits cannot be divided and apportioned between the permits. Because records are imprecise (and in most cases, do not exist) to determine which part of a dual permit holder's catch was caught in state waters and which part was caught

[56] Through various addenda to the interstate fishery management plan for American lobster, history-based effort control plans based on fishery performance have been enacted by NMFS (Areas 3, 4, and 5) and states (MA in Outer Cape Cod; NY and CT for Area 6; and MA, RI, CT,& NY for Area 2). The only Lobster Management Area currently without a history-based effort control plan is Area 1. Addendum XV, approved in November 2009, outlines Commission criteria for a history-based plan for Federal permit holders in Area 1.

in the EEZ, a dual permit holders' fishing history will considered indivisible so long as some part of the catch was caught in both state and Federal waters. If a dual permit holder "splits" his/her permits by transferring either the Federal or state permit to another entity, then the entire fishing history is to remain with the Federal permit for the purposes of the initial qualification and allocation decision. [Alternatively, a dual permit holder who permanently relinquishes or surrenders his/her Federal lobster permit can allow his/her fishing history to be transferred to his/her state permit.

The proposed effort control measures, discussed below, rely on these established principles to meet the conservation goals for the lobster fishery.

Program Overview

As proposed, the Individual Transferable Trap (ITT) program for Federal permit holders in the American lobster fishery establishes fishing privileges for U.S. lobster fishers heretofore unseen in a Federal lobster management program. Under this program, participants are allowed to "transfer" (i.e., sell) blocks of traps to one another after their initial qualification and allocation into the fishery. By allowing fishers to buy and sell lobster traps, the ITT program is meant to provide permit holders with opportunities to enhance efficiency or respond to inadequate trap allocation by obtaining additional allocation from other fishers who may want to scale down their own business or leave the fishery.

Transferable Trap Programs have the potential to reduce effort (i.e., fishing power, often described in number of traps fished) in the fishery through the use of a conservation "tax" (discussed below). In the long run, however, the primary purpose of a transferable trap program is to improve the overall economic efficiency of the lobster industry (ASMFC 2002b).

To date, a number of state-level trap transfer programs have been implemented within certain LCMAs, beginning with the LCMA OCC in 2002, followed by LCMA 3 in 2003 and finally LCMA 2 in 2005.[57] These plans, initially presented through the Commission process, and alternatives to them, are set forth in more detail below.

ITT Alternatives

Common to all of the ITT alternatives are provisions that would:

- Allow trap transfers within an LCMA between individuals who have qualified for that LCMA;
- Reduce the seller's trap allocation in all LCMA's by the amount of the traps transferred;
- Establish a conservation "tax" that would require the removal of a percentage of traps with each transfer for conservation purposes.[58]
- Establish a database to track the transfer of traps. This tracking system would be centrally developed and maintained. All jurisdictions would have access to this data in accommodation with states' confidentiality requirements. This database would allow managers to track transfers across jurisdictions (e.g., state-to-state, or any transfer involving a dual permit holder);
- Prohibit the leasing of traps;

[57] The OCC LCMA program was proposed in Addendum III in February 2002, followed by LCMA 3 program in Addendum IV in December 2003 and finally the LCMA 2 in Addendum VII in November 2005. Transferability taxes are proposed in Addendum III (for the OCC LCMA), Addenda IV and V (for LCMA 3), Addendum IX (for LCMA 2), and Addendum XII. Addendum VII does not establish a transferability program so much as it suggests that the states establish such a program at some point in the future (see Addendum VII, Section 4.2.1.3, November 2005).

[58] Transferability taxes are proposed in Addenda III and XIII (for the OCC LCMA), Addenda IV, V and XIV (for LCMA 3), Addenda IV, VII, IX (for LCMA 2), and Addendum XII.

- Prohibit the development of monopolies by limiting the number of traps that can be transferred to a concentrated group of individuals;

Details specific to each of the ITT alternatives are provided below.

Alternative 1 – No Action

Under this alternative, no Federal trap transfer program would be implemented. State-level trap transfer programs, currently in LCMAs 2 and OCC, would continue.

Alternative 2 – Commission Alternative

LCMA OCC

Under this program, LCMA OCC qualifiers (i.e., those qualified to fish in the LCMA OCC under a limited access fishery) may buy and sell traps subject to a 10% transferability tax and maximum trap cap of 800 traps.[59] Trap transfers may only occur between qualifiers, i.e., non-qualifiers could not buy into the LCMA OCC by simple purchase of OCC traps. In addition, all OCC traps are to be hauled out of the water each year between January 15-March 15, a provision that, while not directly related to trap transferability, is meant to ease enforcement of the program.

LCMA 2

The LCMA 2 trap transferability program is contemplated in Addendum IV and set forth in slightly greater detail in Addendum VII. Specifically, Addendum IV does not establish an LCMA 2 transferability program so much as it calls upon the states to develop one in the future. Nor does Addendum VII establish an LCMA 2 transferability program, although it does suggest implementation of a 10% transfer tax and trap cap of 800 traps for the program that "…is currently being developed."

LCMA 3

Under this program, those who qualify to fish in limited-access LCMA 3 may buy and sell traps to other LCMA 3 qualifiers, subject to a 20% tax on partial transfers (less than the full trap allotment) and a 10% tax when a full business is transferred (full trap allotment)[60]. Total trap effort is capped at 2000 traps per permit. Transfers of less than 50 traps are prohibited, as is leasing. Finally, this alternative also includes details of an anti-trust provision that seeks to prevent the consolidation of effort by prohibiting businesses from owning more than five (5) LCMA 3 permits, although any business owning more than five (5) permits before December 2003 is exempt from this prohibition.

Alternative 3 – ITT for LCMA 3 Only

This alternative limits the transfer of traps to within LCMA 3 Federal waters and as such would be administered NMFS. Traps could only be transferred to individuals who have already qualified for LCMA 3 and would be subject to a 10% conservation tax. All transfers would have to be in increments of 50 or more traps, unless the transfer was for the full balance of the remaining allocation. Leasing of traps would be prohibited.

[59] The details of the OCC LCMA trap transfer program were first presented by the Commission under Addendum III and further refined under Addendum XIII to Amendment 3 of the ISFMP.

[60] The details of the LCMA 3 trap transfer program were first presented by the Commission under Addenda IV and V to Amendment 3 of the ISFMP, later in far more detail under Addendum XIV.

Alternative 4 – ITT as an Optional Program

This alternative would make trap transferability available as an optional program to LCMA qualifiers. As such, qualifiers would not be obligated to take part in the transferability program, but could choose to do so if they so desired. In so choosing, qualifiers would be obligated to adhere to the following program parameters:

- To the extent a lobster fisher has dual permits, (i.e., both a federal and state permit), with different state and federal trap allocations, the permit holder must agree that the more restrictive allocation shall govern and become the official uniform allocation.
- Trap transfer applications will be due by a certain date every year, likely in autumn. The states and NMFS shall have some period of time after the due date to approve or deny the applications, e.g., 90 days. Upon approval, the transferred traps may be fished at the start of the next fishing year.
- Transfers can only involve federally allocated traps that have been allocated into the LCMA.[61]
- To the extent that a transferred trap had a history of fishing in multiple LCMAs and thus is part of a multi-LCMA allocation, the purchaser of that trap would have to pick between the allocated areas and designate a single LCMA in which to fish that trap, and the traps fishing privileges in other LCMAs would be forfeited.
- A seller's trap allocation in other LCMAs shall be debited by the number of traps transferred.
- Since there is no history based trap allocation in LCMA 1, the seller would no longer be authorized to elect to fish traps in LCMA 1 after any LCMA partial transferable trap transfer has been made[62].
- Buyers of transferred traps shall be subject to a 10% conservation tax so that at the completion of the sale, 10% of traps transferred shall be debited from the buyers new allocation. For Area 3, a 20% tax is applied to partial transfers.

Conclusion

The alternatives identified present a range of potential alternatives to the No Action Alternative, where no transferability would be allowed, to Alternative 3, which would allow transferability only in LCMA 3, to Alternatives 2, and 4, which would allow transferability in LCMAs 2, 3 and OCC. Except for No Action, all of the alternatives identified above appear to meet the criteria established under Section 2.1, above, and thus are being carried forward for detailed review. In particular, all of the alternatives identified above appear to achieve some measure of compatibility with the ISFMP for American lobster and its goals.

[61] For dual permit holders, the federally allocated traps would likely also be part of a state allocation. NMFS Fisheries recognizes this fact and transfer of such traps would remain permissible. Transfer of state-only traps to Federal permit holders, however, would not be allowed.

[62] See Addendum XII, Section 4.4 for the Commission's justification for removal of LCMA 1 trap access rights from the seller. Addendum XII is attached to this DEIS as Appendix 3.

Chapter 3 – Affected Environment

AFFECTED ENVIRONMENT CHAPTER 3

3.0 INTRODUCTION

Consistent with Section 1502.15 of the CEQ NEPA regulations (40 CFR Part 1500), this chapter describes key components of the environment affected by the effort control management alternatives for American Lobster.

NMFS is proposing to adopt management measures for the American Lobster fishery that on the one hand aim to improve economic efficiency within the fishery, but that ultimately also address concerns about the level of fishing effort in the fishery and the potentially adverse effects that too much effort can have on biological resources (not only American Lobster, but protected species, by-catch species and bait fish). The impact of these management measures is therefore potentially broad reaching and reflects the complex interactions between regulatory actions, their social and economic implications, and connected environmental outcomes. All of these topics are discussed in turn below.

Six major components are examined in detail:

- Section 3.1 discusses the current regulatory setting for American Lobster;
- Section 3.2 describes the economic environment of the potentially affected population;
- Section 3.3 describes the social aspects of the fishing communities potentially affected by the proposed American Lobster management measures.
- Section 3.4 describes the status of the American Lobster fishery, including its biological and physical characteristics;
- Section 3.5 describes protected species that may be affected by elements of the proposed American Lobster management measures;
- Section 3.6 describes other potentially affected commercial fish species, including by-catch and bait fish species, and;

For purposes of this assessment, areas that may be directly or indirectly affected by the alternatives under evaluation include all of the LCMAs within the American Lobster fishery, encompassing inshore and offshore coastal areas from Maine to North Carolina.

The resources evaluated include those species and habitats that could be directly or indirectly affected by the proposed management measures. In addition to the American Lobster, other biological resources evaluated for this document include protected or sensitive species and habitats such as marine mammals, sea turtles, coastal and marine birds, fisheries resources, federally listed threatened or endangered species, and EFH. Determining which habitats and species occur in the project area was accomplished through literature reviews and coordination with appropriate NMFS staff and other knowledgeable experts.

3.1 REGULATORY SETTING FOR AMERICAN LOBSTER

From a Federal perspective, lobster management has an unusual construct in that management actions largely emerge through a state-initiated Commission process in which Federal managers act in coordination with the Commission, rather than through unilateral action such as is seen in many other areas of fishery management. On the one hand, this construct is a practical response to the state/Federal jurisdictional realities behind lobster management, since lobster harvests occur primarily within state waters (see also discussion in Section 1.0); on the other hand, it also serves to spotlight the differences in jurisdictional perspectives: though a broad view of the needs of the overall fishery may suggest one type of action from a Federal perspective, NMFS may reject that option because it is deemed to be inconsistent with the National Standards as articulated under the MSA. Furthermore, as discussed in Chapter 1, when implementing regulations, it is the obligation of Federal lobster managers to ensure that those regulations are compatible with the Commission's ISFMP for lobster. Because management interests can and often do diverge however, not only between the states and the Federal lobster managers but also between the states themselves, finding compatible regulatory approaches to lobster management can be challenging. These challenges are explained in greater detail below.

The Commission's current Lobster Interstate Management Plan was first adopted in December 1997 under Amendment 3 to the ISFMP (see also discussion in Section 1). Amendment 3 established the framework for area management, which in addition to establishing the seven LCMAs, also established industry-based teams, known as Lobster Conservation Management Teams (LCMTs), that were encouraged to develop management programs to suit the needs of the LCMAs while meeting the stock rebuilding objectives established in the ISFMP.

With the approval of Amendment 3, a relatively straightforward approach to lobster management was envisioned: scientists assess the stock; industry committees recommend preliminary measures to the Lobster Board for consideration addressing assessment findings and the Board, in turn, forwards appropriate LCMT proposals to technical committees to review the industry-proposed measures for scientific integrity. Next, the Commission's Lobster Board synthesizes this information into the Lobster Plan, votes to approve it, then sends it to the states and federal government so that they can implement compatible LCMA-specific regulations. In short, the Commission identifies a singular Plan that the states and NMFS enact in a unified, compatible, and consistent fashion. While this approach may seem straightforward, in reality lobster management is far more nuanced and complicated.

Since the passage of Amendment 3 in 1997, lobster management has evolved into an increasingly complex regulatory environment. Individual states (through the LCMTs, via the Commission) have advanced numerous management measures, some of which are out-of-sync with each other, while the Federal government has struggled to promote regulatory consistency between state and Federal management efforts through its own rule-making processes in response to Commission actions. This, combined with the fragmented nature of state/Federal lobster management and the pace at which new management measures continue to be advanced through the Commission process, have made the perceived need for consistency -- and inability to achieve it -- more acute. In response, NMFS has placed strong emphasis on improving coordination between itself and the states via the Commission. While in many ways there is more coordination than ever as a result, these efforts have so far been unable to keep pace with the myriad of management actions that continue to be advanced. A number of factors contribute to these circumstances.

3) *The Commission's inherent structure*:

- The Commission (and its Lobster Board) is not a singular entity so much as it is an amalgamation of multiple independent and sovereign entities. Specifically, the Lobster Board is composed of eleven (11) sovereign states and the Federal Government, which is itself sovereign. Each sovereign government has its own laws and authorities that govern what it can do and how it can do it. Further, the Lobster Plan is open to interpretation, so one's opinion as to what constitutes compatible and consistent regulations might vary from one government to another.

- Governments have different rulemaking apparatuses – e.g., some states can create regulations quickly by executive action, while others need legislative approval – as a result, regulations are often enacted on different timelines. NMFS does not typically begin its rulemaking for an FMP action until the Commission process ends, which in combination with existing detailed federal rulemaking requirements, causes a lag time between when the states create their regulations and when NMFS can create its regulations.[63] Accordingly, while there may be one singular Commission Lobster Plan, in reality there are twelve independent and separate sets of regulations implementing that Plan – one for each state and federal government.[64] In this environment, the challenge to maintain regulatory consistency amongst all twelve sovereigns has become increasingly more intense.

4) *State/Federal regulatory disconnects*:

Regulatory consistency across state/Federal jurisdictions is a particular challenge to NMFS due to two unique characteristics of the Federal fishery.

- First, NMFS has territorial jurisdiction -- and thus must be concerned about consistency -- in six (6) of the seven (7) management areas, while the majority of Commission states have territorial jurisdiction over only a single lobster management area (see Table 3.1, below).[65] As the Commission states have implemented requirements that are increasingly divergent from one another, the ability for NMFS to implement consistent measures across different LCMAs that are also consistent with the Plan approved through the Commission process has become more difficult. Further complicating this effort is the fact that Federal permit holders are allowed to designate multiple management areas on their permit, (subject to whatever regulations exist in those management areas, including regulations that might limit access). Under these conditions, the difficult challenge for NMFS is to achieve consistency with Commission area-specific management measures while maintaining a more holistic approach that considers consistency impacts in all LCMAs

[63] Occasionally, this lag time can be of benefit insofar as it allows time for further reflection and potentially, revision, of Commission addenda that are created and passed with such speed that details are sometimes necessarily left unresolved to future dates. For example, the first Commission transferability program was but one paragraph in Addendum III (Outer Cape Cod – 2002). It became far more evolved in Addendum IV (Area 3 – 2003) and many critical details remained unresolved until the passage of Addendum XII (Transferability – 2008). Another example is the Area 2 limited access plan that was passed in Addendum III (2002), withdrawn in Addendum VI (2005), re-approved in Addendum VII (2006), with foundational details being added in Addendum XII (2008).

[64] In fact, given that the twelve jurisdictions enact regulations for each of the seven (7) separate and distinct lobster management areas, there exists the possibility for dozens of similar, but potentially non-identical lobster management regimes.

[65] The exceptions are New York and New Jersey, which have territory in just two management areas, and Massachusetts, which has territorial jurisdiction in three areas--although Massachusetts law mandates that its fishers must choose and thus fish in only one of these "near-shore" management areas. (Lobster Management Areas 1, 2, 4, 5 ,6 and Outer Cape Cod are sometimes referred to as "near-shore" management areas because their western boundaries run to the beach and are thus "near the shoreline." Area 3, whose western-most boundary is miles from the coast, is sometimes referred to as the "offshore" management area.)

over which the Federal government has territorial jurisdiction, and in all LCMAs where Federal permit holders fish, which is to say everywhere in the fishery.

Table 3.1 - State/Federal Territorial Jurisdiction Over Management Areas

State / Federal Government	Nearshore Lobster Management Area
Maine	Area 1
New Hampshire	Area 1
Massachusetts	Area 1, 2, Outer Cape Cod
Rhode Island	Area 2
Connecticut	Area 6
New York	Area 4, 6
New Jersey	Area 4, 5
Delaware	Area 5
Maryland	Area 5
Virginia	Area 5
North Carolina	Area 5
NMFS	Area 1, 2, 3, 4, 5, Outer Cape Cod

- A second challenge to consistency that is unique to NMFS involves the nature of so-called "dual permit holders." Dual permit holders are individuals that hold two permits: a state permit allowing the person to fish in state waters 0-to-3 nautical miles from shore; and a federal permit allowing the person to fish in federal waters beyond 3 nautical miles from shore.[66] Although fishing under two permits, these dual permit holders operate their fishing businesses as a singular entity and the Commission, under Addendum XII provisions, considers their fishing practices and fishing history to be unified and indivisible. This creates further incentive for the involved state and Federal jurisdictions to make consistent decisions on the dual permit holder and disincentive (and potential for chaos) should the jurisdictions not do so.

  For an individual state, dual permit holder consistency is less complex because it needs to seek compatibility with NMFS only. And even in so doing, a state need only look at the Commission Plan and interpret it as it sees fit because NMFS is usually unable to preemptively create federal regulations in time to guide the states during the state regulatory process. For the Federal government, however, compatible dual permit holder regulations requires attempted consistency with each of the eleven (11) managing states, which are themselves not always consistent with one another. Furthermore, given the time lag between state and federal rulemaking, NMFS can often be left trying to reconcile up to eleven sets of independently developed and already enacted regulations before it can issue its own regulations.

[66] It may also be possible in certain limited situations to have dual state permits, but such situations are rare and not germane to the present analysis.

It is within this overall regulatory context, where state/Federal regulatory consistency has become increasingly difficult to achieve, that the proposed management measures that are the subject of this EIS analysis are being considered by NMFS.

3.2 ECONOMIC ENVIRONMENT

Overview

American lobster is one of the most valuable commercial fisheries in the United States.[67] Despite this, available data (see discussion below) indicate that profit margins for lobster fishers are declining: even while the value of American lobster at times may rise, the costs associated with lobster fishing are rising at a higher rate and this has reduced the income of those who participate in the fishery.

For purposes of this analysis, the economic environment for a lobster fisher can be seen as driven by both macro and micro incentives. At the macro level, a fisher is concerned with whether the regional value of the catch is high enough to want to take on the economic burdens associated with being an active participant in the fishery. At the micro level, a fisher must weigh the potential revenue from the catch against the substantial costs of operating within the fishery (including the risks associated with exposure to volatile regional economies, such as has been seen in recent years). In general, these costs include: the boat, bait, traps, rope, fuel, and overhead. Whether an individual can realize a sufficient profit margin after these costs and revenues have been factored will, for purposes of this analysis, suggest whether those fishers currently participating in the lobster fishery will have incentives to become buyers or sellers under an ITT program (this will be discussed further in Chapter 4).

The discussion below examines the economic characteristics of the American lobster fishery, with emphasis on the market and operational aspects of the components of the fishery that may be affected by the proposed limited access and ITT programs. [68]

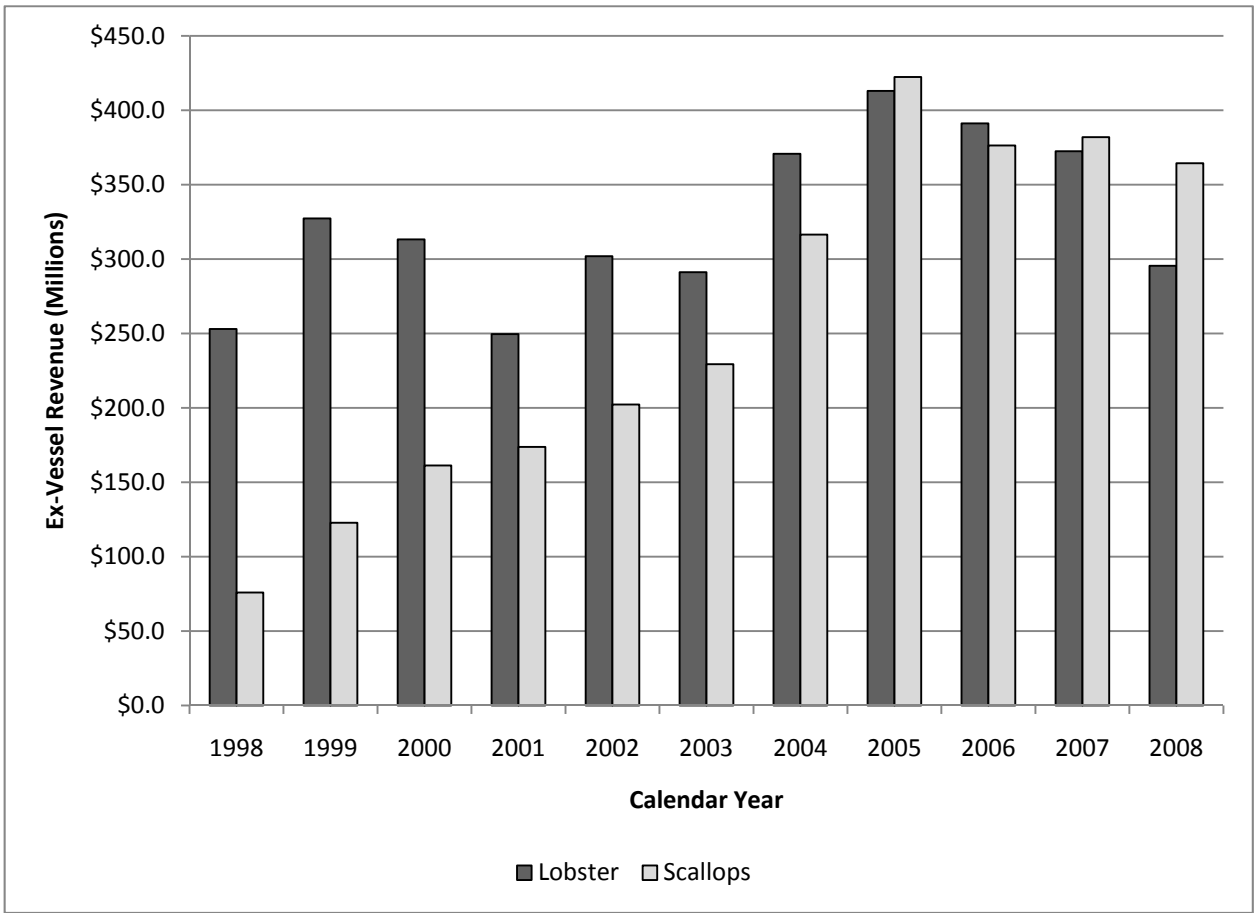
3.2.1 Recent Trends

From 1998 to 2004 American lobster was the highest value fishery in the Northeast region ranging between $250 million and $366 million (Chart 3.1). Over the same years, scallop revenues grew steadily from $76 million to $316 million. Since 2005, revenues from the scallop fishery have exceeded that of the lobster fishery in every year except 2006.

[67] (NMFS Office of Science and Technology, 2009).

[68] Much of this description relies on a survey conducted by the Gulf of Maine Research Institute (GMRI) of fishing activity during 2005. Since the proposed action would generally affect lobster trap businesses in LCMAs OCC, 2 and 3, the survey findings summarized herein focus on these LCMAs. Survey findings for lobster trap vessels participating in LCMA 1 are detailed in GMRI (2008). See Appendix 8 for a copy of the GMRI Survey (GMRI 2008).

Chart 3.1 - Annual Lobster and Scallop Fishery Revenues (1998-2008)



Over the last 10 years lobster landings ranged from a low of 71.2 million pounds in 2001 to a time series high of 91.7 million pounds in 2006 (Table 3.2). Note that even though 2001 landings were nearly 20 million pounds lower, 2001 revenues were nearly identical to that of 2006 because average price was more than $1 per pound higher. By contrast, landings in 2007 and 2008 were nearly identical but the landed value of lobster fell by $60 million as the price per pound fell from $4.42 in 2007 to $3.73 per pound in 2008. Much of this decline was attributable to the international financial crisis that occurred in October, 2008.

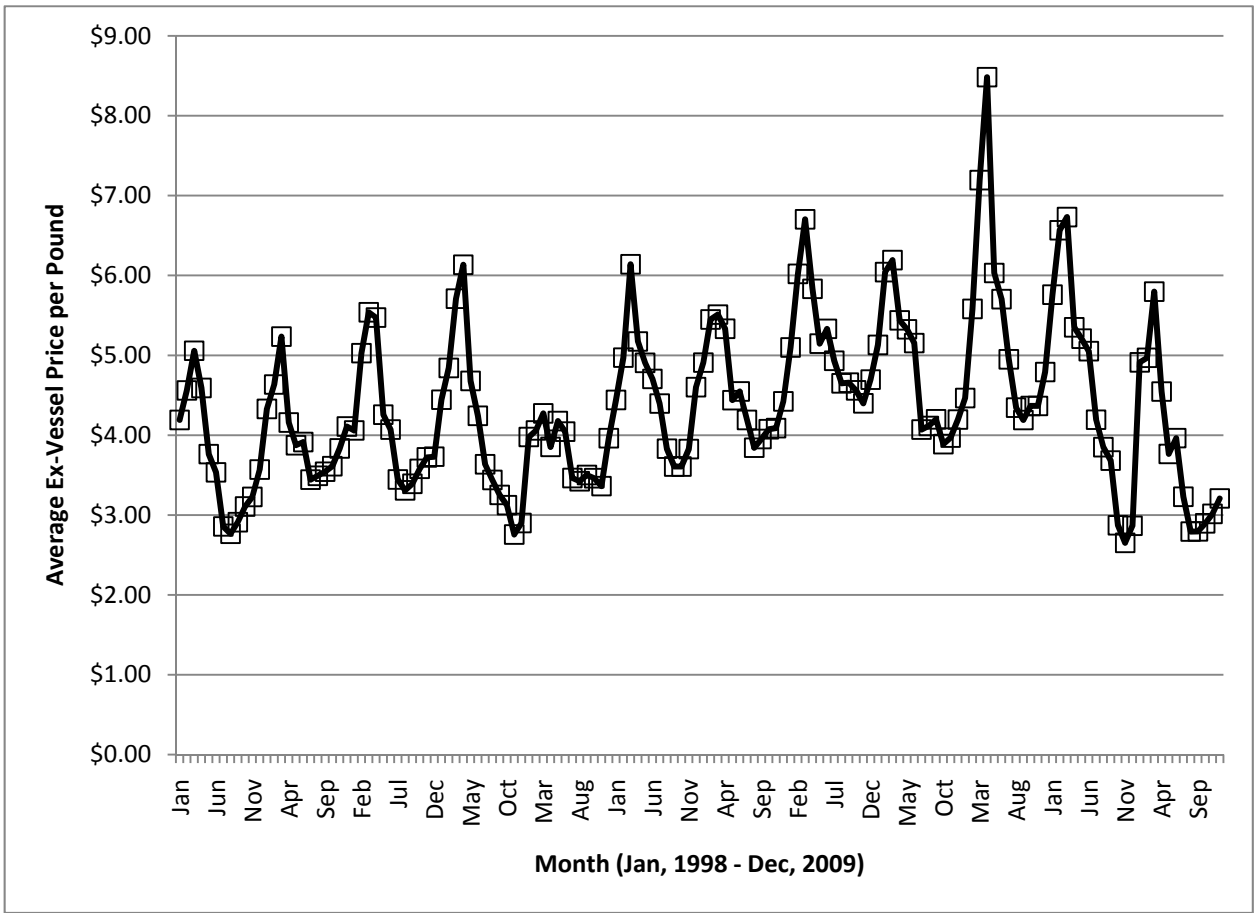
Table 3.2 - Landings and Inflation Adjusted Value and Price per Pound - 1998-2008[a]

Year	Value (millions)	Landings (millions)	Price per Pound
1998	$248.4	79.5	$3.12
1999	$337.3	88.6	$3.81
2000	$316.9	86.6	$3.66
2001	$365.8	71.2	$5.14
2002	$316.3	85.1	$3.72
2003	$287.8	73.4	$3.92
2004	$366.3	89.3	$4.10
2005	$354.3	87.3	$4.06
2006	$369.3	91.7	$4.03
2007	$355.9	80.6	$4.42
2008	$295.5	79.3	$3.73

[a] Base year = 2008

Lobster prices typically follow a seasonal pattern corresponding with peaks and valleys in landings. Prices tend to be highest during late winter and early spring months when available supplies are low and lower during the summer and fall when supplies are high (Chart 3.2). The fall months correspond with a period of high landings and reduced demand for live lobster. In the past a substantial portion of the excess supply of lobster harvested during the fall were sold to Canadian processors or pound operators. This available market tends to keep ex-vessel prices higher than they would be if this market were not available which turned out to be the case in October, 2008. That is, much of the source of credit used by Canadian processors to purchase raw material came from banks in Iceland which effectively collapsed causing a drop in the ex-vessel price to $2.87 in October, 2008. Prices remained below $3.00 per pound in both November and December, 2008. Prices were again in the sub-$3.00 per pound during much of this past late summer early fall months of 2009.

Chart 3.2 - Monthly Average Price Per Pound for American Lobster (1998-2009 y.t.d.)



3.2.2 Lobster Fishery Characteristics in LCMA 2 and LCMA 3

Using a stratified random design, the GMRI survey contacted a sample of lobster trap fishermen operating in LCMA 1, LCMA 2, and LCMA 2 from the states of MA, NH, and RI. Massachusetts residents that fished in the OCC were not included in the survey so no information is available to characterize lobster trap businesses in that area. Due to substantial differences in the operating environment between the offshore LCMA 3 fishery and most LCMA 2 lobster business, the characteristics of the two fisheries are described separately.

LCMA 2 Fishery - Economic Characteristics

Based on survey results, on average, LCMA 2 fishermen have been engaged in the lobster trap fishery for 27 years. Full-time fishermen tend to use larger vessels (36 feet/293 hp) compared to seasonal fishermen (29feet/203 hp), where full-time is defined as having set traps in every quarter of calendar year 2005. In addition to being longer, vessels used by seasonal operators are older (22 years) compared to full-time operators (20 years). Three-quarters of seasonal operators do not hire a sternman whereas 52% of full-time operators hire one or more sternman.

Both full-time and seasonal operators tend to fish more traps and take more trips during the second half of the year than the first. On average full-time operators fish 374 traps during Jan-March and take 1.8 trips per week. Activity for full-time LCMA 2 operators picks up in the second quarter, fishing an average of 443 traps and taking 3 trips per week. July-September correspond with peak activity for both full-time and seasonal participants. Note that the average number of trap hauls per trip is nearly constant throughout the year for full-time operators and is identical for seasonal operators in both the third and fourth quarters (GMRI 2008).

Table 3.3 - Quarterly Trap Management for Full-Time and Seasonal LCMA 2 Operators

	Full-Time Operators			
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Traps	374	443	502	447
Trips per Week	1.8	3	4.2	2.6
Trap Hauls per Trip	200	186	204	188
	Seasonal Operators			
Traps	NA	152	273	463
Trips per Week	NA	2.1	2.6	3.3
Trap Hauls per Trip	NA	114	151	151

Based on GMRI survey data, the majority of LCMA operators were found to be earning sufficient revenues to cover operating expenses, but net returns were below per capita income, and at most, only 25% earned a positive return to capital. Although the GMRI survey collected data on total revenues and total fuel, bait, and some fixed costs, data were not collected on key quantities such as total landed pounds, amount of fuel used, or amount of bait. This makes it difficult to assess how financial circumstances may have changed since or, for that matter, how 2005 may compare to prior years. To provide an indicator of change over time, an estimate of landed pounds, fuel used, and bait used was calculated by dividing gross revenues, fuel cost, and bait cost by the 2005 lobster price per pound, average price for #2 diesel fuel, and ex-vessel price for Atlantic herring respectively. Holding the resulting quantities constant and applying average prices in other years provides an indicator or index of how margins may be changing with changes in fuel or bait price. Payments to a sternman were calculated by multiplying the share of gross revenue paid to a hired sternman during 2005. The resulting margin represents the share of gross revenue left over for the owner's income and to pay for all expenses other than labor, bait, fuel.[69]

Based on the GMRI survey, four different types of lobster trap businesses in LCMA 2 were identified, including full-time operators that did and did not hire a sternman and seasonal trap businesses that operated during the fall/winter season and during the summer. Neither type of seasonal trap business hired a sternman. The estimated margins, holding 2005 quantities constant and applying 1998 prices, ranged from 73% to 91%, where the lower end was associated with full-time operators that hired a sternman

[69] This approach will likely overestimate the physical quantity of bait used since the price paid for lobster bait is likely to exceed the ex-vessel price for Atlantic herring. However, if the bait price is positively correlated with the ex-vessel price, holding quantities constant, the total cost of bait will rise and fall with the ex-vessel price. In economics, a margin may be used as a measure of profitability. However, in this context the estimated margin in any given year should be interpreted as an index since quantities are held constant.

(Table 3.4). As a point of emphasis, this does not mean that returns above fuel, labor, and bait expenses were 73% or better of gross revenue during 1998, since the pounds of lobster landed and quantities of purchased inputs may have been very different than they were during 2005.

Table 3.4 - Estimated Margin by Year for Representative LCMA 2 Lobster Trap Businesses

	Full-Time		Seasonal	
Year	No Sternman	Sternman	Fall/Winter	Summer
1998	82%	73%	85%	91%
1999	84%	74%	86%	92%
2000	81%	72%	84%	90%
2001	81%	72%	84%	90%
2002	81%	72%	84%	90%
2003	81%	72%	83%	90%
2004	79%	71%	82%	89%
2005	77%	69%	80%	87%
2006	71%	66%	75%	84%
2007	72%	66%	76%	84%
2008	57%	56%	63%	75%

The estimated margin during 1999 was slightly higher compared to 1998, declined during 2000 but was nearly constant from 2000 to 2003. Over these four years, changes in lobster, fuel, and bait prices offset one leaving the margin unchanged from year-to-year. Since 2003, the margin has been declining, reaching a low point in 2008 due to a combination of time-series lows in lobster prices and time-series highs in both the price of fuel and bait. Preliminary data indicate that the fuel price during 2009 is lower than it was during 2008, but that the average price of lobster may be lower. These data suggest that the financial situation among LCMA 2 lobster trap businesses, based on 2005 GMRI survey data reported in Thunberg (2007), has not improved and may well have gotten worse (GMRI 2008).

LCMA 3 Fishery - Economic Characteristics

Again, based on survey results, on average, vessel operators participating in the offshore LCMA 3 fishery have about the same number of years engaged in the lobster fishery (30) as individuals participating in either LCMA 1 or LCMA 2. However, vessels are larger, averaging 55 feet, with main engine horsepower of 469 hp. Vessels averaged 17 years of age, all operators work year-round and hire at least one sternman. Two-thirds of LCMA 3 participants hire multiple crew.

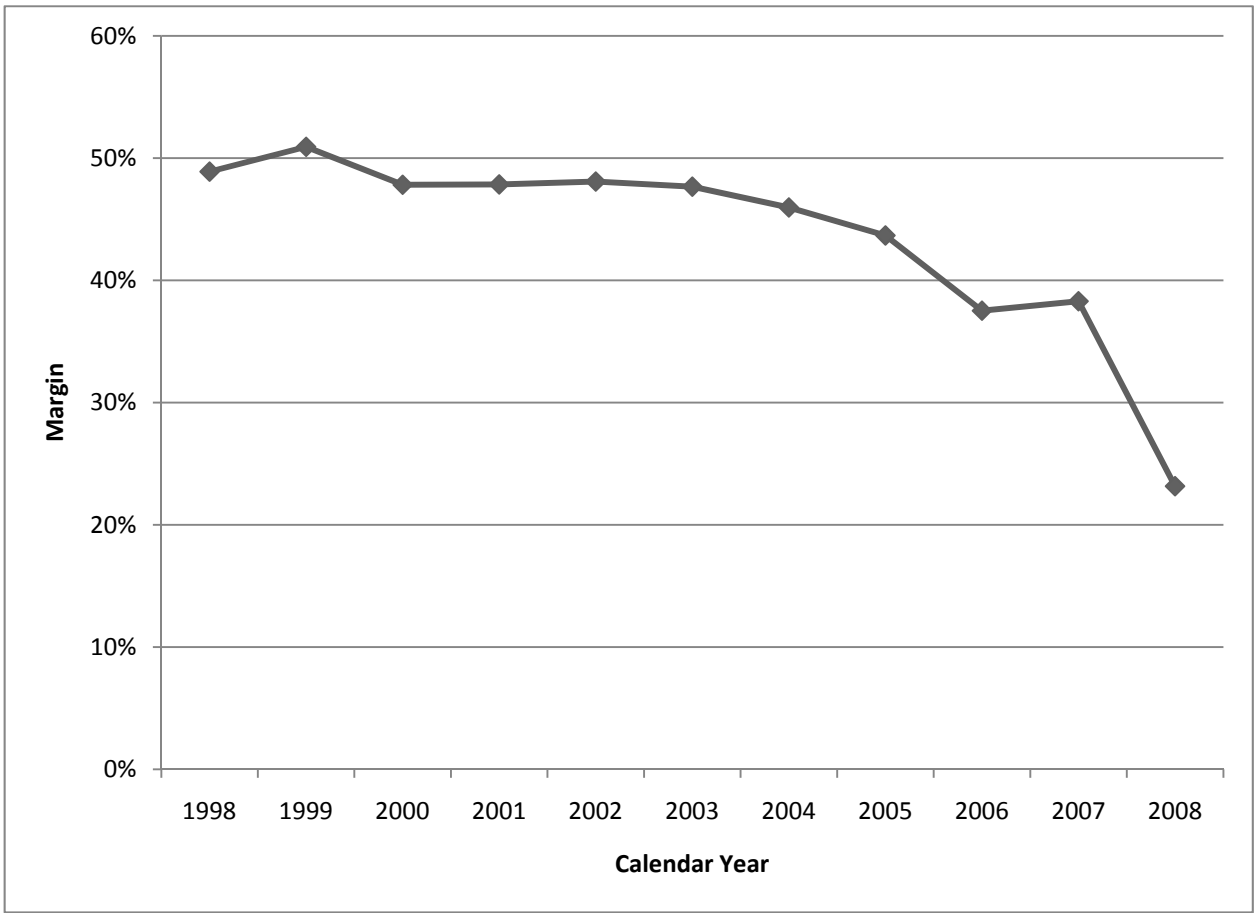
Reported quarterly effort during 2005 is indicative of a year-round fishery where the number of traps fished and traps hauled per trip varied little (Table 3.5). Specifically, LCMA 3 vessels have an average of about 1,000 traps in the water at any given time during each quarter and haul between 850 and 900 traps on each trip. The number of trips taken per week during the first quarter (2) is lower than in other quarters.

Table 3.5 - Quarterly Activity for LCMA 3 Trap Vessels

	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Traps	1041	1058	1070	1035
Trips per Week	2	2.5	3.1	2.4
Trap Hauls per Trip	939	888	887	849

Margins for LCMA 3 trap businesses were calculated using the same procedures used to create the indicator of financial condition for LCMA 2 businesses. Since crew payments represent 32% of gross revenues during 2005, the margin (after accounting for labor, fuel, and bait) available to pay other operating and fixed expenses is lower in all years than that reported for LCMA 2 businesses. The margin index was 49% during 1998 and displays the same trend during 1998 to 2003 as that of the LCMA 2 lobster trap vessels, since average prices of lobster, fuel, and bait were used throughout. That is, changes in lobster prices and key input prices from 1998-2003 tend to offset one another. However, the price of fuel began to rise at a faster rate than lobster prices, resulting in a downward trend in the margin index- from 46% during 2004 and continuing to a series low of 23% during 2008. Based on 2005 GMRI survey data, most LCMA 3 lobster businesses are earning positive returns to both operator labor and capital. Since 2005, the margin index has fallen by nearly 50%. Given current prices, it is likely that the financial position of most LCMA 3 trap vessel operators has substantially deteriorated (GMRI 2008).

Chart 3.3 - Estimated Margin by Year for Representative LCMA 3 Lobster Trap Business



3.3 SOCIAL ENVIRONMENT

The social environment discussion below examines the social and cultural setting of the communities potentially affected by the proposed LAP and ITT programs. Potentially affected communities were identified by first looking at the distribution of lobster fishers (trap vessels) across the relevant states and management areas, then identifying the towns in which those lobster license holders reside and, finally, identifying the counties in which those towns are located. Within each county, social and cultural characteristics of the towns with the strongest participation in the American Lobster fishery were used as a proxy for the county as a whole. Social parameters considered include regional and local demographic attributes of the fishing communities identified, (e.g., age, income, education); and cultural parameters such as institutions that support the attitudes, beliefs and values of fishery related workers and the communities in which they work.

3.3.1 Location of the Commercial Lobster Industry

This section describes the historical participation in the commercial lobster industry from 2000 to 2007 at the state and local level in order to identify where geographically the most active parts of the industry are located. Following this discussion, the analysis considers the social profiles of the most active communities identified; it is assumed that these communities are potentially most affected by the proposed management measures for American Lobster. Beginning at the state level, the American Lobster fishery breaks down by state and across LCMAs as indicated in Table 3.6, below.

Table 3.6 - Trap Vessels by Area and State

	A2			A3			OCC		
	2000	**2004**	**2007**	**2000**	**2004**	**2007**	**2000**	**2004**	**2007**
CT	12	16	16	3	4	2	1	3	4
MA	253	204	176	173	43	34	174	155	131
ME	71	68	22	393	18	6	24	17	7
NH	10	12	11	32	13	10	1	2	3
NJ	10	24	28	67	16	9	4	10	9
NY	33	43	42	23	10	5	5	4	6
RI	215	201	169	93	43	39	10	27	20
Other	2	7	7	22	3	4	1	7	4
Totals	606	575	471	806	150	109	220	225	184

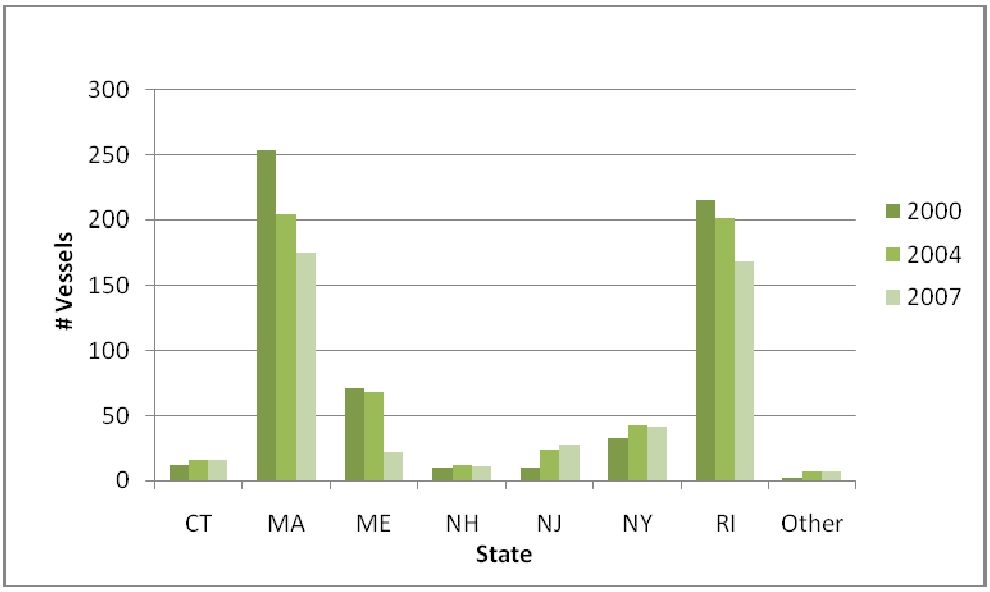
Table 3.6 uses best-available Federal permit data to provide some initial insight into the shifting presence of the lobster industry, geographically speaking, within LCMAs 2, 3, and the OCC since 2000, both in terms of absolute numbers of participants (measured by number of vessels permitted), and how this participation breaks down by state. While these data provide a useful starting point for an analysis, they have a number of practical limitations that should be noted.

First, while the data presented is the best available, it is best viewed as an approximation of industry participation in the lobster fishery. Exact figures are not available. Further, a true understanding of industry participation is not possible without considering the behavior of fishermen in relation to the management constraints in which they operate. Under Federal regulations, vessel owners are required to designate which LCMAs they will be fishing in on their yearly permit applications. However, under current Federal regulations, permit holders in LCMAs 1, 2, and OCC can continue to elect into these LCMAs. Therefore, there is little incentive for fishers to limit themselves in terms of the areas in which their permits would allow them to fish and, as a result, many if not most fisherman simply “check off” multiple LCMAs, regardless of whether they intend to actually fish in those areas. This has created a sort of “dual reality,” whereby participation “on paper” may be substantially different from the “true” level of participation. Looking at the data (Table 3.6), this effect is evident in LCMA 3: in 2000, 393 and 173 vessels from Maine and Massachusetts, respectively, designated LCMA 3 on their permits; once a limited-access program was implemented in 2003 (68 FR 14902, March 27, 2003), however, those numbers plummeted to 18 and 43, and fell even further, to 6 and 34, by 2007. Since individual fishermen qualified into LCMA 3 according to their documented historic participation, it can be argued that the 2004 and 2007 numbers more accurately reflect actual fishing effort in that LCMA, even historically speaking, compared to the much higher numbers recorded for 2000.

Further evidence of this "dual reality" is found in the participant numbers for the LCMA OCC. The Outer Cape Area is predominantly composed of day-boat fishers, which means that boats need to steam, fish, and then return from the LCMA OCC within a day. Given the geographic limitations alone, it is unlikely that boats as far north as New Hampshire or far south as eastern Rhode Island could travel this distance round trip within a day. This explains the dominance of Massachusetts and Rhode Island vessels in the LCMA OCC, according to the Federal data, given their closer proximity for day-boating. Nonetheless, permitted vessels from more northern and southern states do designate the OCC; it is assumed that this occurs for the reasons indicated above.

Given these limitations, it is most relevant to consider the participant data in absolute terms and in terms of change over time, rather than as exact numbers. Using this approach, based on the relative number of trap vessels across states, the data show in general that Massachusetts and Rhode Island are the major participants (both historically and based on the most recent 2007 data), followed by New York and New Jersey. Further, overall participation has been declining among the major participants across all LCMAs, with participation in LCMA 3 showing the most dramatic decrease over the 8-year period from 2000 to 2007.

Chart 3.4a - #A2 Trap Vessels by State - 00/04/07



Charts 3.1a, 3.1b, and 3.1c graphically illustrate the data presented in Table 3.6 for the distribution of vessels across states from 2000-2007 for LCMAs 2, 3, and the OCC. Overall the results support what NMFS would intuit is occurring across lobster management areas. In LCMAs 2 and 3, for example, one would expect the contiguous states to have the largest number of participants, in this case, Massachusetts and Rhode Island, because of the day-boat nature of the fishery (as described earlier). Further, in Massachusetts and Rhode Island, the number of participants has declined over time, most likely due to the influence of the Most-Restrictive Rule and, for LCMA 3, the implementation of a limited access program at the state level, combined with restrictions on gauge size and other broodstock protection measures that were implemented during this period, discouraging its use by some fishers. For LCMA OCC, the dominant presence of Massachusetts is, again, logical because of its geographic proximity and is supported by the data.

Chart 3.4b - #A3 Trap Vessels by State - 00/04/07

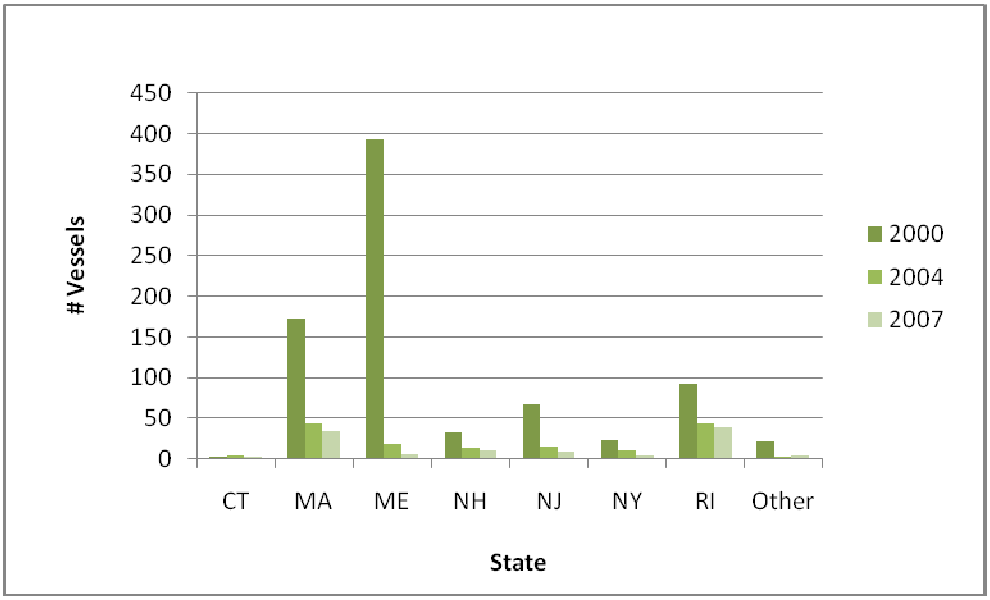
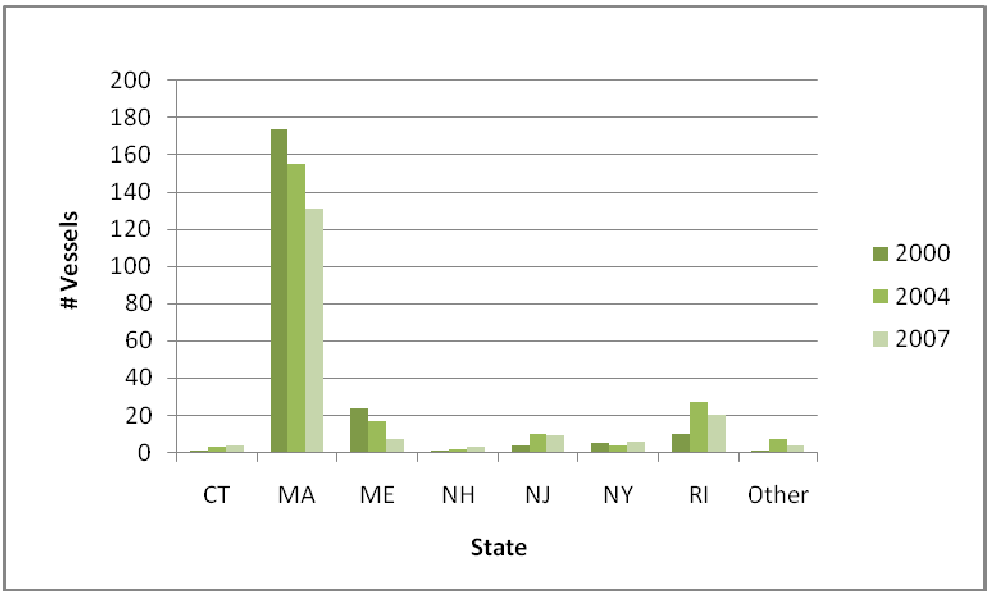


Chart 3.4c - #AOC Trap Vessels by State - 00/04/07



While these results begin to characterize the commercial lobster fishery, they tell only about the size of the industry over time; making the link between the number of vessels (i.e., licenses) and the amount of fishing effort is more difficult.

As with industry participation, there is no readily available data that precisely measures fishing effort within the American Lobster fishery. One cannot, for example, assume that an individual fisher who purchases 800 traps actually fishes all of those traps, and there is no official record keeping of what is actually fished. Given this lack of information, NMFS considered trap tag[70] data by state and LCMA from 2000-2007 as a proxy for fishing effort. In using this data, we acknowledge that trap reductions do not fully equate with an equal or proportionate reduction in fishing effort; we believe, however, that, in gross terms, data showing trends in trap tags purchased over time is useful in combination with other indicators to demonstrate existing conditions within the lobster fishery.

The trap tag data show that, concurrent with a significant reduction in the number of vessels participating in the lobster fishery from 2000-2007, the number of trap tags[71] purchased for LCMA 2 also declined across all states by a dramatic 50-to-82% over the same time period. Important to consider, however, is that this reduction to a large degree reflects the more accurate accounting of fishing effort that could take place once the Most Restrictive Rule was implemented in 2004. Further, Massachusetts implemented state-level requirements that only those permit holders who landed their catch within the state could qualify for trap tags. These measures together helped to eliminate a significant degree of the "dual reality" conditions describe earlier, where the level of effort "on paper" was more than the actual level of effort taking place. In this context, the decline in trap tags purchased represent a certain amount of reduction in effort (unquantifiable) combined with more accurate accounting (also unquantifiable).

Similarly, trap tag purchases for LCMA 3 (see Appendix 9 – Trap Tag Tables) show declines of 62% to 73% from 2000-2007 for Massachusetts and Rhode Island, respectively. These declines were largely driven by the implementation of a Federal limited access program for LCMA 3 (68 FR 14902, March 27, 2003), combined with the Most Restrictive rule. The numbers for the later 2004-2007 years are also thus a more accurate reflection of actual fishing effort (a conclusion supported by the relatively strong correlation between the number of vessels electing A3 and the number of vessels purchasing trap tags, as well as the number of trap tags authorized and the number of trap tags purchased).

Finally, for LCMA OCC (see Appendix 9 – Trap Tag Tables) the trap tag data show a decline of 81% from 2001-2007 for Massachusetts, the dominant player geographically for this management area. These results most likely reflect strong enforcement by the Commonwealth of Massachusetts of the Most Restrictive Rule, once implemented. Further, the number of Massachusetts vessels purchasing trap tags shows a concurrent decline – from 110 vessels in 2001 to 25 vessels in 2007 – also reflective of the Commonwealth's approval of trap tag purchases only to those Federal vessels that the Commonwealth determined qualify in LCMA OCC.

The following section analyzes industry participation in the American Lobster fishery state-by-state and, within each state, county-by-county for each LCMA.

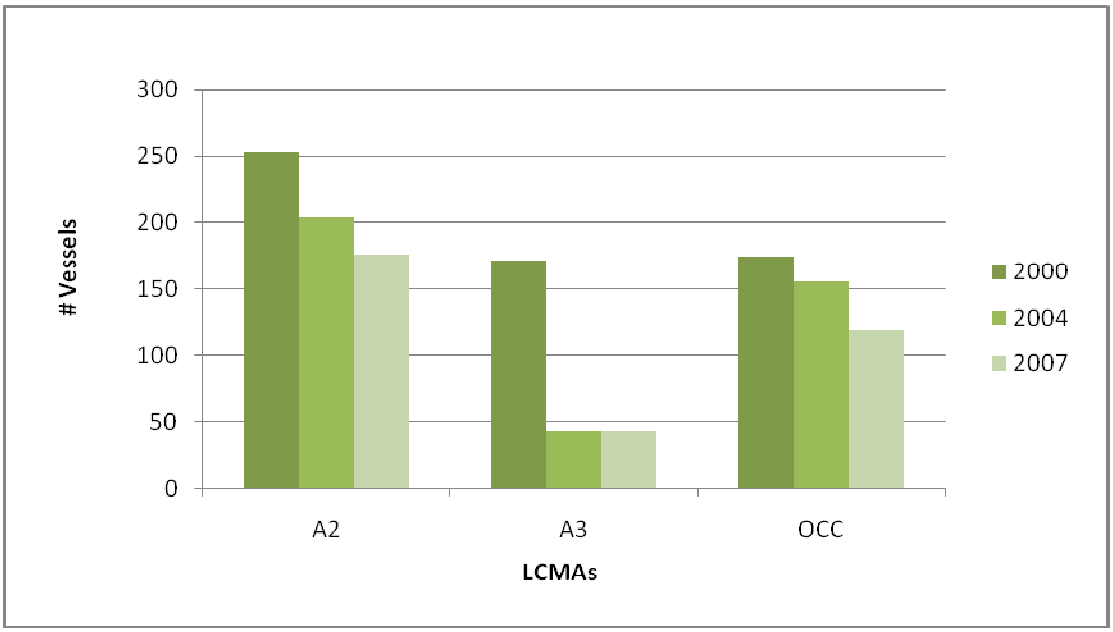
Massachusetts

In Massachusetts, overall participation in the American Lobster fishery has declined across all LCMAs between 2000-2007, with the most dramatic decline occurring in LCMA 3 (Chart 3.2a). In general, these data are consistent with the impact one would expect to see following the implementation of the Most Restrictive Rule and, for LCMA 3 in particular, a Federal limited access program in 2004.

[70] A "trap tag" is a marker tag permanently attached to the trap bridge or central crossmember of a lobster trap, identifying permit number, permit year, authorized management area and/or trap number.
[71] See Appendix 8 for trap tag tables.

At the county level, 11 Massachusetts counties participated in the American lobster fishery at some level from 2000-2007 (Table 3.7). Within LCMA 2, Barnstable, Bristol, Dukes, Essex, and Plymouth comprised 90% of the total participation in 2000 (participation from the other six counties was at less than 3% each of the total). Of the top five counties participating, Bristol and Plymouth experienced the largest change over the 8-year period from 2000-2007, with Bristol increasing by seven percent and Plymouth decreasing by seven percent by 2007. Change in participation for the other top counties fluctuated between one-to-two percent over the same period.

Chart 3.5a - Total # Mass Vessels - 00/04/07 - A2/A3/OCC



Within LCMA3, Barnstable, Bristol, Essex, and Plymouth comprised 88% of the total participation in 2000. Of these four counties, Bristol's level of participation rose from 22% in 2000 to 40% by 2007, while Essex's participation level dropped from 29% to 5% during the same period. Change in participation for the other nine counties fell within single digits, with the exception of Norfolk County, which rose from 5% to 16% during the 2000-2007 period.

Table 3.7 - Massachusetts Lobster Vessels by County and LCMA - 00/04/07

	A2						A3						AOCC					
	2000		2004		2007		2000		2004		2007		2000		2004		2007	
	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total
Barnstable	49	19%	38	19%	32	18%	23	13%	4	9%	4	12%	78	45%	28	18%	60	46%
Bristol	58	23%	62	30%	52	30%	37	21%	19	44%	17	50%	8	5%	32	21%	21	16%
Dukes	30	12%	25	12%	25	14%	2	2%	0	0%	0	0%	1	1%	12	8%	1	1%
Essex	41	16%	27	13%	30	17%	50	29%	3	7%	2	6%	34	20%	38	25%	22	17%
Hampshire	1	0%	1	0%	0	0%	1	1%	0	0%	0	0%	1	1%	0	0%	0	0%
Middlesex	4	2%	2	1%	2	1%	5	3%	1	2%	1	3%	2	1%	3	2%	2	2%
Nantucket	4	2%	3	1%	2	1%	0	0%	0	0%	0	0%	3	2%	1	1%	2	2%
Norfolk	8	3%	9	4%	7	4%	8	5%	2	5%	0	0%	6	3%	6	4%	6	5%
Plymouth	53	21%	32	16%	24	14%	42	24%	13	30%	10	29%	39	22%	31	20%	15	11%
Suffolk	4	2%	3	1%	2	1%	4	2%	1	2%	0	0%	2	1%	3	2%	2	2%
Worcester	1	0%	2	1%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%
Total	**253**		**204**		**176**		**173***		**43**		**34**		**174**		**155**		**131**	

* Number includes 1 outlier (see footnote 73).

Charts 3.2b, 3.2c and 3.2d, below, graphically illustrate the data presented in Table 3.7 for the number of lobster vessels across Massachusetts counties from 2000-2007 for LCMAs 2, 3, and the OCC. One general conclusion can be made from these data: for some counties, the numbers of vessels *as a percentage of the total* have not changed significantly from 2000-2007, even though in absolute terms it may look like a large number of vessels have left the fleet. This is the case for Barnstable County, for example, where in LCMA2, the percentage of the total shifted only one percentage point, from 19% to 18%, from 2000-to-2007, even though the absolute number of vessels dropped from 49 to 32, or 35% over the same period. Similarly, Plymouth County's percentage of the total number of vessels in Massachusetts electing A2 declined from 21% to 14% from 2000-to-2007, while the absolute number of vessels dropped from 53 to 24, or 55%, during this time period.

A number of reasons may account for the loss of fishing vessels within a fleet and the data available are not robust enough to identify specifically how many vessels left for which reasons. Potential reasons, unquantifiable here, include:

- More restrictive regulations that create a disincentive to stay in the industry
  - Most Restrictive Rule[72] (requiring that a vessel owner abide by the more restrictive trap allocation of the LCMAs in which he/she fishes);
  - broodstock measures, such as gauge limit size, etc)
- Owners transfer out of one LCMA and into another perhaps
- Aging fishers decide to retire from the industry all together.
- More accurate accounting as a result of Most Restrictive Rule and, in the case of LCMA3, the move to a Federal Limited Access Program within LCMA 3, both of which helped to close the "gap" between what the size of the industry looked like "on paper" versus how many vessels were actually fishing in elected management areas.

[72] See Section 4.1 of this DEIS and Addendum XII (Appendix 3), Section 4.2 for a detailed description of the Most Restrictive Rule.

Chart 3.5b - Total # A2 Vessels by Mass County - 00/04/07

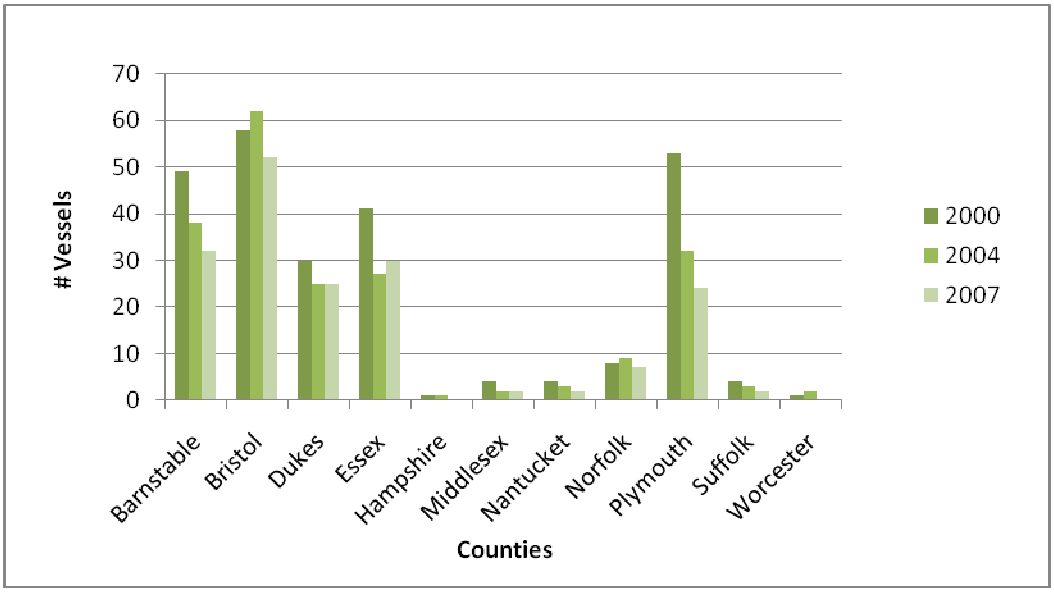


Chart 3.5c - Total # A3 Vessels by Mass County - 00/04/07

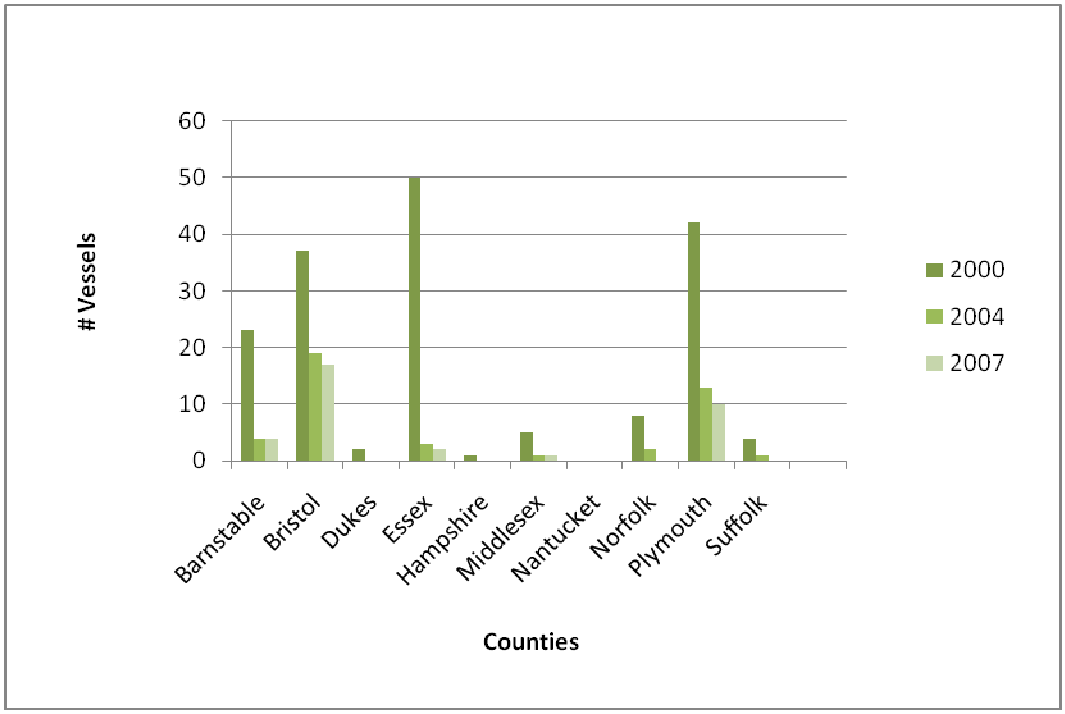
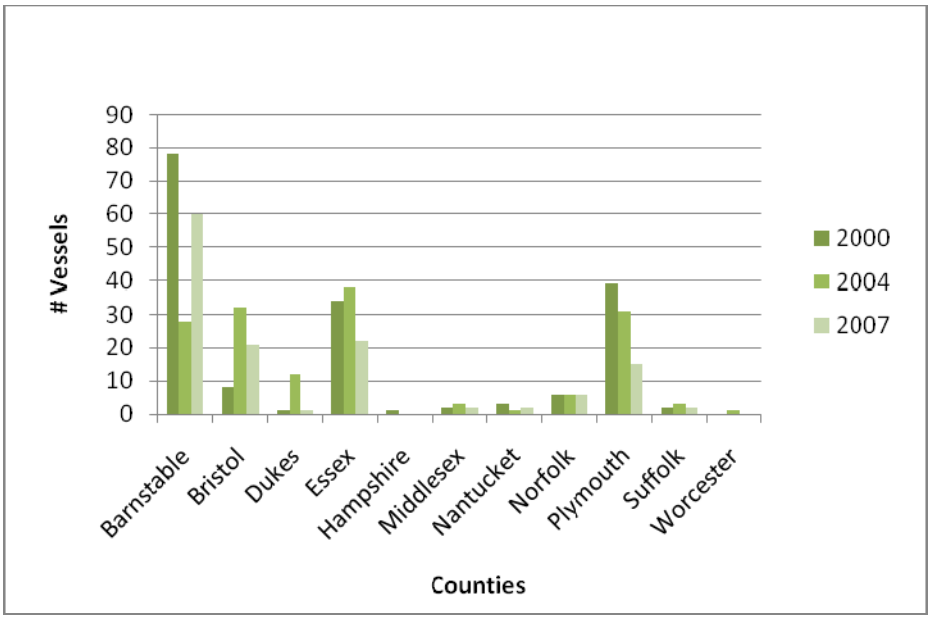


Chart 3.5d - Total # OCC Vessels by Mass County - 00/04/07



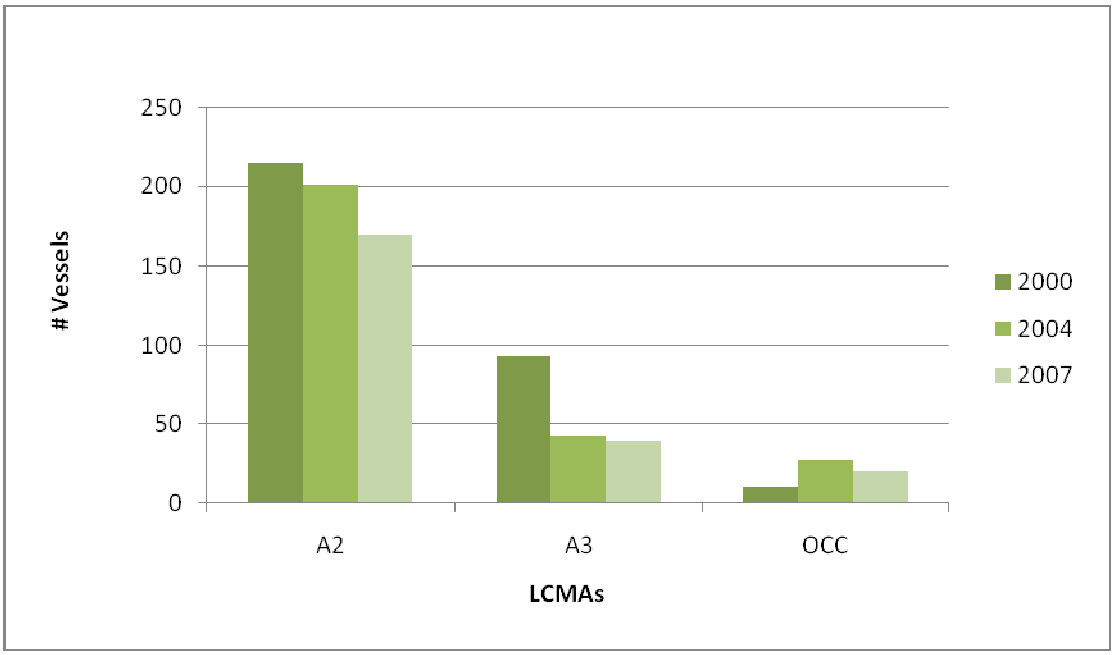
For LCMA 3, the top four counties, Barnstable, Bristol, Essex, and Plymouth, all experienced dramatic declines from 2000 to 2007 in the number of permitted vessels from those counties electing in A3, a result that largely reflects the Limited Access Program that was implemented there during this time period, as well as the other possible reasons identified above. At the same time, Bristol County's percentage share of the total nearly doubled, from 22 to 44 percent, though the number of vessels shrunk from 37 to 17 during this time period. In Plymouth County, the percentage share of the total number of vessels remained fairly steady, while in absolute terms, the number of vessels shrunk from 42 to 10.

For LCMA OCC, the top three counties, Barnstable, Essex, and Plymouth, all experienced moderate-to-significant declines from 2000-2007 in the number of permitted vessels electing to fish in this LCMA from those counties, a result that largely reflects the state management program implemented by Massachusetts during this time period, as well as the other possible reasons identified above. Bristol County, on the other hand, gained share in the overall fishery for the LCMA OCC throughout this period, rising from 5 to 18 percent and from 8 to 21 vessels. Plymouth County showed the most significant decline both in relative and absolute terms, dropping from 22 to 4 percent level of participation overall and from 39 to 4 vessels, respectively.

Rhode Island

For Rhode Island, participation in LCMA 2 dominates across all time periods relative to LCMA 3 or LCMA OCC (Chart 3.3a). Further, LCMA 2 and LCMA 3 showed moderate-to-significant decline in participation during the 2000-to-2007 period, while the LCMA OCC showed an increase of 50%. In general, these data are consistent with the impact one would expect to see following the implementation by Massachusetts of it management plan for the LCMA OCC, including the Most Restrictive Rule.

Chart 3.6a - Total # RI Vessels - 00/04/07 - A2/A3/OCC



At the county level, five counties--Bristol, Kent, Newport, Providence, and Washington--participated in the American Lobster fishery at some level from 2000-2007 (Table 3.8)[73]. Within LCMA 2, Newport and Washington counties comprised 88% of the total participation in 2000 (participation from the other four counties ranged from 1-7% of the total) and that percentage remained nearly constant over the 2000-to-2007 period. In LCMA3, Newport and Washington counties remained the dominant players, though they shifted their weight between each other +/- 7 to 10 percent from 2000-2007.

For LCMA OCC, Washington County is by far the dominant player in what is the smallest of the Rhode Island lobster fisheries, with 80-75 percent and 10-20 vessels electing to fish in that area over the 2000-2007 period.

[73] "Outliers" account for data entries that appear to be made in error (e.g., such as an inaccurate town listing) or that do not otherwise comport with the method of identifying vessel origin.

Table 3.8 - Rhode Island Lobster Vessels by County and LCMA - 00/04/07

	A2						A3						AOCC					
	2000		2004		2007		2000		2004		2007		2000		2004		2007	
	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total
Bristol	5	2%	7	3%	5	3%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%
Kent	16	7%	10	5%	9	5%	0	0%	0	0%	0	0%	1	10%	0	0%	0	0%
Newport	49	23%	46	23%	40	24%	29	31%	16	37%	16	41%	1	10%	12	44%	4	20%
Providence	2	1%	2	1%	3	2%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Washington	140	65%	133	66%	110	65%	61	66%	26	60%	23	59%	8	80%	14	52%	15	75%
outliers	3	1%	3	1%	2	1%	2	2%	1	2%	0	0%	0	0%	1	4%	1	5%
Total	**215**		**201**		**169**		**93**		**43**		**39**		**10**		**27**		**20**	

For the two top Rhode Island counties, Newport and Washington, the absolute number of vessels electing to fish in the LCMA 2 (Chart 3.3b) did not drop significantly over the 2000-2007 period (from 49-40 and 140-110, respectively). In LCMA 3, however, that number dropped dramatically from 61 to 23, in contrast to a much smaller decline of 7 percent relative to the total Rhode Island fishery during this time period (Chart 3.3c).

Chart 3.6b - Total # A2 Vessels by RI County - 00/04/07

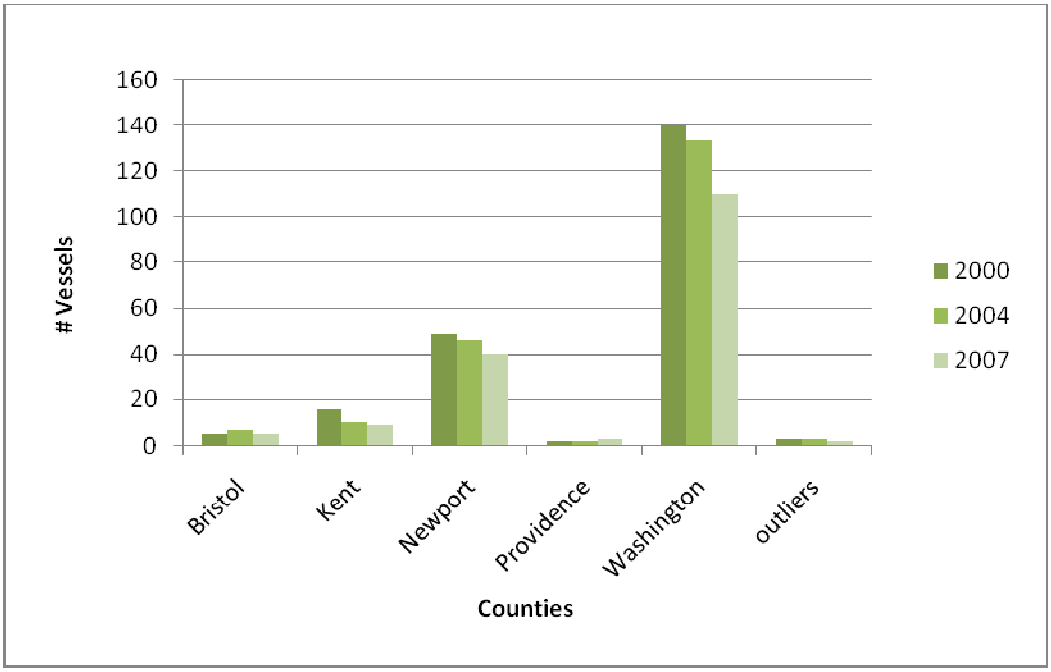
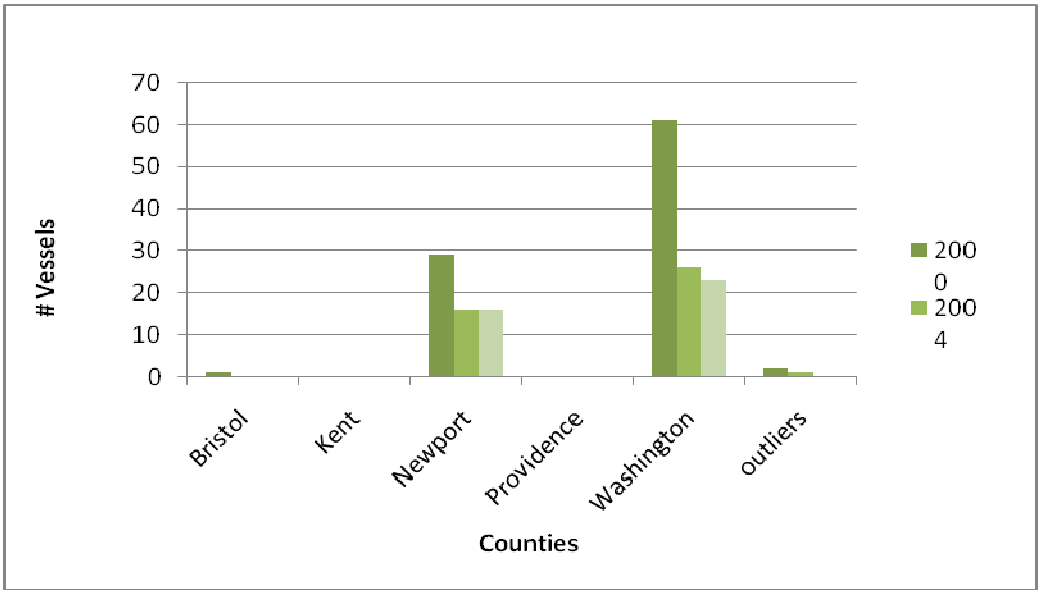
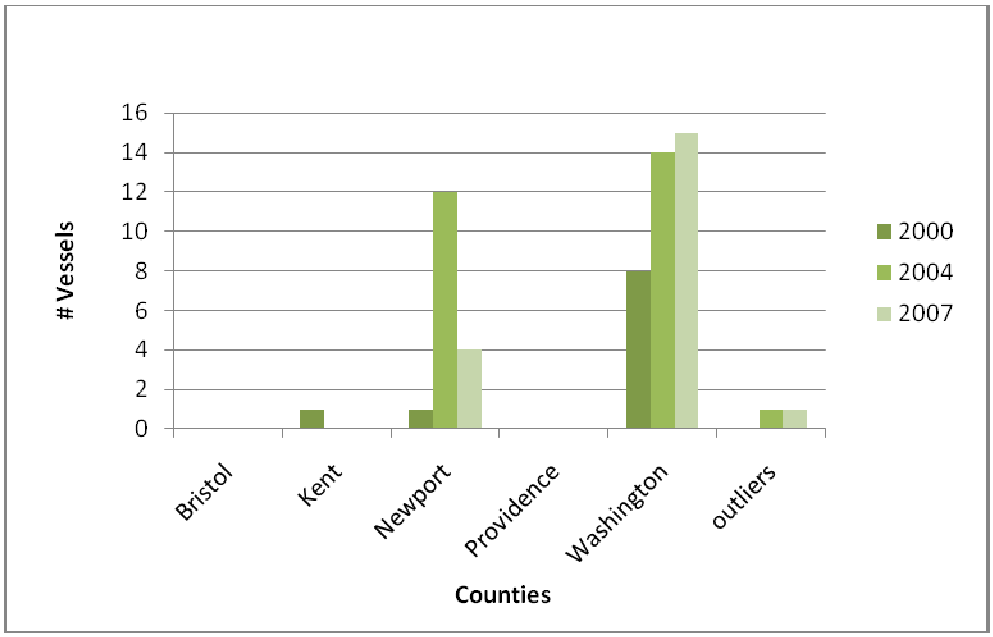


Chart 3.6c - Total # A3 Vessels by RI County - 00/04/07



In the LCMA OCC (Chart 3.3d), Newport and Washington remain the top two participants, though their overall numbers are dwarfed by the number found in the other two LCMAs (169 and 39 vessels for LCMAs 2 and 3, respectively, versus 20 vessels for the LCMA OCC).

Chart 3.6d - Total # AOCC Vessels by RI County - 00/04/07



Relative to Massachusetts and Rhode Island, New York and New Jersey represent a much smaller share of the overall American Lobster fishery along the East Coast of the United States; nonetheless, some similar trends in overall fishery participation are supported by the Federal permit data available, as described in the following sections below.

New York

For the New York fishery overall, what stands out is the shift in participation away from LCMA 3, following the implementation of a Limited Access Program there in 2004, into LCMAs 2 and OCC, both of which show rising levels of participation over the 2000-2007 period.

Chart 3.7a - Total # NY Vessels - 00/04/07 - A2/A3/AOCC

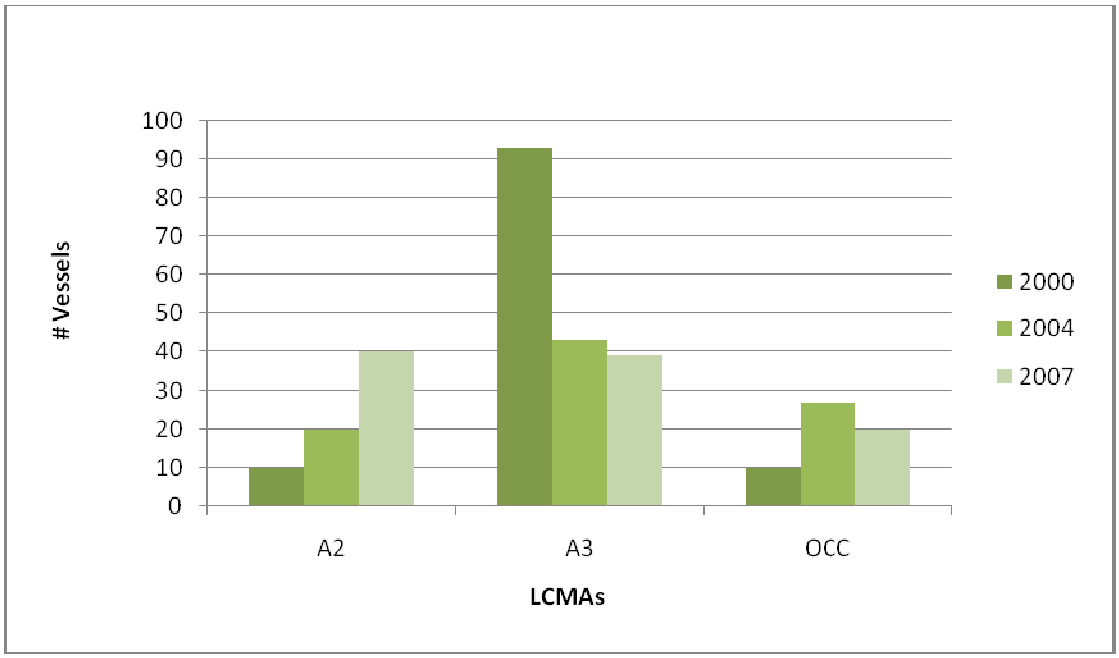


Table 3.9 - New York Lobster Vessels by County and LCMA - 00/04/07

	A2						A3						AOCC					
	2000		2004		2007		2000		2004		2007		2000		2004		2007	
	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total
Bergen	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Bronx	0	0%	1	2%	1	2%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Essex	0	0%	1	2%	0	0%	0	0%	1	10%	0	0%	0	0%	0	0%	0	0%
Kings	2	6%	2	5%	2	5%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Nassau	1	3%	2	5%	1	2%	6	26%	0	0%	0	0%	0	0%	0	0%	0	0%
Rockland	0	0%	1	2%	1	2%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Suffolk	28	85%	36	84%	37	88%	16	70%	9	90%	4	80%	5	100%	4	100%	6	100%
Westchester	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Outliers	2	6%	0	0%	0	0%	1	4%	0	0%	1	20%	0	0%	0	0%	0	0%
Total	**33**		**43**		**42**		**23**		**10**		**5**		**5**		**4**		**6**	

Suffolk County is by far the largest participant across all LCMAs, representing from 70-100% of the NY fishery at any one time during the 2000-2007 period (Table 3.9, above).

In terms of absolute numbers of vessels, the most notable change occurred in LCMA 3 (Chart 3.4a), which decreased from 23 to 5 over the 8-year period (2000-2007)--a 79% drop. This is consistent with the changes noted above that took place in the NY fishery following the implementation of a Limited Access Program for LCMA 3. Also consistent is the increase in vessels that occurred in the other LCMAs, 2 and the OCC, as boats migrated to other management areas once LCMA 3 became closed to them for lobster fishing (Charts 3.4b and 3.4d).

Chart 3.7b - Total # A2 Vessels by NY County - 00/04/07

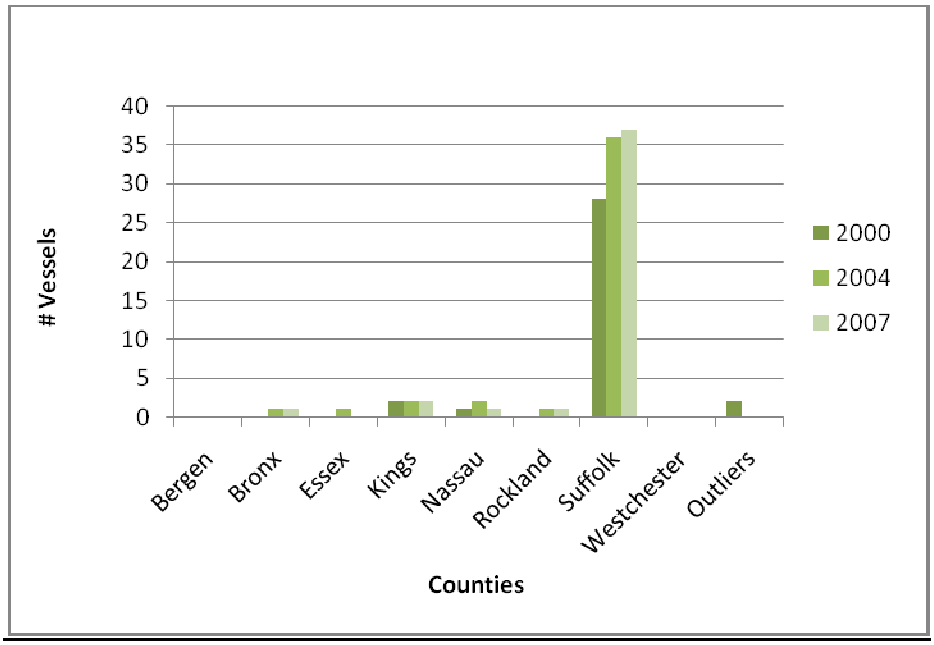


Chart 3.7c - Total # A3 Vessels by NY County - 00/04/07

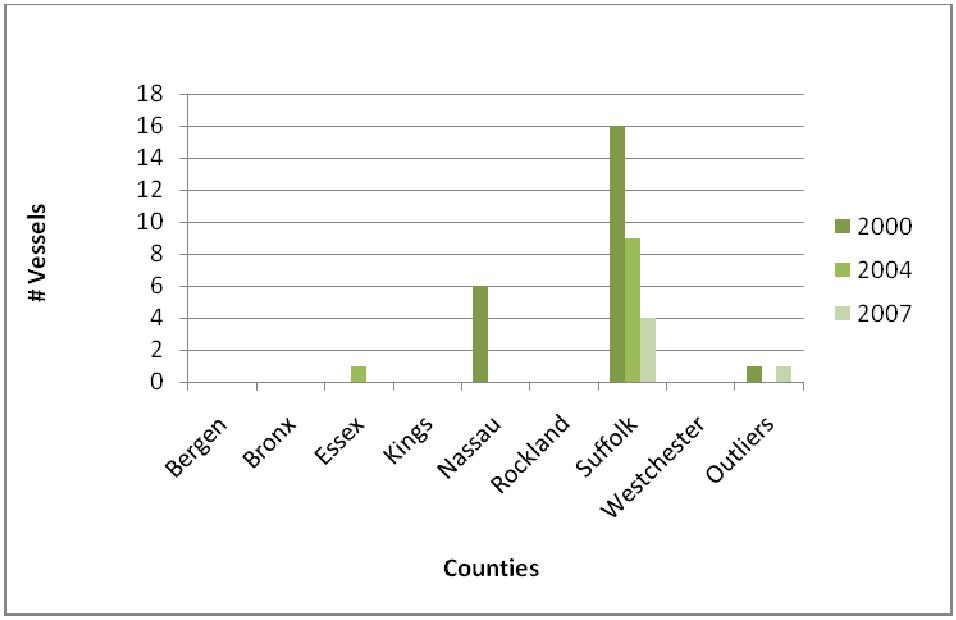
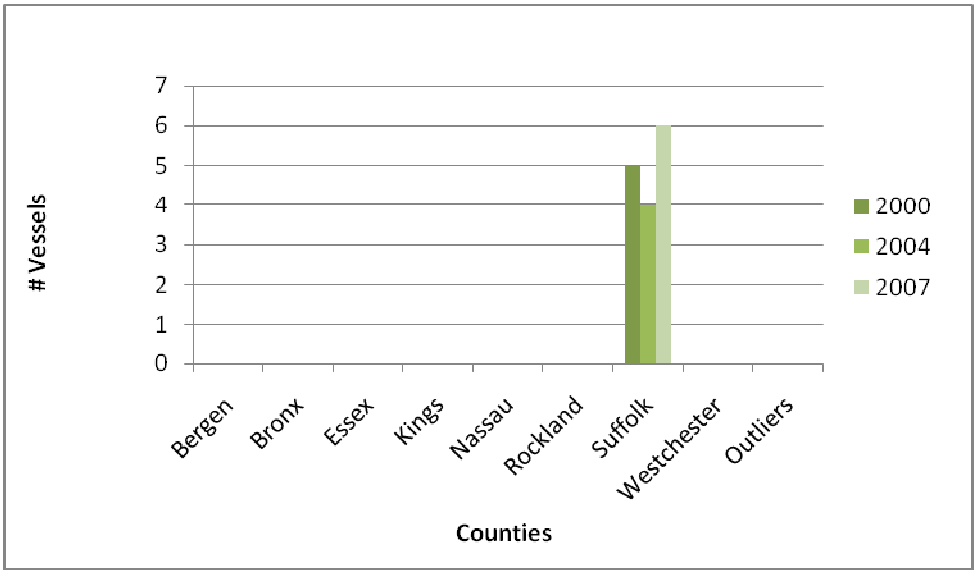


Chart 3.7d - Total # AOCC Vessels by NY County - 00/04/07

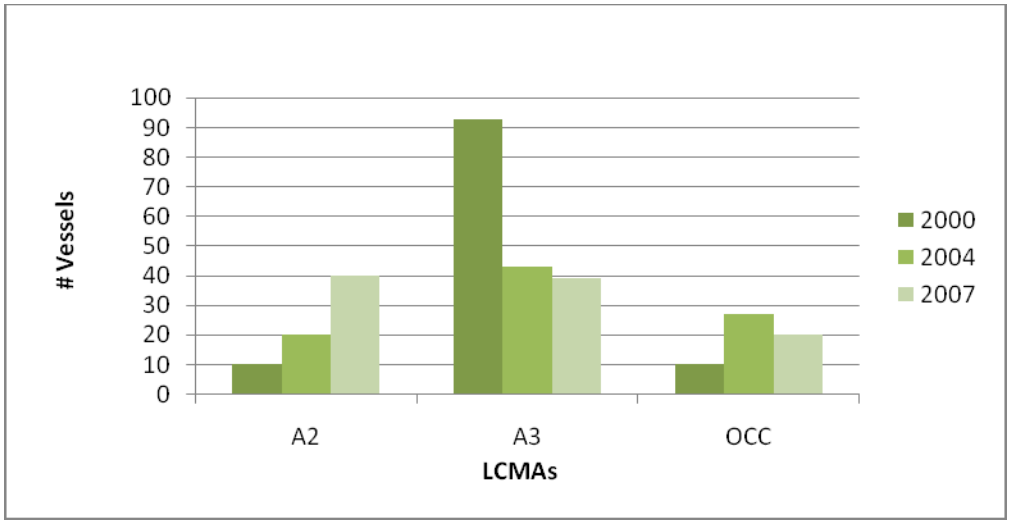


New Jersey

At the LCMA-level, events from 2000-2007 in New Jersey's American Lobster fishery are nearly identical to those described above for New York.

For the New Jersey fishery overall, Federal data shows a shift in participation away from LCMA 3, following the implementation of a limited access program there in 2004, and into LCMAs 2 and OCC from 2000-2007 (Chart 3.5a).

Chart 3.8 - Total # NJ Vessels - 00/04/07 - A2/A3/AOCC



At the county level, of the nine New Jersey counties participating from 2000-2007, three stand out as the dominant players across all LCMAs: Cape May, Monmouth, and Ocean (Table 3.10, below). Of these, Ocean County dominates in LCMA 2, followed Cape May and Monmouth counties, which reversed positions with each other during the 8-year period from 2000-2007. Similar to New York, New Jersey's participation in LCMA 3 dropped by a precipitous 87% from 2000-2007, following the implementation of a Limited Access program in that management area. With only nine NJ vessels left in the LCMA 3 fishery by 2007 (down from 67 in 2000), seven of those resided in Cape May County. For LCMA OCC, Ocean County begins and ends as the dominant presence during 2000-2007, followed by Monmouth and Cape May Counties.

Table 3.10 - New Jersey Vessels by County and LCMA - 00/04/07

	A2						A3						AOCC					
	2000		2004		2007		2000		2004		2007		2000		2004		2007	
	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total
Atlantic	0	0%	0	0%	1	4%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Bergen	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%
Cape May	1	10%	2	8%	8	29%	14	21%	8	50%	7	78%	0	0%	0	0%	3	33%
Cumberland	0	0%	0	0%	0	0%	0	0%	0	0%	1	11%	0	0%	0	0%	0	0%
Hudson	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Middlesex	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%
Monmouth	3	30%	5	21%	4	14%	20	30%	6	38%	1	11%	1	25%	1	10%	1	11%
Ocean	6	60%	16	67%	15	54%	28	42%	2	13%	0	0%	3	75%	8	80%	5	56%
Somerset	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Outliers	0	0%	1	4%	0	0%	3	4%	0	0%	0	0%	0	0%	1	10%	0	0%
Total	**10**		**24**		**28**		**67**		**16**		**9**		**4**		**10**		**9**	

Consistent with the trends described above, Federal permit data shows that Ocean County had the strongest representation in LCMAs 2 and OCC, while losing the highest number of vessels in LCMA 3 from 2000-2007 (Charts 3.5b, 3.5c, and 3.5d).

Chart 3.8b - Total # A2 Vessels by NJ County - 00/04/07

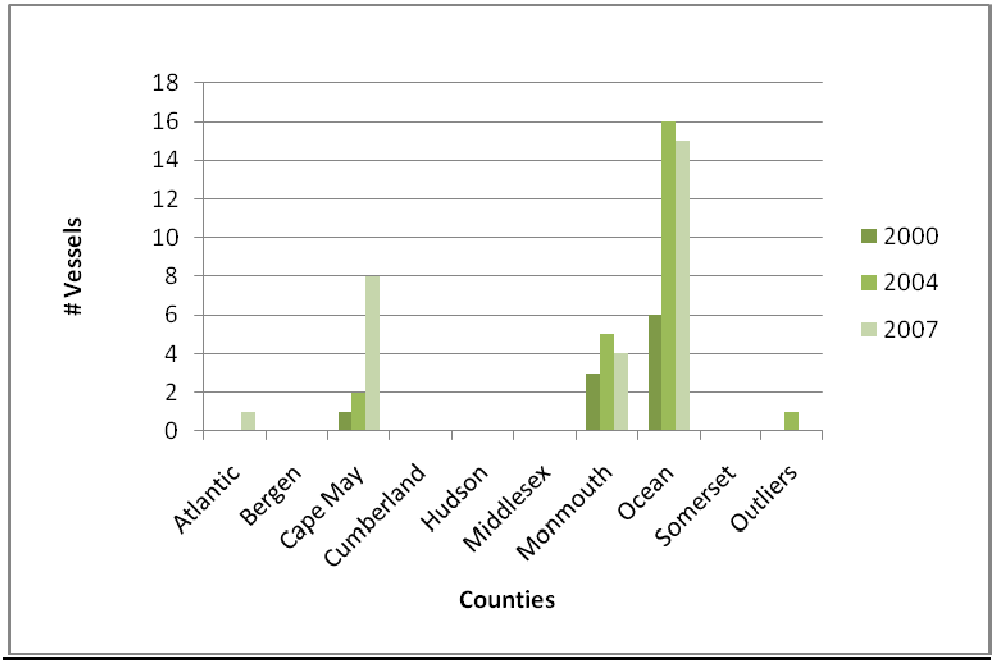


Chart 3.8c- Total # A3 Vessels by NJ County - 00/04/07

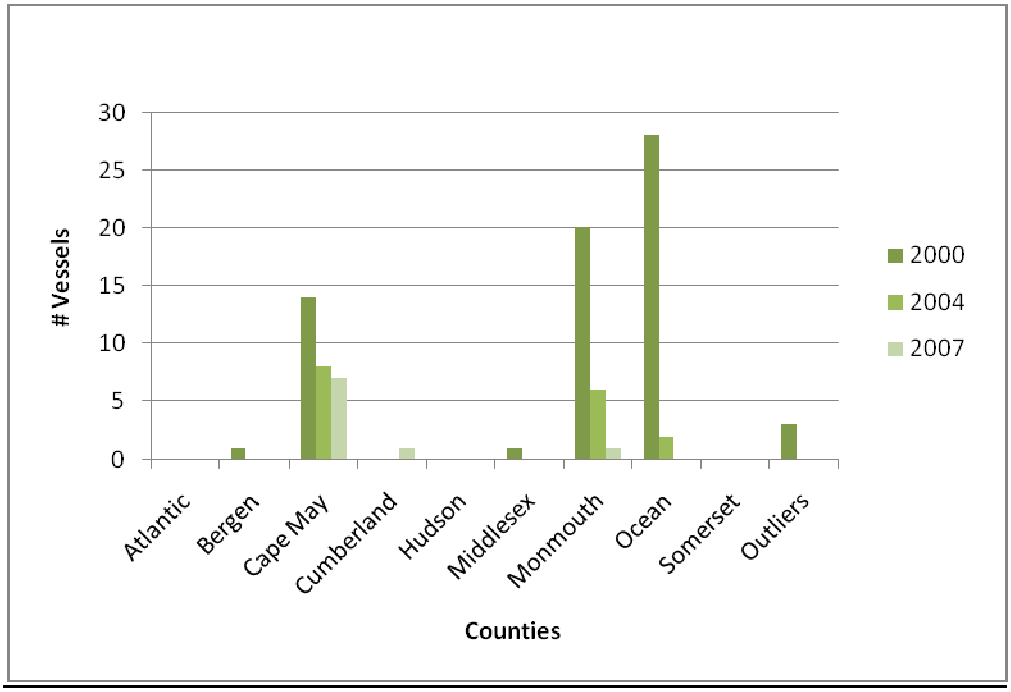
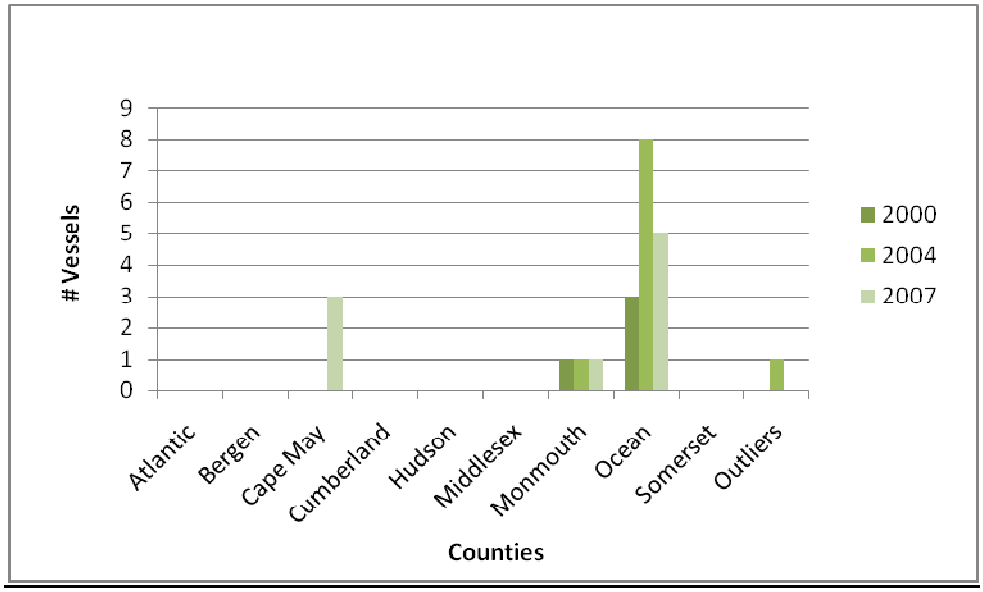


Chart 3.8d - Total # AOCC Vessels by NJ County - 00/04/07



Top Counties - Conclusions

Based on the analysis above, the following counties from Massachusetts, Rhode Island, New York and New Jersey are the most active in the American Lobster fishery across LCMAs 2, 3 and the OCC from 2000-2007:

Table 3.11 - Most Active Counties by State in the American Lobster Fishery (2000-2007)

State	Counties
Massachusetts	Barnstable, Bristol, Dukes, Essex, Plymouth
Rhode Island	Newport, Washington
New York	Suffolk
New Jersey	Ocean, Cape May

Social and Cultural Setting

Describing the social and cultural setting of the fishing communities potentially affected by the proposed American Lobster management measures necessarily requires some subjective analysis because the existing social science research focusing on these issues is either incomplete or unavailable. Where practicable, this analysis has been combined with objective data. It should be noted, however, that many of the standard demographic measures (e.g., median age, types of employment, race) mask what are arguably the most salient attributes of the potentially affected lobster fishing community from a social standpoint, attributes for which little or no hard data exists. Nonetheless, some standard measures are presented herein so as to provide information regarding these communities as they relate to each other and to the states in which they reside. Keeping these limitations in mind, some important examples of what U.S. Census statistics do not reveal about the potentially affected communities are as follows:

- **Current lobster license holders are, in general, an older population:** Available social science research, while not limited to the communities identified here, has shown that the American Lobster fishers are overall an older population, with many license holders curtailing their time "on the water" and considering themselves near retirement. U.S. Census Bureau median-age statistics do not capture this information.
- **The importance of commercial lobster fishing (and commercial fishing overall) to the social environment is under-represented in the available data:** Employment statistics hide the level of commercial fishing within a statistical area (e.g., state, town, county) under broad headings, such as "self-employed" or "agriculture, forestry, fishing and hunting, and mining."
- **Commercial lobster fishing plays a key role in the current social environment of many of the affected fishing communities:** Intuitively, one might argue that a sound economic base has an important influence on the social well-being of a community. For many of the towns identified with the most active commercial lobster industry, lobster ranks among the top-three in value of commercial landings relative to other fisheries, suggesting that this commercial fishery has a high relative importance to the current local economic and social well-being of those communities.

- **"Gentrification" within many existing fishing port communities along the east coast of the United States competes with the commercial fishing industry for needed real estate and infrastructure:** Seaport towns are considered prime real estate for residential and tourist development, which often compete against the commercial fishing industry's need for mooring space and land-based infrastructure.

For this analysis, the city or town within each of the counties identified above that has the strongest participation in the American lobster fishery (i.e., with the greatest number of permit holders) has been used as a proxy to represent the county as a whole and each one is evaluated for certain social and cultural characteristics. These characteristics include demographics (population, median age, education, ethnic origin) and cultural attributes (such as the regular occurrence of community events and attractions that celebrate the historic presence of the local fishing industry; social/cultural organizations that help to provide social support and services to the affected fishing communities; and gentrification, meaning that pressure within the town to convert port areas traditionally dedicated to fishing to another competing use, such as residential development, has been noted).[74] Demographic information comes from the U.S. Census Bureau, while information used to identify cultural attributes comes from the NMFS's Northeast Fisheries Science Center, "*Community Profiles for the Northeast US Fisheries*."[75]

[74] See "Guidelines for Assessment of the Social Impact of Fishery Management Actions," (NMFS 2002b).

[75] See selected Community Profiles in Appendix 10. See website for further profiles: http://www.nefsc.noaa.gov/read/socialsci/community_profiles/.

Table 3.12 - State & County Social/Cultural Data - 2005-2007

	Demographic Data				Cultural Attributes			
	Population (est.)	Median Age	% with High School Education or Greater (2)	% non-white population	Noted Presence of Cultural Attributes Related to Fishing Industry (3)	Noted Institutional Presence Related to Fishing Industry (3)	Rank Value of Lobster Fishery Relative to Other Fisheries (3)	Noted Gentrification Issues (3)
Massachusetts	6,437,759	38	88%	17%				
Essex	731,841	39	88%	16.8%				
Gloucester	27,858	50	91%	2.7%	Yes	Yes	2	Yes
Barnstable	223,574	46	94%	5.5%				
Chatham	6625 (1)	54 (1)	93% (1)	4.0%	Yes	Yes	3	Yes
Bristol	543,146	38	79%	10.0%				
New Bedford	93,812	36	64%	24.5%	Yes	Yes	5	Yes
Dukes	14,987 (1)	41 (1)	90% (1)	9.3%				
Chilmark	843 (1)	46 (1)	98%	2.3%	Yes	Yes	1	Yes
Plymouth	488,878	39	91%	13.2%				
Scituate	17,863 (1)	41 (1)	96% (1)	3.3%	Yes	Yes	2	Yes
Rhode Island	1,048,319	37	78%	15%				
Washington	128,000	40	93%	4.2%				
Wakefield	8,468	37	90%	10%	Yes	Yes	Unknown	Unknown
Newport	82,000	43	90%	3.3%				
Little Compton	3,593	44	80%	1.3%	Yes	Yes	3	Unknown
New York (1)	18,976,457	36	79%	32%				
Suffolk	128,000	40	89%	4.2%				
Montauk (1)	3,851	39	84%	11%	Yes	Yes	7 (2006)	Yes
New Jersey (1)	8,414,350	37	82%	27%				
Cape May	97,724	47	87%	18%				
Cape May (1)	4,034	47	88%	25%	Yes	Yes	6	Unknown
	(1) 2000 data							
	(2) Persons 25 years or older							
	(3) see Appendix 10 for selected community profiles.							

3.4 AMERICAN LOBSTER

3.4.1 Biological Characteristics

The information contained in this section is a summary of the life history and reproductive success of the American lobster. For a more extensive review of the status of American lobster, see the Commission Stock Assessment Report No. 06-03, dated January 2006 (ASMFC 2006a) located at the Commission's website at www.asmfc.org.

The American lobster is a long-lived species known to reach more than 40 pounds (18 kg) in body weight (Wolff 1978). The American lobster is a bottom-dwelling, marine crustacean characterized by a shrimp-like body and ten legs, two of which are enlarged to serve as crushing and gripping appendages. Lobsters are encased in a hard external skeleton that provides body support and protection. Periodically, this skeleton is cast off to allow body size to increase and mating to take place. Lobster growth and reproduction are linked to the molting cycle. The age of lobsters is unknown because all hard parts are shed and replaced at molting, leaving no accreting material for age determinations. Traditionally, scientists estimate the age of lobsters based on size, per-molt growth increments and molt frequencies. Based on this kind of information, Cooper and Uzmann (1980) estimated that the American lobster may live to be 100 years old.

Recent information from European lobster, *H. gammarus* (Addison 1999), indicated a large variation in age at size with seven year classes making up the 85-95 mm size class. Research on aging of lobsters using lipofusion was conducted in the UK on measurements from the eyestalk ganglia (Sheehy and Bannister 2002). Molting was so erratic and protracted that European lobster between 70 and 80 mm CL required at least five years to fully-recruit to legal size (81 mm) in the trap fishery off the UK (Sheehy et al. 1996). These researchers have concluded that changes in lobster body length explained less than 5 percent of the variation in true age in European lobster. Predicted sizes at age were significantly below those estimated from tagging studies, and large animals approached 54 years in age using lipofusion data.

Water temperatures exert significant influence on reproductive and developmental processes of lobster. Huntsman (1923, 1924) found that larvae hatched in water less than 15° C developed much more slowly than those hatched in warmer water. Size at maturity is related to summer water temperatures, *e.g.*, high temperatures enhance maturation at small sizes, and the frequency of molting increases with water temperature (Aiken 1977). Within the range of lobster, water temperatures tend to increase from north to south and tend to range higher inshore than offshore. However, the size increase per molt was shown to be smaller in blue crabs raised in warmer waters (Leffler 1972); and adult lobsters exhibited a smaller size increase per molt in warmer areas (NUSCO 1999) compared to those measured in the U.S. offshore waters (Uzmann et al. 1977, Fogarty and Idoine 1988). Early maturity occurs in relatively warm water locations in the Gulf of St. Lawrence and inshore southern New England, while in the deeper offshore waters off the northeastern U.S. and in the Bay of Fundy, maturation occurs at larger sizes (Krouse 1973; Aiken and Waddy 1980; Van Engel 1980; Campbell and Robinson 1983; Fogarty and Idoine 1988; Estrella and McKiernan 1989).

Lobsters typically form a brief pair bond for mating. Female lobsters can mate at any molt stage, but their receptivity peaks immediately after molting (Dunham and Skinner-Jabobs 1978; Waddy and Aiken 1990). Mating takes place within 24 hours of molting and usually within 30 minutes (Talbot and Helluy 1995). Eggs (7,000 to 80,000) are extruded and carried under the female's abdomen during the 9 to 12 month incubation period. Hatching and release of larvae occur while eggs are still attached to the female (Talbot and Helluy 1995). Seasonal timing of egg extrusion and larval hatching is somewhat variable among areas and may also vary due to seasonal weather patterns. Overall, hatching tends to occur over a four month period from May through September, occurring earlier and over a longer period in the southern part of the range.

Smaller lobsters molt more often than larger ones; however, larger females (>120 mm carapace length) can spawn twice between molts, making their relative fecundity greater than females within one molt of legal size (Waddy et al. 1995). Larger lobsters produce eggs with greater energy content and thus, may produce larvae with higher survival rates (Attard and Hudon 1987). Once the eggs mature, prelarvae are released by the female over the course of several days. For the first three molt stages (15-30 days), larvae remain planktonic. During settlement, fourth stage post larvae exhibit strong habitat selection behavior and seek small shelter-providing substrates, with the greatest abundance of newly settled lobsters occurring in cobble beds (Wahle and Steneck 1991; Cobb and Wahle 1994; Palma et al. 1999). (See section 3.2 – Description of Physical Environment for more information on lobster habitat selection behavior).

During their first year on the sea bottom, lobsters move little and can be found within a meter of where they settled (Wahle 1992; Palma et al. 1999). They do not usually emerge from their shelters until reaching about 25 mm CL (Wahle 1992; Cobb and Wahle 1994). As they grow, their daily and annual ranges of movement increase. Adolescent phase lobsters are found on a variety of bottom types, usually characterized by an abundance of potential shelters. By the time lobsters reach sexual maturity, the annual range of lobster averages just over 20 miles (32 km) (Campbell and Stacko 1985; Campbell 1986). In general, mature legal lobsters are more abundant offshore and in deeper water (Harding and Trites 1989). For the offshore trap fishery, the deep water canyons contain habitat with an abundance of favorable potential shelters. Clay and mud allow lobsters to excavate burrows up to 1.5 meters long with bowl-like depressions that may shelter several lobsters at a time. However, while gravel and rocky habitat provide ready-made shelters, large sexually mature lobsters are capable of traversing great distances and show at least three different migration behaviors: those that do not migrate; those who migrate seasonally; and those who migrate long distances. Fogarty (1998) calculated that even a modest amount of offshore larvae supplied by larger sexually mature lobsters could add significantly to the resiliency of inshore areas.

Several studies have shown that lobster growth rates decline as food availability and quality decline (Castell and Budson 1974; Bordner and Conklin 1981; Capuzzo and Lancaster 1979). In laboratory studies, greater densities of lobster as well as limited space reduce growth rates (Stewart and Squires 1968; Hughes et al. 1972; Aiken and Waddy 1978; Van Olst et al. 1980; Ennis 1991). Growth rates of smaller lobster seem to be slower when they are in the presence of larger lobster (Cobb and Tamm 1974, 1975). All of these variables have been shown to influence the frequency of molting and/or the length of the molt increments.

The adult American lobster is the largest mobile benthic invertebrate in the North Atlantic. Estrella and Morrissey (1997) reference multiple tagging studies in the offshore (Saila and Flowers, 1968; Cooper and Uzmann, 1971, 1980; Uzmann et. al. 1977; Fogarty et al, 1980; Campbell et al, 1984) and southern nearshore (Morrissey, 1971; Briggs and Muschacke, 1984) areas supporting the movement of large, sexually mature lobster from offshore to inshore areas with the potential for individual lobster from different stocks becoming intermixed. A tagging study in the Outer Cape Area (Estrella and Morrissey, 1997) indicated that lobster recaptured within 200 days of tagging were capable of traveling a notable distance from the point of release. Larger, legal-sized, egg-bearing lobster were found to travel greater distances (an average of about 26 km) than sublegal individuals (Estrella and Morrissey, 1997).

Estrella and Morrissey (1997) also reference the research of Cooper and Uzmann (1971) and Uzmann et al. (1977) indicating that tagged lobster were observed to move to deep canyon areas in late fall and winter, migrating back to shoaler water in spring and summer. The recapture patterns in these experiments represent movement from Georges Bank and deepwater canyons to the south to areas east of Cape Cod. Estrella and Morrissey (1997) found in their tagging work that tagged lobster exhibited a northerly and westerly movement pattern along the eastern shore of Cape Cod, consistent with the

findings of Morrissey (1971) where movements from eastern Cape Cod into Cape Cod Bay were observed. These studies support the movement and mixing of inshore and offshore lobster stocks. Consequently, this supports the theory that lobster move between stock areas and management areas.

The relatively large size of the American lobster in its niche and large claws make it an important predator. Adult lobsters are omnivorous, feeding largely on crabs, molluscs, polychaetes, sea urchins, and sea stars (Ennis 1973; Carter and Steele 1982; Weiss 1970). Live fish and macroalgae are also part of the natural diet. Lobsters are opportunistic feeders, so their diet varies regionally. In areas where lobster traps are numerous, bait in lobster traps are a substitute for the normal diet but are known to be nutritionally deficient in comparison. Lobster larvae and postlarvae eat zooplankton during their first year (Lavalli 1988). Copepods and decapod larvae are common prey items, but cladocerans, fish eggs, nematodes, and diatoms have been noted.

Factors Affecting Survival

The natural mortality rate in post settlement lobster is generally considered to be low because they are a long-lived species that produce fairly small egg clutches, carry their eggs for months until they hatch, and are not very vulnerable to predation, especially as they become larger. A low and stable natural mortality rate seems less certain for inshore lobster stocks south of Cape Cod (ASMFC 2006a). The dominant source of natural mortality includes predation, disease, and extreme environmental conditions. Predation pressures seem related to size and habitat. The presence of shelter greatly reduces predation mortality (Cobb et al., 1986; Richards, 1992). Mortality due to predation decreases as the lobster grows (Wahle 1992). The effects of disease can be as profound as predation or exploitation (Anderson and Hart, 1979; Hart 1990). A number of animals parasitize lobsters, including protozoa, helmintha, and copepods. Aiken and Waddy (1986) and Sherburne and Bean (1991) reported a cyclical infestation of the ciliate *Mugardia* spp. in lobsters. Eggs are subject to high mortality rates by a nemertean worm, *Pseudocarcinonemertes homari*. A well-known disease that leads to the development of gaffkemia, a fatal infection (Stewart 1980), is caused by the bacteria *Aerococcus viridans*.

External bacteria that digest the minerals in a lobster's shell cause shell disease. Shell disease is believed to be the result of opportunistic bacteria exploiting an injury or poor physiological state of the lobster (Getchell 1989). Ovigerous female lobsters display the highest rate of infection and carapace damage because they molt less frequently and therefore, have older shells. There has been a recent increase in the incidence of shell disease in the southern New England area. The consequences of shell disease on natural mortality are not known. The recent increase in shell disease may also be an indication of stresses in the lobster populations. Laboratory studies have shown that lobster with shell disease can heal themselves by molting out of the diseased shell and replacing it with a new healthy one. However, if the disease-causing bacteria become thick enough to penetrate completely through a lobster's shell, internal lesions lead to a compromised immune system or death. Ecdysone, a hormone that controls the molting process in lobster, has been found at levels well above normal in shell-diseased lobster, indicating that severe cases of the disease may interfere with normal molting and result in early molting (Biggers and Laufer, 2004). Since the disease is most prevalent in egg-bearing females, early molting may cause declines in reproduction.

Lobster are preyed upon by a variety of bottom inhabiting species, including teleost fish, sharks, rays, skates, octopuses, and crabs (Phillips and Sastry, 1980). Larvae are subject to predation in the water column, and postlarvae are vulnerable to mud crabs, cunner, and an array of other bottom-feeding finfish species after settlement. However, once postlarvae are established in shelter, they are thought to be relatively safe from fish predators (Wahle and Steneck 1992) but not necessarily invertebrates, such as burrowing crabs (Lavalli and Barshaw 1986). Mud crabs are abundant throughout the northeast as are green crabs and rock crabs, which are also suspected predators on post-larvae. When not in their burrows, the foraging early benthic phase and larger juvenile lobsters are prey to sculpin, cunner, tautog, black sea bass, and sea raven (Cooper and Uzmann 1980). Atlantic cod, wolffish, goosefish, tilefish, and several

species of shark consume lobsters up to 100 mm CL (Cooper and Uzmann 1977; Herrick 1909). With the recovery of the striped bass resource, substantial predation of sublegal lobster by striped bass has been reported. While settling lobsters suffer extraordinarily high predation rates, and pre-recruits and fully-recruited lobsters are subject to predation when foraging, larger lobsters (>100 mm CL) may be immune to predation.

Lobsters and crabs compete for space and food (Richards et al., 1983; Cobb et al., 1986; Richards and Cobb, 1986), though evidence also indicates that rock crabs are a significant food source for the condition, growth and reproduction of lobsters (Gendron, et al 2001). These studies show competition between lobsters and crabs caused a redistribution of individuals. Lobsters that lost space to their competitors also showed an increased mortality. Intra-specific competition among lobsters is well known (O'Neill and Cobb, 1979). Large body size and claw size are particularly important in determining competitive dominance among lobsters selecting shelters. When local population densities increase, larger lobsters diffuse to habitats where total population densities are lower (Steneck 1989; Lawton and Lavalli 1995). Mortalities that result from aggression between lobsters may not represent predation but do represent an additional source of natural mortality.

Interactions with Non-target Species

Several marine fish and shellfish species are incidentally caught in the directed lobster trap fishery. These species vary depending on seasons and geographic area. Size of individuals caught in lobster traps is generally limited by the circular openings in the entrance of the trap as well as the escape vent size. This section discusses, on a qualitative level, some species that are most likely expected to be caught in lobster traps. This is not meant to be an exhaustive list of all the regulated and non-regulated species that may be caught in the traps.

The coastal lobster trap fishery in Massachusetts Bay and the Gulf of Maine is a seasonal one that directly targets lobster. Bycatch species include various species of crabs (*Cancer spp.*), and unregulated benthic finfish species such as sculpins (*Myoxocephalus spp*.), sea raven (*Hemitripterus americanus*), sea robins (*Prionotus spp*.), wrymouth eel (*Cryptacanthoides maculates*), lumpfish (*Cyclopterus lumpus*), Atlantic tomcod (*Microgadus tomcod*), and windowpane flounder (*Scopthalmus aquosus*). Regulated species such as cod (*Gadus morhua*), haddock (*Melanogrammus aeglefinus*), pollock (*Pollachius virens*), and red hake (*Urophycis chuss*) may be encountered in lobster traps. Flatfish such as yellowtail flounder (*Limanda ferrugina*), winter flounder (*Pseudopleuronectes americanus*) and American plaice (*Hippoglossiodes platessoides*) may also be encountered in the traps. Regulated species to a varying degree are sometimes harvested if the vessel has the associated permits necessary to do so, as required under 50 CFR part 648.

South of New England, the trap fishery remains directed on lobster although some vessels, with the appropriate permits, may seasonally focus their efforts on finfish such as tautog (*Tautoga onitis*), scup (*Stenotomus chrysops*) and black sea bass (*Centropristis striata*) in the coastal fisheries from Nantucket Sound south to North Carolina. Incidental catch of non-Federally regulated species such as crabs (*Cancer spp.*), four-spot flounder (*Paralychthys oblongus*), among others is likely. All vessels with a Federal lobster permit are required to comply with the lobster gear specifications set forth under the Federal lobster regulations at 50 CFR § 697.21 regardless of whether lobster is the target species. Concerned with the impacts on commercial fishing enterprises from differing management systems, the Mid-Atlantic Fishery Management Council (Mid-Atlantic Council) and the Commission requested that NMFS provide an exemption from the lobster gear requirements to black sea bass fishers in the Mid-Atlantic area, specifically in Lobster Management Area 5. Black sea bass fishermen typically use smaller escape vents in their traps than that required by the Federal lobster regulations and may use as many as 1,500 traps, compared to the maximum lobster trap limit of 1,440 in this management area. Area 5 has historically represented less than 2 percent of total coastwide lobster landings, and these dual permit holders tend to direct their fishing on black sea bass, with lobster as a marketable bycatch. The Mid-Atlantic Council and Commission recommended further that the incidental lobster allowance that applies to non-trap lobster

fishermen be applied to exempted black sea bass fishers. In response to these recommendations and after several opportunities for public comment, NMFS published a final rule in the Federal Register on March 13, 2001 (66 FR 14500). This rule allows black sea bass fishers who concurrently hold limited access lobster and limited access black sea bass permits to temporarily request to enter into the Area 5 waiver program, which allows them to participate in a directed black sea bass trap fishery in Area 5 while exempt from the lobster trap gear specifications. While in the waiver program, the vessels are limited to the non-trap lobster possession limits.

In the offshore component of the fishery, Federal lobster vessels direct their trap fishing on lobster. Some bycatch of regulated and non-regulated finfish and shellfish species is known to occur. Specifically, the regulated species mentioned above as well as Atlantic wolf fish (*Anarhicas lupus*), white hake (*Urophycis tenuis*), cusk (*Brosme brosme*), and red fish (*Sebastes fasciatus*) may also be encountered. The red crab fishery is a directed trap fishery occurring in the deeper canyons along Georges Bank. Of the generally small number of participants in this fishery, some subset may hold Federal lobster permits and therefore may keep lobster as a bycatch for commercial purposes as regulations allow. Due to the depths at which the red crab fishery is prosecuted, lobster are not as likely to be encountered in red crab directed trap fishing operations.

Physical Habitat Characteristics

Juvenile and adult American lobsters occupy a wide variety of benthic habitats from the intertidal zone to depths of 700 meters. They are most abundant in relatively shallow coastal waters. Shelter is a critical habitat requirement for lobsters.

Once released into the water column, the American Lobster larvae remain planktonic for four life-stages before settling to the sea floor (ASMFC 2000). The time larvae spend between hatching and stage IV also varies, largely with the ocean temperature, ranging from approximately 10 days at 23°C to nearly two months at 10°C. During settlement, 4th stage post-larvae exhibit strong habitat selection behavior and seek small shelter-providing substrates (Hudon 1987; Wahle and Steneck 1991, 1992; Incze et al. 1997; Palma et al. 1999). The highest abundance of newly settled lobster is in cobble beds (Wahle and Steneck 1991; Cobb and Wahle 1994; Palma et al. 1999) but they have been found at low densities in marsh grass root mats in southern New England (Able et al.1988). Young of the year lobster are rare or absent from sediment substrates and eel grass habitats although early benthic phase lobster (sensu Steneck 1989; Wahle and Steneck 1991 for lobster < 40 mm CL) are not.

Early benthic phase lobster are cryptic and quite restricted in habitat use (Wahle and Steneck 1991; Lawton and Lavalli 1995). They usually do not emerge from their shelters until reaching about 25 mm CL (Wahle 1992; Cobb and Wahle 1994). Larger, but still immature, adolescent phase lobster are found on a variety of bottom types, usually characterized by an abundance of potential shelters. Inshore, they are found in greatest abundance in boulder areas (Cooper and Uzmann 1980) but they also seek shelter under large algae such as kelp (Bologna and Steneck 1993). Adolescent-phase lobster also live on relatively featureless substrate where juvenile population densities are generally low (Palma et al.1999). Juvenile densities are high in shallow water, (0-30 ft) on sand, and mud substrate in inshore Massachusetts waters (Estrella, personal communication).

The following description of lobster habitats in the Northeast region of the U.S. (Maine to North Carolina) is based primarily on a report prepared by Lincoln (1998) from a variety of primary source documents. This information has been supplemented by the addition of some more recent research results. Table 3.13 summarizes information on lobster densities by habitat type. Unless otherwise noted, the information noted below was originally provided by Cooper and Uzmann (1980).

Inshore Lobster Habitats

Estuaries

- *Mud base with burrows* – These occur primarily in harbors and quiet estuaries with low current speeds. Lobster shelters are formed from excavations in soft substrate. This is an important habitat for juveniles, and densities can be very high, reaching 20 animals per square meter.
- *Rock, cobble and gravel* – Juveniles and adolescents have been reported on shallow bottom with gravel and gravely sand substrates in the Great Bay Estuary, NH, on gravel/cobble substrates in outer Penobscot Bay, ME (Steneck and Wilson 1998), and in rocky habitats in Narragansett Bay, RI (Lawton and Lavalli 1995). Densities in Penobscot Bay exceeded 0.5 juveniles and 0.75 adolescents/m^2. According to unpublished information cited by Lincoln (1998), juvenile lobsters in Great Bay prefer shallow bottoms with gravely sand substrates.
- *Rock/shell* – Adult lobsters in the Great Bay Estuary use sand and gravel habitats in the channels but seem to prefer a rock/shell habitat more characteristic of the high temperature, low salinity regimes of the central bay.

Salt Marshes/Peat

Lobster shelters are formed from excavations cut into peat. Reefs form from blocks of salt marsh peat that break and fall into adjacent marsh creeks and channels and seem to provide moderate protection for small lobsters from predators (Barshaw and Lavalli 1988). Densities are high (up to 5.7/m^2).

Kelp beds

Kelp beds in New England consist primarily of *Laminaria longicruris* and *L. saccharina*. Lobsters were attracted to transplanted kelp beds at a nearshore study site in the mid-coast region of Maine, reaching densities that were almost ten times greater than in nearby control areas (Bologna and Steneck 1993). Lobsters did not burrow into the sediment but sought shelter beneath the kelp. Only large kelp (> 50 cm in length) was observed sheltering lobsters and was used in the transplant experiments.

Eelgrass

Lobsters have been associated with eelgrass beds in the lower portion of the Great Bay Estuary in New Hampshire (Short et al. 2001). Eighty percent of the lobsters collected from eelgrass beds were adolescents. Average density was 0.1/m^2, greater than reported by Barshaw and Lavalli (1988). In mesocosm experiments, Short et al. reported that lobsters showed a clear preference for eelgrass over bare mud. This research showed that adolescent lobsters burrow in eelgrass beds, use eelgrass as an overwintering habitat, and prefer eelgrass to bare mud.

Intertidal Zone

Research in Maine has demonstrated the presence of early settlement, postlarval, and juvenile lobsters in the lower intertidal zone (Cowan 1999). Two distinct size classes were consistently present: 3-15 mm CL and 16-40 mm CL. Monthly mean densities during a five-year period ranged from 0-8.6 individuals/m^2 at 0.4 m below mean low water. Preliminary results indicate that areas of the lower intertidal zone serve as nursery grounds for juvenile lobster.

Inshore Rock Types

- *Sand base with rock* – This is the most common inshore rock type in depths > 40 m. It consists of sandy substrate overlain by flattened rocks, cobbles, and boulders. Lobsters are associated with abundant sponges, Jonah and rock crabs. Shelters are formed by excavating sand under a rock to form U-shaped, shallow tunnels. Densities of sub-adult lobsters are fairly high (Table 3.13).
- *Boulders overlaying sand* – This habitat type is relatively rare in inshore New England waters. Compared to other inshore rocky habitats, densities are low (Table 3.13).
- *Cobbles* – Lobsters occupy shelters of varying size in the spaces among rocks, pebbles, and boulders. Densities as high as 16 lobsters/m^2 have been observed, making this the most densely populated inshore rock habitat for lobsters in New England.
- *Bedrock base with rock and boulder overlay* – This rock type is relatively common inshore from low tide to depths of 15-45 m. Shelters are formed by rock overhangs or crevices. Encrusting coralline algae and attached organisms such as anemones, sponges, and mollusks cover exposed surfaces. Green sea urchins and starfish are common. Cunner, tautog, sculpin, sea raven, and redfish are the most abundant fish. Lobster densities are low (Table 3.13).
- *Mud-shell/rock substrate* – This habitat type is usually found where sediment discharge is low and shells make up the majority of the bottom. It is best described off Rhode Island. Densities are low.

Offshore Lobster Habitats

- *Sand base with rocks* – Although common inshore (see above), this habitat is rather restricted in the offshore region except along the north flank of Georges Bank.
- *Clay base with burrows and depressions* – This habitat is common on the outer continental shelf and slope. Lobsters excavate burrows up to 1.5 m long. There are also large, bowl-like depressions that range in size from 1 to 5 m in diameter and may shelter several lobsters at a time. Minimum densities of 0.001 lobsters/m^2 have been observed in summer (Table 3.13).
- *Mud-clay base with anemones* – This is a common habitat for lobsters on the outer shelf or upper slope. Forests of mud anemones (*Cerianthus borealis*) may reach densities of 3 or 4 per square meter. Depressions serve as shelter for relatively small lobsters at minimum densities of 0.001/m^2 (Table 3.13).
- *Mud base with burrows* – This habitat occurs offshore mainly in the deep basins, in depths up to 250 m. This environment is extremely common offshore. Lobsters occupy this habitat, but no density estimates are available.

Submarine Canyons

There are more than 15 submarine canyons that cut into the shelf edge on the south side of Georges Bank. These canyons were first surveyed in the 1930s, but they were not fully explored until manned submersibles were used extensively in the 1980s. Detailed information on canyon habitats for American lobster are available primarily for Oceanographer Canyon but is generally applicable to other major canyons on Georges Bank. These canyons present a diverse group of habitat types. Concentrations of adolescents and adult lobsters are substantially greater in submarine canyons than in nearby areas that are

occupied mostly by adults (Cooper et al. 1987). The following information on lobster habitats is extracted from Cooper and Uzmann (1980) and Cooper et al. (1987).

- *Canyon rim and walls* – Sediments consist of sand or semi-consolidated silt with less than 5% overlay of gravel. The bottom is relatively featureless. Burrowing mud anemones are common. Lobster densities are low (Table 3.13).
- *Canyon walls* – Sediments consist of gravely sand, sand, or semi-consolidated silt with more than 5% gravel. The bottom is relatively featureless. Burrowing mud anemones are common, as are Jonah crabs, ocean pout, starfish, rosefish, and squirrel hake. Lobster densities are a little greater than in substrates that contain less gravel (see above).
- *Rim and head of canyons at base of walls* – Sand or semi-consolidated silt substrate is overlain by siltstone outcrops and talus up to boulder size. The bottom is very rough and is eroded by animals and current scouring. Lobsters are associated with rock anemones, Jonah crabs, ocean pout, tilefish, starfish, conger eels, and white hake. Densities are highly variable but reach up to 0.13 lobsters/m^2 (Table 3.13).
- *Pueblo villages* – This habitat type exists in the clay canyon walls and extends from the heads of canyons to middle canyon walls. It is heavily burrowed and excavated. Slopes range from 5 to 70 degrees, but are generally >20 and <50 degrees. Juvenile and adult lobsters and associated fauna create borings up to 1.5 m in width, 1 m in height, and 2 m or more in depth. Lobsters are associated with Jonah crabs, tilefish, hermit crabs, ocean pout, starfish, and conger eels. This habitat may well contain the greatest densities of lobsters found offshore.

Table 3.13 - American Lobster Habitats and Densities

Habitat	Lobster Densities (nos/square meter)	Lobster Sizes (carapace length = CL)	Source
ESTUARIES			
Mud base with burrows	Up to 20	Small juveniles	Cooper & Uzmann 1980
	< 0.01	Adults	Cooper & Uzmann 1980
Rock, cobble & gravel	> 0.5	Juveniles	Steneck & Wilson 1998
	> 0.75	Adolescents	Steneck & Wilson 1998
Rock/shell			
PEAT	Up to 5.7		Barshaw & Lavalli 1988
KELP BEDS	1.2-1.68	Adolescents (51-61 mm)	Bologna & Steneck 1993
EEL GRASS	< 0.04	Juveniles and adolescents	Barshaw & Lavalli 1988
	0.1	80% adolescents	Short et al. 2001
INTERTIDAL ZONE	0-8.6	Juveniles and adolescents	D. Cowan 1999
INSHORE ROCK TYPES			
Sand base with rock	3.2	Avg 40 mm	Cooper & Uzmann 1980
Boulders overlaying sand	0.09-0.13		Cooper & Uzmann 1980
Cobbles	Up to 16		Cooper & Uzmann 1980
Bedrock base with rock and boulder overlay	0.1-0.3		Cooper & Uzmann 1980
Mud-shell/rock substrate	0.15		Cooper & Uzmann 1980
OFFSHORE			
Sand base with rock	Not available	Not available	
Clay base with burrows and depressions	Minimum 0.001		Cooper & Uzmann 1980
Mud-clay base with anemones	Minimum 0.001	50-80 mm in depressions	Cooper & Uzmann 1980
SUBMARINE CANYONS			
Canyon rim and walls	0-0.0002	Adolescents and adults	Cooper et al. 1987
Canyon walls	Up to 0.001	Adolescents and adults	Cooper et al. 1987
Rim and head of canyons and at base of walls	0.0005-0.126	Adolescents and adults	Cooper et al. 1987
Pueblo villages	0.0005-0.126	Adolescents and adults	Cooper et al. 1987

Note: For this table, Juvenile lobsters are < 40 mm CL; adolescents 40-70 mm CL; adults >70 mm CL.

3.5 PROTECTED RESOURCES

There are numerous species which inhabit the environment within the management unit of American lobster that are afforded protection under the Endangered Species Act of 1973 (ESA; i.e., for those designated as threatened or endangered) and/or the Marine Mammal Protection Act of 1972 (MMPA). Fifteen are classified as endangered or threatened under the ESA, while the remaining species are protected by the provisions of the MMPA.

The Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531–1534) establishes protection and conservation of threatened and endangered species and the ecosystems upon which they depend. The ESA is administered by the USFWS and NMFS. Under the ESA, an "endangered species" is defined as any species in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future. Section 7 of the ESA requires that all Federal agencies consult with the USFWS or NMFS, as applicable, before initiating any action that could affect a listed species.

Under the ESA, the NMFS has the responsibility to determine whether the proposed management measures would adversely affect federally listed threatened or endangered species and their critical habitat. If, upon review of existing data, it is determined that these species or habitats may be affected by the proposed measures, a Biological Assessment (BA) must be prepared to identify the nature and extent of adverse impacts, and recommend measures that would avoid the habitat or species or reduce potential impacts to acceptable levels.

The BA would be used in the consultation process as a basis for determining whether the adverse effects are likely to jeopardize any listed species or adversely affect their critical habitats. After consultation, the NMFS would issue a BO expressing their opinion about the potential for impacts to occur. If their opinion is that the proposed measures would not likely jeopardize any listed species or their designated critical habitat, they may also issue an incidental take statement as an exception to the prohibitions in the ESA. If it is determined that no federally listed (or proposed) species or their designated critical habitat would be affected, no further action is necessary.

Under the authority of the MMPA of 1972 (16 U.S.C. 1361 et seq.), the Secretary of Commerce is responsible for the protection of all marine mammals except walruses, polar bears, sea otters, manatees, and dugongs, which are the responsibility of the Secretary of the Interior. These responsibilities have been delegated to NMFS and the USFWS, respectively, and include providing overview and advice to regulatory agencies on all Federal actions that might affect these species.

The MMPA prohibits the "take" of marine mammals, with certain exceptions, in waters under U.S. jurisdiction and by U.S. citizens on the high seas. Under Section 3 of the MMPA, "take" is defined as "harass, hunt, capture, kill, or attempt to harass, hunt, capture or kill any marine mammal." "Harassment" is defined as any act of pursuit, torment, or annoyance that has the potential to injure marine mammal stock in the wild; or has the potential to disturb marine mammal stock in the wild by disrupting behavioral patterns, including migration, breathing, nursing, breeding, feeding, or sheltering. In cases where U.S. citizens are engaged in activities, other than fishing, that result in "unavoidable" incidental take of marine mammals, the Secretary of Commerce can issue a "small take authorization." The authorization can be issued after notice and opportunity for public comment if the Secretary of Commerce finds minor impacts. The MMPA requires consultations with NMFS if impacts on marine mammals are unavoidable. The following list of species, protected either by the ESA, the MMPA, or the Migratory Bird Act of 1918, may be found in the environment used by American lobster (Pinniped and cetacean

species considered present in the action area based on NOAA Marine Mammal Health and Stranding Response Program Database):

Cetaceans

Species	Status
North Atlantic right whale (*Eubalaena glacialis*)	Endangered
Humpback whale (*Megaptera novaeangliae*)	Endangered
Fin whale (*Balaenoptera physalus*)	Endangered
Sei whale (*Balaenoptera borealis*)	Endangered
Blue whale (*Balaenoptera musculus*)	Endangered
Sperm whale (*Physeter macrocephalus*	Endangered
Minke whale (*Balaenoptera acutorostrata*)	Protected
Northern bottlenose whale (*Hyperoodon ampullatus*)	Protected
Beaked whale (*Ziphius and Mesoplodon spp*.)	Protected
Pygmy or dwarf sperm whale (*Kogia spp*.)	Protected
False killer whale (*Pseudorca crassidens*)	Protected
Melonheaded whale (*Peponocephala electra*)	Protected
Rough-toothed dolphin (*Steno bredanensis*)	Protected
Risso's dolphin (*Grampus griseus*)	Protected
Pilot whale (*Globicephala spp*.)	Protected
Atlantic white-sided dolphin (*Lagenorhynchus acutus*)	Protected
Common dolphin (*Delphinus delphis*)	Protected
Spotted and striped dolphins (*Stenella spp*.)	Protected
Bottlenose dolphin (*Tursiops truncatus*)	Protected
White-beaked dolphin (*Lagenorhynchus albirostris*)	Protected
Harbor porpoise (*Phocoena phocoena*)	Protected

Pinnipeds

Harbor seal (*Phoca vitulina*)	Protected
Gray seal (*Halichoerus grypus*)	Protected
Hooded seal (*Cystophora cristata*)	Protected
Harp seal (*Phoca groenlandicus*)	Protected
Ringed seal (*Phoca hispida*)	Protected
Bearded seal (*Erignathus barbatus*)	Protected

Sea Turtles

Species	Status
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered
Green sea turtle (*Chelonia mydas*)	Endangered
Hawksbill sea turtle (*Eretmochelys imbricata*)	Endangered
Loggerhead sea turtle (*Caretta caretta*)	Threatened

Fish

Species	Status
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered
Atlantic salmon (*Salmo salar*)	Endangered

Birds

Species	Status
Roseate tern (*Sterna dougallii dougallii*)	Endangered
Piping plover (*Charadrius melodus*)	Endangered

Critical Habitat Designations

Species	Area
Atlantic Salmon	GOM

Many of the protected species that occur in the New England and Mid-Atlantic waters have never been observed as bycatch in the lobster trap/pot fishery, nor have they been documented as killed by lobster trap/pot gear in the stranding records. Based on this information, detailed species accounts are given below for endangered, threatened or protected species that are likely to be incidentally taken in the lobster trap/pot fishery. The remaining non ESA-listed species that are not likely to be affected will not be discussed further in this statement.

3.5.1 Species Potentially Affected

North Atlantic Right Whale

The North Atlantic right whale (*Eubalaena glacialis*) is listed as endangered under the ESA and is among the most endangered large whale species in the world. Two populations, an eastern and a western, are typically recognized (IWC, 1986). However, animals are sighted so infrequently in the eastern Atlantic, it is unclear whether a viable population still exists (NMFS, 1991a). This analysis focuses on the western North Atlantic population of right whales, which occurs in the proposed action area.

North Atlantic right whales are one of the most intensely studied cetacean species. Yet, despite decades of conservation measures, the population remains at low numbers. Fewer than 200 females are estimated in the population (Best et al. 2001). As of 2009, there were only an estimated 97 breeding females (Schick et al. 2009). Modeling work using data collected through the mid-1990s indicated that if the conditions that existed at that time were to continue, western North Atlantic right whales would be extinct within 200 years (Caswell et al. 1999). Subsequent work using data collected throughout the 2000s indicate that the population of the western North Atlantic right whale is increasing (Waring et al. 2009).

NMFS believes that the western population of North Atlantic right whales is still undergoing unacceptable levels of mortality (Best et al. 2001). As such, potential biological removal (PBR) has been set to zero, (i.e., any mortality or serious injury to the species is considered significant).

North Atlantic right whales have a wide distribution that overlaps with U.S. and Canadian commercial fishing grounds in the western Atlantic as well as shipping traffic to and from numerous ports. Coastal areas frequented by right whales are heavily developed. North Atlantic right whales generally occur west of the Gulf Stream, from the southeast U.S. to Canada (e.g., Bay of Fundy and Scotian Shelf) (Kenney 2002; Waring et al. 2009). They are not found in the Caribbean and have been recorded only rarely in the Gulf of Mexico. North Atlantic right whales are abundant in Cape Cod Bay between February and April (Hamilton and Mayo 1990; Schevill et al. 1986; Watkins and Schevill 1982) and in the Great South Channel in May and June (Kenney et al. 1986; Payne et al. 1990). North Atlantic right whales also frequent Stellwagen Bank and Jeffrey's Ledge, as well as Canadian waters including the Bay of Fundy

and Browns and Baccaro Banks, in the spring through fall. The distribution of right whales in summer and fall seems linked to the distribution of their principal zooplankton prey (Winn et al. 1986). Calving occurs in the winter months in coastal waters off of Georgia and Florida (Kraus et al. 1988). Mid-Atlantic waters are used as a migratory pathway from the spring and summer feeding/nursery areas to the winter calving grounds off the coast of Georgia and Florida.

In terms of abundance, an exact count of right whales in the western North Atlantic cannot be obtained. IWC participants from a 1999 workshop agreed to a minimum direct-count estimate of 263 right whales alive in 1996 and noted that the true population was unlikely to be greater than this estimate (Best et al. 2001). Based on a census of individual whales using photo-identification techniques and an assumption of mortality for those whales not seen in seven years, a total 299 right whales was estimated in 1998 (Kraus et al. 2001). A review of the photo-ID recapture database on October 10, 2008, indicated that 345 individually recognized whales were known to be alive during 2005 (Waring et al. 2009). Because this 2008 review was a nearly complete census, it is assumed this estimate represents a minimum population size.

PBR is the product of minimum population size, one-half the maximum productivity rate, and a "recovery" factor (MMPA Sec. 3. 16 U.S.C. 1362) (Wade and Angliss 1997). NMFS believes that this population of North Atlantic right whales is undergoing unacceptable levels of mortality (Best et al. 2001). As such, potential biological removal (PBR) has been set to zero, i.e., any mortality or serious injury to the species is considered significant.

Ship strikes and fishing gear entanglements are the principal factors believed to be retarding growth and recovery of western North Atlantic right whales population. Data collected from 1970 through 1999 indicate that anthropogenic interactions in the form of ship strikes and gear entanglements are responsible for a minimum of two-thirds of the confirmed and possible mortality of non-neonate right whales. Johnson et al. (2005) noted that any part of the gear (buoy line, groundline, floatline, and surface system line) creates a risk for entanglement. Several aspects of right whale behavior may contribute to this high entanglement frequency.

Of 31 recorded right whale entanglement events examined between 1993 and 2002, 24 (77.4 percent) involved animals with gear in the mouth (some included other points of gear attachment on the body as well) and 16 (51.6 percent) were entangled only at the mouth (Johnson et al. 2005). This suggests that a large number of entanglements occur while right whales feed, since open mouth behavior is generally associated with feeding only. Although the sample size was small for cases in which the point of gear attachment and the associated gear part could be examined, Johnson et al. (2005) reported that two out of three right whale floating groundline entanglements and six out of eight vertical line entanglements (buoy line and surface system lines) involved the mouth (note that some of these cases may have involved other body parts as well). In addition, three buoy line entanglement events involved the tail; the entanglement of one of these animals additionally involved groundline.

Right whales feed by swimming continuously with their mouths open, filtering large amounts of water through their baleen and capturing zooplankton on the baleen's inner surface. A study of right whale foraging behavior in Cape Cod Bay conducted by Mayo and Marx (1990) revealed that right whales feeding at the surface had their mouths open for approximately 58 minutes of each hour. Also, feeding right whales exhibited increased turning behavior and a convoluted path once they had found a sufficiently dense patch of zooplankton on which to feed. This behavior differed significantly from that of traveling whales, who swam in relatively straight paths with their mouths closed. In addition, socializing whales (two or more whales at the surface occasionally making physical contact) exhibited even more twisted paths than feeding whales. Socializing was often associated with rolling and lifting the flippers

above the water's surface, behaviors that may add to entanglement risk, especially from buoy line and surface system lines.

Goodyear (1996) studied well-known right whale feeding areas (Cape Cod/Massachusetts Bay, Great South Channel, and the Bay of Fundy) and reported that feeding behavior varies based on the location of prey. Right whales spend a substantial amount of time feeding below the surface in the Bay of Fundy, where no surface feeding activities were observed. In order to meet their metabolic needs, right whales must feed on dense aggregations of copepods. Right whales received most of their food energy (approximately 91.1 percent) during deep dives (average depth of 134 meters), with the remainder (approximately 9.9 percent) occurring through surface feeding. Right whales spend about one-third of their time surface feeding in the Cape Cod/Massachusetts Bay and Gulf of Maine areas, which may increase entanglement risk from buoy line and surface system lines during the times they visit these areas (December to May). While in the Great South Channel (April to June), right whales spend approximately 10 percent of the time feeding at the surface and 90 percent of the time feeding at lower depths. Not included in these numbers is one right whale that was entangled in both buoy line and groundline on the tail.

Humpback Whale

The North Atlantic humpback whale (*Megaptera novaeangliae*) is listed as an endangered species under the ESA. A Recovery Plan has been published and is in effect (NMFS 1991b).

In the western North Atlantic, humpback whales calve and mate in the West Indies during the winter and migrate to northern feeding areas during the summer months. Calves are recruited to the feeding grounds of their mothers in a practice referred to as maternal philopatry (Clapham and Mayo 1987; Katona and Beard 1990). In the Gulf of Maine, sightings are most frequent from mid-March through November between 41 degrees north and 43 degrees north, from the Great South Channel north along the outside of Cape Cod to Stellwagen Bank and Jeffrey's Ledge, and peak in May and August (CETAP 1982). Studies have matched 27 percent of the individuals on the Canadian Scotian Shelf to the Gulf of Maine population (Clapham et al. 2003) and one study identified a Gulf of Maine whale as far away as west Greenland (Katona and Beard 1990). Small numbers of individuals may be present in New England waters year-round, including the waters of Stellwagen Bank (Clapham et al. 1993). They feed on a number of species of small schooling fishes, particularly sand lance, mackerel, and Atlantic herring, by targeting fish schools and filtering large amounts of water for their associated prey. Humpback whales have also been observed feeding on krill (Wynne and Schwartz 1999).

Photographic mark-recapture analyses from the Years of the North Atlantic Humpback (YONAH) project gave an ocean-basin-wide population estimate of 11,570 for 1992/1993 (CV = 0.069, Stevick et al. 2001). This estimate is regarded as the best available estimate for the North Atlantic population, though the figure is considered negatively biased because YONAH sampling was not spatially representative in the feeding grounds (Waring et al. 2009). Researchers have used three approaches in their attempt to estimate the abundance for the Gulf of Maine stock: mark-recapture estimates, minimum population size, and line-transect estimates (Clapham et al. 2003). The best estimate for the Gulf of Maine stock is 847 whales, derived from a 2006 aerial survey (Waring et al. 2009).

Modeling using data obtained from photographic mark-recapture studies estimates the growth rate of the Gulf of Maine feeding population at 6.5 percent (Barlow and Clapham 1997). More recent studies have found lower growth rates of 0.0 percent to 4.0 percent, although these results may be a product of shifts in humpback distribution (Clapham et al. 2003). With respect to the North Atlantic population overall, there

are indications of increasing abundance. One study estimated a growth rate of 3.1 percent for the period from 1979 to 1993 (Stevick et al. 2001).

As noted, PBR is the product of minimum population size, one-half the maximum productivity rate, and a "recovery" factor (MMPA Sec. 3. 16 U.S.C. 1362) (Wade and Angliss 1997). The minimum population size is 549. The maximum productivity rate is 0.04, the default value for cetaceans. The "recovery" factor, which accounts for endangered, depleted, or threatened stocks, or stocks of unknown status relative to optimum sustainable population (OSP), is assumed to be 0.10 because the humpback whale is listed as endangered under the Endangered Species Act (ESA). Thus, PBR for the Gulf of Maine humpback whale stock is 1.1 whales per year (Waring et al. 2009).

As is the case with other large whales, the major known sources of anthropogenic mortality and injury of humpback whales are commercial fishing gear entanglements and ship strikes. Sixty percent of Mid-Atlantic humpback whale mortalities that were closely investigated showed signs of entanglement or vessel collision (Wiley et al. 1995). Between 1992 and 2001, at least 92 humpback whale entanglements and 10 ship strikes were recorded. Many carcasses also washed ashore or were spotted floating at sea for which the cause of death could not be determined. Based on photographs of the caudal peduncle of humpback whales, Robbins and Mattila (1999) estimated that at least 48 percent -- and possibly as many as 78 percent -- of the Gulf of Maine stock of humpback whales exhibit scarring caused by entanglement. These estimates are based on sightings of free-swimming animals that initially survive the encounter. Because some whales may drown immediately, the actual number of interactions may be higher. Decomposed and/or unexamined animals (e.g., carcasses reported but not retrieved or necropsied) represent "lost data", some of which may relate to human impacts (Waring et al. 2009).

Johnson et al. (2005) noted that any part of the gear (buoy line, groundline, floatline, and surface system line) creates a risk for entanglement. Johnson et al. (2005) also reported that of the 30 humpback whale entanglements examined in the study, 16 (53 percent) involved entanglements in the tail region and 13 (43 percent) involved entanglements in the mouth (note that in both cases, some entanglements included other points of gear attachment on the body). Although the sample size was small for cases in which the point of gear attachment and the associated gear part could be examined, two out of two floating groundline entanglements and four out of seven buoy line entanglements involved the mouth.[76] In addition, five out of seven buoy line entanglements and three out of four gillnet floatline entanglements involved the tail (Johnson et al. 2005).[77]

Based on studies of humpback whale caudal peduncle scars, Robbins and Mattila (2000) reported that calves had a lower entanglement risk than yearlings, juveniles, and mature whales; the latter three maturational classes exhibited comparable levels of high probability scarring. Based on these data, as well as evidence that animals acquire new injuries when mature, the authors concluded that actively feeding whales may be at greater risk of entanglement. In any case, juveniles seemed to be at the most risk, possibly due to their relative inexperience.

Humpback whales employ a variety of foraging techniques, which differ from right whale foraging behavior, but which may create entanglement risk (Hain et al. 1982 and Weinrich et al. 1992). One such technique is lunge feeding, in which the whale swims toward a patch of krill or small fish, then lunges into the patch with its mouth agape. The flippers may aid in concentrating the prey or in maneuvering. Another feeding method, called "flick-feeding," involves flexing the tail forward when the whale is just

[76]Note that one humpback whale was entangled in both buoy line and groundline and was placed in both categories.

[77] Note that the entanglements in buoy line exceed the total of seven because some animals were entangled in multiple locations on their body (e.g., both the mouth and the tail).

below the surface, which propels water over the whale's head, temporarily disorienting its prey. The whale then swims with its mouth open, through the wave it created. A third foraging strategy is bubble feeding, in which whales swim upwards, while blowing nets or clouds of bubbles, in a spiral under a concentration of prey. This creates a barrier through which the disoriented fish cannot escape. The whales then swim up through the bubble formation, engulfing their prey. These techniques demonstrate that humpback whales commonly use their mouths, flippers, and tails to aid in feeding. Thus, while foraging, all body parts are at risk of entanglement.

Fin Whale

In 1976, the IWC's Scientific Committee proposed seven stocks for North Atlantic fin whales (*Balaenoptera physalus*): (1) North Norway, (2) West Norway-Faroe Islands, (3) British Isles-Spain and Portugal, (4) East Greenland-Iceland, (5) West Greenland, (6) Newfoundland- Labrador, and (7) Nova Scotia (Perry et al., 1999). However, it is uncertain whether these boundaries define biologically isolated units (Waring et al. 2009).

The present IWC scheme defines the North Atlantic fin whale stock off the eastern coast of the U.S., north to Nova Scotia, and east to the southeastern coast of Newfoundland as a single stock (Donovan 1991). However, information suggests some degree of separation within this population. A number of researchers have suggested the existence of fin whale subpopulations in the North Atlantic based on local depletions resulting from commercial whaling or genetics data (Mizroch and York 1984; Bérubé et al. 1998). Photo identification studies in western North Atlantic feeding areas, particularly in Massachusetts Bay, have shown a high rate of annual return by fin whales, both within years and between years, suggesting some level of site fidelity (Seipt et al. 1990).

This particular stock is considered strategic because the fin whale is listed as endangered under the ESA. A Recovery Plan for fin whales is currently awaiting legal process (Waring et al. 2009).

Fin whales inhabit a wide range of latitudes between 20 to 75 degrees north and 20 to 75 degrees south (Perry et al. 1999). Like right and humpback whales, fin whales are believed to use high latitude waters primarily for feeding, and low latitude waters for calving. However, evidence regarding where the majority of fin whales winter, calve, and mate is still scarce. Clark (1995) reported a general pattern of fin whale movements in the fall from the Labrador/Newfoundland region, south past Bermuda and into the West Indies, but neonate strandings along the U.S. Mid-Atlantic coast from October through January suggest the possibility of an offshore calving area (Clark 1995; Hain et al. 1992).

The predominant prey of fin whales varies greatly in different areas depending on what is locally available (IWC 1992). In the western North Atlantic, fin whales feed on a variety of small schooling fish (e.g., herring, capelin, and sand lance) as well as squid and planktonic crustaceans (Wynne and Schwartz 1999).

Various estimates have been provided to describe the current status of fin whales in western North Atlantic waters. One method used the catch history and trends in catch per unit effort to obtain an estimate of 3,590 to 6,300 fin whales for the entire western North Atlantic (Perry et al. 1999). Hain et al. estimated that about 5,000 fin whales inhabit the waters of the Northeastern U.S. continental shelf (Hain et al. 1992). The 2009 Stock Assessment Report (SAR) gives a best estimate of abundance for fin whales in the western North Atlantic of 2,269 (CV = 0.37). However, this estimate must be considered extremely conservative in view of the incomplete coverage of the known habitat of the stock and the uncertainties regarding population structure and whale movements between surveyed and unsurveyed areas (Waring et

al. 2009). The minimum population estimate for the western North Atlantic fin whale is 1,678 (Waring et al. 2009).

Information on the abundance and population structure of fin whales worldwide is limited. NMFS recognizes three fin whale stocks in the Pacific for the purposes of managing this species under the MMPA: Alaska (Northeast Pacific), California/Washington/Oregon, and Hawaii. Reliable estimates of current abundance for the entire Northeast Pacific fin whale stock are not available. Stock structure for fin whales in the southern hemisphere is unknown and there are no current estimates of abundance for southern hemisphere fin whales.

As noted, PBR is the product of minimum population size, one-half the maximum productivity rate, and a "recovery" factor (MMPA Sec. 3. 16 U.S.C. 1362). The minimum population size is 1,678. The maximum productivity rate is 0.04, the default value for cetaceans. The "recovery" factor is assumed to be 0.10 because the fin whale is listed as endangered under the ESA. Thus, PBR for the western North Atlantic fin whale is 3.4.

Like right whales and humpback whales, anthropogenic mortality of fin whales includes entanglement in commercial fishing gear and ship strikes. Of 18 fin whale mortality records collected between 1991 and 1995, four were associated with vessel interactions, although the primary cause of mortality was not known. From 1996 to July 2001, there were nine observed fin whale entanglements and at least four ship strikes. Experts believe that fin whales are struck by large vessels more frequently than any other cetacean (Laist et al. 2001).

Fin whales exhibit lunge feeding techniques near the ocean surface, similar to humpback whales. Fin whales typically approach a prey patch horizontally, sometimes rapidly turning or rolling on their side inside a prey patch (Watkins and Schevill 1979). Fin whales have also been observed feeding below the surface and fairly close to the bottom in about 15 to 20 meters of water. Entanglement data from 1997 through 2003 indicate few records of fin whale entanglement events (Kenney and Hartley, 2001; Hartley et al. 2003; Whittigham et al. 2005a; Whittingham et al. 2005b). Based on this information, fin whales seem to encounter gear less often than right and humpback whales. This statement is also supported by fin whale catalogs curated by College of the Atlantic and the Center for Coastal Studies, both of which contain records identifying fin whales that lack entanglement-related scarring.

Sei Whale

The range of sei whales (*Balaenoptera borealis*) extends from subpolar to subtropical and even tropical marine waters; however, the species is most commonly found in temperate waters (Perry et al. 1999). Based on past whaling operations, the IWC recognized three stocks in the North Atlantic: (1) Nova Scotia; (2) Iceland-Denmark Strait; and (3) Northeast Atlantic (Donovan 1991; Perry et al. 1999). Mitchell and Chapman (1977) suggested that the sei whale population in the western North Atlantic consists of two stocks, a Nova Scotian Shelf stock and a Labrador Sea stock. The Nova Scotian Shelf stock includes the continental shelf waters of the Northeast Region, and extends northeastward to south of Newfoundland. The IWC boundaries for this stock are from the U.S. east coast to Cape Breton, Nova Scotia and east to 42°00'W longitude (Waring et al. 2009). This is the only sei whale stock within ALWTRP boundaries.

Sei whales became the target of modern commercial whalers in the late 19th and early 20th century after stocks of other whales, including right, humpback, fin, and blues, had already been depleted. Sei whales were taken in large numbers by Norway and Scotland from the beginning of modern whaling (NMFS, 1998b). Small numbers were also taken off of Spain, Portugal, and West Greenland from the 1920s to

1950s (Perry et al. 1999). In the western North Atlantic, a total of 825 sei whales were taken on the Scotian Shelf between 1966 and 1972, and an additional 16 were taken by a shore-based Newfoundland whaling station (Perry et al. 1999). The species continued to be exploited in Iceland until 1986 even though measures to stop whaling of sei whales in other areas had been put into place in the 1970s (Perry et al. 1999). There is no estimate for the abundance of sei whales prior to commercial whaling. Based on whaling records, approximately 14,295 sei whales were taken in the entire North Atlantic from 1885 to 1984 (Perry et al. 1999).

Sei whales winter in warm temperate or subtropical waters and summer in more northern latitudes. In the North Atlantic, most births occur in November and December, when the whales are on their wintering grounds. Conception is believed to occur in December and January. Gestation lasts for 12 months, and calves are weaned at between six and nine months, when the whales are on the summer feeding grounds (NMFS 1998b). Sei whales reach sexual maturity between five and 15 years of age. The calving interval is believed to be two to three years (Perry et al. 1999).

Sei whales occur in deep water throughout their range, typically over the continental slope or in basins situated between banks (NMFS 1998b). In the northwest Atlantic, the whales travel along the eastern Canadian coast in autumn on their way to the Gulf of Maine and Georges Bank, where they occur in winter and spring. Within the Northeast Region, the sei whale is most common on Georges Bank, including the Great South Channel, and into the Gulf of Maine/Bay of Fundy region during spring and summer. Individuals may range as far south as North Carolina. It is important to note that sei whales are known for inhabiting an area for weeks at a time, then disappearing for years or even decades. This has been observed in many areas, including in the southwestern Gulf of Maine in 1986, but the basis for this phenomenon is not clear.

Although sei whales may prey upon small schooling fish and squid in the Northeast Region, available information suggests that calanoid copepods are the primary prey of this species. There are occasional influxes of sei whales farther into Gulf of Maine waters, presumably in conjunction with years of high copepod abundance inshore. Sei whales are occasionally seen feeding in association with right whales in the southern Gulf of Maine and in the Bay of Fundy, although there is no evidence of interspecific competition for food resources. There is very little information on natural mortality factors for sei whales. Possible causes of natural mortality, particularly for young, old, or otherwise compromised individuals, are shark attacks, killer whale attacks, and endoparasitic helminthes (Perry et al. 1999).

There are insufficient data to determine trends of the sei whale population. The abundance estimate of 386 is considered the best available for the Nova Scotia stock of sei whales. However, this estimate must be considered extremely conservative in view of the known range of the sei whale in the entire western North Atlantic, and the uncertainties regarding population structure and whale movements between surveyed and unsurveyed areas. The abundance estimates of sei whales include a percentage of the estimate of animals identified as fin/sei whales (the two species being sometimes hard to distinguish). The percentage used is the ratio of positively identified sei whales to the total of positively identified fin whales and positively identified sei whales. For the period 2003-2007, the minimum annual rate of human-caused mortality and serious injury to sei whales was 0.8 (Waring et al. 2009). This value includes incidental fishery interaction records (0.2) and records of vessel collisions (0.6) (Glass et al. 2009). Entanglement is not known to greatly affect this species in the U.S. Atlantic, possibly because sei whales typically inhabit waters farther offshore than most commercial fishing operations, or perhaps because any entanglements that do occur in offshore areas are less likely to be observed.

Minke Whale

The minke whale (*Balaenoptera acutorostrata*) is not listed as endangered or threatened under the ESA, although the species is protected under the MMPA. The total fishery-related mortality and serious injury for this stock does not exceed PBR (see below). Therefore, this is not considered a strategic stock.

Minke whales off the eastern coast of the United States are considered to be part of the Canadian east coast population, which inhabits the area from the eastern half of Davis Strait south to the Gulf of Mexico. Spring and summer are times of relatively widespread and common occurrence, and during this time minke whales are most abundant in New England waters. During fall, there are fewer minke whales in New England waters, while during winter, the species seems to be largely absent (Waring et al. 2009). Records hint at a possible winter distribution in the West Indies and in mid-ocean south and east of Bermuda (Mitchell 1991). As with several other cetacean species, the possibility of a deep-ocean component to distribution exists but remains unconfirmed.

Minke whales reach sexual maturity between five and seven years of age (NAMMCO 1998). Most mature females become pregnant every year. Mating occurs in the late winter; after a gestation period of 10 months, calves are born in the lower latitudes of the range (Martin et al. 1990).

The best estimate of the population of Canadian east coast minke whales is 3,312. This figure is based on a 2006 aerial abundance survey which covered 10,676 km of trackline in the region from 2000 m depth contour on the southern edge of Georges Bank to the upper Bay of Fundy and to the entrance of the Gulf of St. Lawrence (Waring et al. 2009). The minimum population estimate is 1,899 animals. The PBR for this stock of minke whales is 19 (Waring et al. 2009). Data are insufficient for determining a population trend for this species.

Human-caused mortality in minke whales is relatively low in comparison to PBR for the species (19). However, fishing-related entanglements do occur. The existing data can be summarized as follows:

U.S. Lobster Trap/Pot Fishery: Annual mortalities attributed to the Gulf of Maine and Mid-Atlantic lobster trap/pot fishery, as determined from strandings and entanglement records that have been audited, were one in 1991, two in 1992, one in 1994, one in 1995, one in 1997, one in 2002, and zero from 2003 to 2007. Estimated average annual mortality related to this fishery from 2003 to 2007 was 0.0 minke whales per year (Waring et al. 2009).

Northeast Bottom Trawl: One freshly dead minke whale was caught in 2004. With only one observed take, it is not possible to generate an accurate bycatch estimate. Therefore, this catch is reported as 1, with a resulting 5-year mean (2003-2007) annual mortality of 0.2 (Waring et al. 2009).

Other Fisheries: Based on data from 1997 to 2007, mortalities that were likely a result of interaction with an unknown fishery include three in 1997, three in 1999, one in 2000, two in 2001, one in 2002, five in 2003, two in 2004, and one in 2007 (Waring et al. 2009). Of the five mortalities in 1999, two were attributed to an unknown trawl fishery and three to another fishery. One of the interactions with an unknown fishery in 2000 was a mortality and one was a serious injury. In 2001, the two confirmed fishery interactions were both from an unknown fishery. In 2002, there was one mortality in an unknown fishery. In 2003, 5 of 5 confirmed mortalities were due to interactions with an unknown fishery. In 2004, of the four confirmed mortalities, two were due to an interaction with an unknown fishery. In 2005 and 2006 there were no mortalities attributed to fishery interactions. In 2007 there was one mortality and one serious injury, both attributed to unknown fisheries (Waring et al. 2009). During 2003 to 2007, as

determined from stranding and entanglement records, the estimated average annual mortality is 1.8 minke whales per year in unknown fisheries (Waring et al. 2009).

From 1999 to 2003, no minke whales were confirmed to be involved in ship strike incidents. During 2004 and 2005, one minke whale mortality was attributed to ship strike in each year. During 2006 and 2007, no minke whales were confirmed struck by a ship. Thus, during 2003 to 2007, as determined from stranding and entanglement records, the estimated annual average was 0.4 minke whales per year struck by ships (Waring et al. 2009).

Based on Waring et al. (2009), fishing gear entanglements account for the majority of the human-caused mortalities of minke whales. Like the other large whale species discussed, feeding behavior may be an important factor that contributes to entanglement risk. Minke whales in the Northwest Atlantic typically feed on small schooling fish, such as sand lance, herring, cod, and mackerel (Ward 1995). The whales may follow the movements of their prey and subsequently swim closer to shore and to heavy concentrations of fishing gear, making them more susceptible to entanglements. Studies conducted in the Bay of Fundy and Gulf of St. Lawrence indicated that minke whales feed by displaying surface lunges and rolling (Sears et al. 1981; Haycock and Mercer 1984). In contrast, a study conducted on minke whales in Cape Cod Bay and Massachusetts Bay showed a lack of surface feeding behavior (Murphy 1995). It is likely, however, that large whales may encounter gear in any part of the water column.

The majority of documented minke whale entanglements reported by Waring et al. (2009) resulted in the death of the animal. Waring et al. (2009) report the mouth and tail stock/fluke regions to be a common entanglement location for those minke whales that were seriously injured or killed.

Harbor Seal

The harbor seal (*Phoca vitulina*) is not listed as endangered or threatened under the ESA, although the species is protected under the MMPA. The total fishery-related mortality and serious injury for this stock does not exceed PBR (see below). Therefore, this is not considered a strategic stock.

The harbor seal is found in all nearshore waters of the Atlantic Ocean above 30 degrees latitude (Waring et al. 2009). In the western North Atlantic they are distributed from the eastern Canadian Arctic and Greenland south to southern New England and New York, and occasionally the Carolinas (Boulva and McLaren 1979; Gilbert and Guldager 1998). It is believed that the harbor seals found along the U.S. and Canadian east coasts represent one population (Waring et al. 2009). Harbor seals are year-round inhabitants of the coastal waters of eastern Canada and Maine, and occur seasonally along the southern New England and New York coasts from September through late May. However, breeding and pupping normally occur in waters north of the New Hampshire/Maine border, although breeding occurred as far south as Cape Cod in the early part of the twentieth century. Since passage of the MMPA in 1972, the number of seals found along the New England coast has increased nearly five-fold, with the number of pups seen along the Maine coast increasing at an annual rate of 12.9 percent during the 1981 to 1997 period (Gilbert and Guldager 1998). The best estimate for harbor seals is 99,340, and the minimum population estimate is 91,546, based on corrected total counts along the Maine coast in 2001 (Waring et al. 2009). The maximum productivity rate is assumed to be 0.12, the default value for pinnipeds. The recovery factor for this stock is 0.5, the value for stocks of unknown status. PBR for U.S. waters is 2,746 (Waring et al. 2009).

Incidental takes of harbor seals have been recorded in groundfish gillnet, bottom trawl, herring purse seine, halibut tub trawl, and lobster fisheries (Gilbert and Wynne 1985 and 1987; Waring et al. 2009). Mortalities involving the herring purse seine, halibut tub trawl, and lobster fisheries are reportedly rare.

The Northeast multispecies sink gillnet fishery is responsible for the majority of harbor seal fishery takes on the East Coast of the United States. This fishery is located in the Gulf of Maine and in Southern New England. Between 1990 and 2007 there were 551 observed harbor seal mortalities attributable to this fishery, excluding three animals taken in the 1994 pinger experiment. According to Waring et al. (2009), the estimated total mortality of harbor seals by year (CV in parentheses) is 602 in 1990 (0.68), 231 in 1991 (0.22), 373 in 1992 (0.23), 698 in 1993 (0.19), 1,330 in 1994 (0.25), 1,179 in 1995 (0.21), 911 in 1996 (0.27), 598 in 1997 (0.26), 332 in 1998 (0.33), 1,446 in 1999 (0.34), 917 in 2000 (0.43), 1,471 in 2001 (0.38), 787 in 2002 (0.32), 542 in 2003 (0.28), 792 in 2004 (0.34), 719 in 2005 (0.20), 87 in 2006 (0.58), and 92 in 2007. Average annual estimated fisheries-related mortality and serious injury to this stock attributable to this fishery from 2003 to 2007 was 446 harbor seals (CV=0.15), which is well below the PBR for this species (Waring et al. 2009).

The Mid-Atlantic coastal gillnet fishery was responsible for a minimal number of takes on observed trips during 1993-1997 and 1999-2003, with observers recording two mortalities, both in 1998. Additional mortalities include one in 2004, two in 2005, and one in 2006. Zero mortalities were observed in this fishery in 2007 (Waring et al. 2009). Observed effort was concentrated off New Jersey and scattered between Delaware and North Carolina from one to 50 miles off the beach. Based on observer coverage, the Mid-Atlantic coastal gillnet fishery is estimated to have caused zero mortalities from 1995 to 1997 and 1999 to 2003. Observed mortalities include 11 in 1998 (0.77), 15 in 2004 (0.86), 63 in 2005 (0.67), 26 in 2006 (0.98), and zero in 2007. The average annual estimated fishery-related mortality attributable to this fishery from 2003 to 2007 was 21 harbor seals (CV=0.49) (Waring et al. 2009).

Harbor seal mortalities have been observed in the Northeast bottom trawl between 2001 and 2007, one in 2002, one in 2005, and three in 2007. The estimated annual fishery-related mortality and serious injury attributable to this fishery has not been generated.

Additional sources of mortality for harbor seals include boat strikes, entrainment in power plant intakes (12-20 per year), oil contamination, shooting (around salmon aquaculture sites and fixed fishing gear), storms, abandonment by the mother, and disease (Katona et al. 1993).

Loggerhead Sea Turtle

The loggerhead sea turtle (*Caretta caretta*) was listed as threatened under the ESA on July 28, 1978, but is considered endangered by the International World Conservation Union (IUCN). Loggerheads are circumglobal, inhabiting continental shelves, bays, estuaries, and lagoons in temperate, subtropical, and tropical waters. The loggerhead sea turtle is the most abundant species of sea turtle in U.S. waters. They commonly occur in the U.S. throughout the inner continental shelf from Florida through Cape Cod, Massachusetts. Loggerhead sea turtles are found in Virginia foraging areas as early as April, but are not usually found on the most northern foraging grounds in the Gulf of Maine until June. The large majority leave the Gulf of Maine by mid-September, but some may remain in Mid-Atlantic and Northeast waters until late fall. During November and December, loggerheads appear to concentrate in nearshore and southerly areas influenced by warmer Gulf Stream waters off North Carolina. Summer nesting usually occurs in the lower latitudes.

Genetic analyses conducted since the last five-year review indicate there are five demographically independent groups in the Western North Atlantic, corresponding to nesting beaches found in Florida and Mexico. The primary metric used to evaluate trends in global loggerhead populations are counts of beach nests, many of which occur in areas outside U.S. waters. Given that loggerhead nest counts have generally declined during the period 1989-2005, NMFS & USFWS (2007b) concluded that loggerhead turtles should not be delisted or reclassified and should remain designated as threatened under the ESA.

However, the review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if application of the Distinct Population Segment policy under the ESA is warranted for the species. Additionally, the Center for Biological Diversity and the Turtle Island Restoration Network filed a petition to reclassify loggerhead turtles in the North Pacific Ocean as a distinct population segment (DPS) with endangered status and designate critical habitat under the ESA (72 FR 64585; November 16, 2007). While this petition is geared toward the North Pacific, the possibility exists that it could affect status in other areas. NMFS concluded that the petition presented substantial scientific information such that the petition action may be warranted, and published a notice and request for comments, available at: http://www.nmfs.noaa.gov/pr/pdfs/fr/fr72-64585.pdf. At this time, the Northwest Atlantic loggerhead population is only a "potential" distinct population segment and cannot be considered for delisting separately from the listed entity (i.e., the entire species) until it meets both the recovery criteria for each recovery unit and has completed a formal DPS evaluation and designation, which would involve proposed rulemaking, public review and comment and a final rulemaking (NMFS and USFWS 2008).

The Second Revision of the Recovery Plan for the Northwest Atlantic Population of the Loggerhead Sea turtle (*Caretta caretta*) was published in December 2008 (NMFS and USFWS 2008). The Loggerhead Recovery Team conducted a detailed analysis of threats to assist in prioritizing recovery actions. The highest priority threats, adjusted for relative reproductive values for each life stage/ecosystem, include bottom trawl, pelagic longline, demersal longline, and demersal large mesh gillnet fisheries; legal and illegal harvest; vessel strikes; beach armoring; beach erosion; marine debris ingestion; oil pollution; light pollution; and predation by native and exotic species.

Currently, there are no population estimates for loggerhead sea turtles in any of the ocean basins in which they occur. However, a recent loggerhead assessment prepared by NMFS states that the loggerhead adult female population in the western North Atlantic ranges from 20,000 to 40,000 or more, with a large range of uncertainty in total population size (SEFSC 2009).

Anthropogenic factors that impact hatchlings and adult females on land, or the success of nesting and hatching include: beach erosion, beach armoring, and nourishment; artificial lighting; beach cleaning; beach pollution; increased human presence; recreational beach equipment; vehicular and pedestrian traffic; coastal development/construction; exotic dune and beach vegetation; removal of native vegetation; and poaching. An increased human presence at some nesting beaches or close to nesting beaches has led to secondary threats such as the introduction of exotic fire ants, feral hogs, dogs, and an increased presence of native species (*e.g.*, raccoons, armadillos, and opossums) which raid nests and feed on turtle eggs (NMFS and USFWS 2007a, 2008).

Loggerheads are affected by a completely different set of anthropogenic threats in the marine environment. These include oil and gas exploration, coastal development, and transportation; marine pollution; underwater explosions; hopper dredging; offshore artificial lighting; power plant entrainment and/or impingement; entanglement in debris; ingestion of marine debris; marina and dock construction and operation; boat collisions; poaching; and fishery interactions. A 1990 National Research Council (NRC) report concluded that for juveniles, subadults, and breeders in coastal waters, the most important source of human caused mortality in U.S. Atlantic waters was fishery interactions.

Loggerhead turtles are captured and injured or killed in interactions with a variety of fishing gear, including shrimp trawl, gillnet, longline, dredge, pound net, pot/trap, and hook and line fisheries. The average annual bycatch estimate of loggerhead sea turtles from 2000-2004 (based on the rate from 1994-2004) over FMP groups identified by NERO was 411 turtles, with an additional 77 estimated bycatch events unassigned.

There have been three entanglements of loggerheads reported in lobster gear. One was reported in New Jersey in July of 1983, which was reported dead; one was reported as release alive in New York in August of 1987; and one was reported dead, entangled by the right flipper, in a pot line located in New Jersey in July of 1991. In addition, the STSSN database for sea turtles reveals that from 1980-2000 there was one loggerhead (alive) entangled in lobster gear in Massachusetts (SEFSC STSSN database). More recent data (2002-2008), has recorded confirmed reports of eight loggerhead entanglements in vertical line gear. Four of those entanglements were confirmed to be caused by whelk pots, and one confirmed to be from crab fisheries. Gear from three of the loggerhead entanglements was never identified.

Leatherback Sea Turtle

Leatherback sea turtles (*Dermochelys coriacea*) were listed as endangered under the ESA on June 2, 1970. Leatherback turtles are the largest living turtle and are distinct from other sea turtle species because of its rubber-like, flexible carapace. Like the loggerhead, the leatherback is circumglobal. In the northwestern Atlantic, the leatherback turtle's range extends from Cape Sable, Nova Scotia, south to Puerto Rico and the U.S. Virgin Islands. Nesting occurs from February through July at sites located from Georgia to the U.S. Virgin Islands. During the summer, leatherbacks tend to be found along the east coast of the U.S. from the Gulf of Maine south to the middle of Florida.

The leatherback population was estimated at approximately 115,000 adult females globally in 1980 (Pritchard 1982). By 1995, this global population of adult females was estimated to have declined to 34,500 (Spotila et al. 1996). However, the most recent population size estimate for the North Atlantic alone is a range of 34,000-94,000 adult leatherbacks (TEWG 2007). Thus, there is substantial uncertainty with respect to global population estimates of leatherback sea turtles.

Seven leatherback populations or groups of populations were identified by the Leatherback TEWG as occurring within the Atlantic. These are: Florida, North Caribbean, Western Caribbean, Southern Caribbean, West Africa, South Africa, and Brazil (TEWG 2007). In the U.S., the Florida Statewide Nesting Beach Survey program has documented an increase in leatherback nesting numbers from 98 nests in 1988 to between 800 and 900 nests in the early 2000s (NMFS and USFWS 2007b). An analysis of Florida's index nesting beach sites from 1989-2006 shows a substantial increase in leatherback nesting in Florida during this time, with an annual growth rate of approximately 1.17 (TEWG 2007). The TEWG reports an increasing or stable trend for all of the seven populations or groups of populations with the exception of the Western Caribbean and West Africa.

Poaching is not known to be a problem for U.S. nesting populations. However, numerous fisheries that occur in both U.S. state and Federal waters are known to negatively impact juvenile and adult leatherback sea turtles. Leatherbacks have been documented interacting with longline, trap/pot, trawl, and gillnet fishing gear. Of the Atlantic sea turtle species, leatherbacks seem to be the most vulnerable to entanglement in fishing gear, trap/pot gear in particular. This susceptibility may be the result of their body type (large size, long pectoral flippers, and lack of a hard shell), and their attraction to gelatinous organisms and algae that collect on buoys and buoy lines at or near the surface, and perhaps to the lightsticks used to attract target species in longline fisheries. Leatherbacks entangled in fishing gear generally have a reduced ability to feed, dive, surface to breathe, or perform any other behavior essential to survival (Balazs 1985). In addition to drowning from forced submergence, they may be more susceptible to boat strikes if forced to remain at the surface, and entangling lines can constrict blood flow resulting in tissue necrosis.

The American lobster fishery has been verified as the gear/fishery involved in 29 leatherback entanglements in the Northeast Region between 2002-2008 (STDN 2009). All of the 29 entanglements

involved vertical lines of the gear. Other major threats facing the leatherback sea turtle in the Atlantic Ocean include marine pollution (including ingesting marine debris), development and erosion of nesting beach sites, and vessel strikes.

3.5.2 Species Not Likely to Be Affected

Several ESA-listed species, while their distribution overlaps to some degree with the management unit of the lobster trap/pot fishery, are not likely to be affected by the fishery since the fishery does not typically operate in areas where these species occur or the gear used is not known to affect the species. These species include shortnose sturgeon, the Gulf of Maine Distinct Population of Atlantic Salmon, hawksbill sea turtles, green sea turtles, Kemp ridley's sea turtles, blue whales, and sperm whales.

Shortnose Sturgeon

Shortnose sturgeon are benthic fish that mainly occupy the deep channel sections of large rivers. They can be found in rivers along the western Atlantic coast from St. Johns River, Florida (possibly extirpated from this system), to the Saint John River in New Brunswick, Canada. The species is anadromous in the southern portion of its range (*i.e.*, south of Chesapeake Bay), while some northern populations are amphidromous (NMFS 1998c). Since the lobster trap/pot fishery does not operate in or near the rivers where concentrations of shortnose sturgeon are most likely found, it is highly unlikely that the lobster trap/pot fishery will affect shortnose sturgeon.

Atlantic Salmon

The wild populations of Atlantic salmon whose freshwater range occurs in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River are listed as endangered under the ESA. Juvenile salmon in New England rivers typically migrate to sea in May after a two to three year period of development in freshwater streams, and remain at sea for two winters before returning to their U.S. natal rivers to spawn. Results from a 2001-2003 post-smolt trawl survey in Penobscot Bay and the nearshore waters of the Gulf of Maine indicate that Atlantic salmon post-smolts are prevalent in the upper water column throughout this area in mid to late May. Therefore, commercial fisheries deploying small mesh active gear (pelagic trawls and purse seines within 10-m of the surface) in nearshore waters of the Gulf of Maine may have the potential to incidentally take smolts. However, it is highly unlikely that the lobster trap/pot fishery will affect the Gulf of Maine DPS of Atlantic salmon given that operation of the lobster trap/pot fishery does not occur in or near the rivers where concentrations of Atlantic salmon are likely to be found and lobster trap/pot gear operates in the ocean at or near the bottom rather than near the surface.

Blue Whale

Blue whales do not regularly occur in waters of the U.S. Exclusive Economic Zone (EEZ) (Waring et al. 2002). In the North Atlantic, blue whales are most frequently sighted in the St. Lawrence from April to January (Sears 2002). No blue whales were observed during the Cetacean and Turtle Assessment Program (CETAP) surveys of the mid- and north Atlantic areas of the outer continental shelf (CETAP 1982). Calving for the species occurs in low latitude waters outside of the area where the lobster trap/pot fishery operates. Blue whales feed on euphausiids (krill) (Sears 2002) which are too small to be captured in lobster fishing gear. Given that the species is unlikely to occur in areas where the lobster fishery operates, and given that the operation of the lobster fishery will not affect the availability of blue whale

prey or areas where calving and nursing of young occurs, the lobster fishery is not expected to affect blue whales.

Sperm Whale

Sperm whales regularly occur in waters of the U.S. Exclusive Economic Zone (EEZ). However, the distribution of the sperm whale in the U.S. EEZ occurs on the continental shelf edge, over the continental slope, and into mid-ocean regions (Waring et al. 2007). In contrast, the American lobster fishery operates in continental shelf waters. The average depth of sperm whale sightings observed during the CETAP surveys was 1,792m (CETAP 1982). Female sperm whales and young males almost always inhabit waters deeper than 1000m and at latitudes less than 40° N (Whitehead 2002). Sperm whales feed on larger organisms that inhabit the deeper ocean regions (Whitehead 2002). Calving for the species occurs in low latitude waters outside of the area where the American lobster fishery operates. Given that sperm whales are unlikely to occur in areas (based on water depth) where the American lobster fishery operates, and given that the operation of the American lobster fishery will not affect the availability of sperm whale prey or areas where calving and nursing of young occurs, the continued operation of the American lobster fishery is not likely to affect sperm whales.

Hawksbill Sea Turtle

The hawksbill turtle is uncommon in the waters of the continental U.S. Hawksbills prefer coral reefs, such as those found in the Caribbean and Central America. Hawksbills feed primarily on a wide variety of sponges, but also consume bryozoans, coelenterates, and mollusks. The Culebra Archipelago of Puerto Rico contains especially important foraging habitat for hawksbills. Nesting areas in the western North Atlantic include Puerto Rico and the Virgin Islands. There are accounts of hawksbills in south Florida and individuals have been sighted along the east coast as far north as Massachusetts; however, east coast sightings north of Florida are rare (NMFS 2009a). Since operation of the lobster trap/pot fishery would not occur in waters that are typically used by hawksbill sea turtles, it is highly unlikely that its operations would affect this turtle species.

Kemp's Ridley Sea Turtle

The Kemp's ridley is one of the least abundant of the world's sea turtle species. In contrast to loggerhead, leatherback, and green sea turtles, which are found in multiple oceans of the world, Kemp's ridleys typically occur only in the Gulf of Mexico and the northwestern Atlantic Ocean (USFWS and NMFS 1992). Foraging areas documented along the U.S. Atlantic coast include Charleston Harbor, Pamlico Sound (Epperly et al. 1995c), Chesapeake Bay (Musick and Limpus 1997), Delaware Bay, and Long Island Sound (Morreale and Standora 1993). Adult Kemp's ridleys are found in the coastal regions of the Gulf of Mexico and southeastern U.S., but are typically rare in the northeastern U.S. waters of the Atlantic (TEWG 2000).

Like other turtle species, the severe decline in the Kemp's ridley population appears to have been heavily influenced by a combination of exploitation of eggs and impacts from fishery interactions. Currently, anthropogenic impacts to the Kemp's ridley population are similar to those discussed above for other sea turtle species. Takes of Kemp's ridley turtles have been recorded by sea sampling coverage in the Northeast otter trawl fishery, pelagic longline fishery, and southeast shrimp and summer flounder bottom trawl fisheries. There is no documentation of Kemp's ridley sea turtles being incidentally taken by the lobster trap/pot fishery, therefore it is unlikely that this operation would affect this turtle species.

Green Sea Turtle

In the western Atlantic, green sea turtles range from Massachusetts to Argentina, including the Gulf of Mexico and Caribbean (Wynne and Schwartz 1999). Green sea turtles occur seasonally in Mid-Atlantic and Northeast waters such as Chesapeake Bay and Long Island Sound (Musick and Limpus 1997; Morreale and Standora 1998; Morreale et al. 2005), which serve as foraging and developmental habitats. As with the other sea turtle species, incidental fishery mortality accounts for a large proportion of annual human-caused mortality outside the nesting beaches. Sea sampling coverage in the pelagic driftnet, pelagic longline, southeast shrimp trawl, and summer flounder bottom trawl fisheries has recorded takes of green sea turtles. There is no documentation of green sea turtles being incidentally taken by the lobster trap/pot fishery, therefore this species is unlikely to be affected.

Atlantic Salmon Critical Habitat

Coincident with the June 19, 2009 endangered listing, NMFS designated critical habitat for the GOM DPS of Atlantic salmon (74 FR 29300; June 19, 2009) (Figure 3). Designation of critical habitat is focused on the known primary constituent elements (PCEs) within the occupied areas of a listed species that are deemed essential to the conservation of the species. Within the GOM DPS, the PCEs for Atlantic salmon are 1) sites for spawning and rearing and 2) sites for migration (excluding marine migration; although successful marine migration is essential to Atlantic salmon, NMFS was not able to identify the essential features of marine migration and feeding habitat or their specific locations at the time critical habitat was designated. While there is potential for lobster fishing activity to occur within estuaries in the GOM DPS of Atlantic Salmon, the placement of lobster traps and trawls is expected to allow adequate passage for migrating salmon. Likewise, the associated fishing activities (i.e. hauling gear and vessel movements) are not expected to alter water chemistry or physical attributes to levels that would affect migration patterns of smolts or adult salmon.

3.6 OTHER AFFECTED SPECIES

3.6.1 Bycatch Fisheries

The term “bycatch” refers to the unintentional landing and discarding of animals not specifically targeted by fishing vessels. Animals may be discarded for a variety of reasons, both economic and regulatory. Commonly discarded animals include those that are of an undesirable size, sex, or species. In addition to discards, fishing typically involves some degree of unobserved animal mortality associated with fishing gear (e.g., animals entangled in nets, breaking free of hooks or lines, and ghost fishing).

In general, the pots used in commercial lobster fisheries are among the more selective types of fishing gear. As a result, overall *levels* of bycatch in pots are low in lobster fisheries relative to other marine fisheries. The most common types of bycatch in lobster pots are juvenile lobsters and crabs, as well as some bottom fish and other invertebrates. The discard mortality rates (the percentage of discarded animals that die) associated with animals caught in traps is low, particularly when compared against the mortality rates linked with mobile fishing gears such as trawls and dredges.

There is little quantitative information available detailing the composition of bycatch in U.S. or Canadian lobster fisheries. Currently, no U.S. bycatch monitoring program exists for the lobster fishery in the United States or Canada (NMFS 2003; Gendron 2005). While there has been no systematic review, bycatch in lobster traps is reported to consist of a variety of animals attracted to bait and capable of entering traps. Types of fish occasionally caught in lobster traps include tautog, scup, black sea bass, cod,

cusk, eels and flounder. A study monitoring bycatch in the lobster fishery off New York found that tautog (23%) and scup (30%) were the two species of finfish most commonly taken in lobster pots (ASMFC 1997). In addition to fish, a variety of invertebrates are found in and attached to lobster traps. These include rock crabs, Jonah crabs, red crabs, starfish, urchins, whelks and conchs (ASMFC 1997; Butler 2004; Miller 2005). In Canada, cod and one species of cusk are species of concern, but bycatch rates of these species are low and vary by area. At present, no efforts are underway to limit the very small bycatch of these species (Miller 2005; Pezzack 2005).

Because of the nature of trap fisheries, fish and invertebrates landed in traps are likely to be discarded with lower mortality rates than those landed with other gear types such as trawls and dredges (Davis 2002). The number of animals that die after being caught and discarded in the American lobster fishery appears small compared to actual lobster landings.[78]

Jonah Crab

Jonah crab, *Cancer borealis,* is currently an unregulated species in Federal waters. Little is known about the species' biology, distribution, and relative abundance. Also known as the Rock crab and the Bull crab, Jonah crabs are found from Florida to Nova Scotia, mainly in offshore, rocky habitats. Females obtain a carapace width of 100 mm after about eight years, and males reach 130 mm in six to seven years. Individuals larger than 190 mm have not been observed, and it is believed that a terminal molt size might exist (NMFS, 2002).

Jonah crab is a traditional by-catch of the Maine lobster fishery. Jonah crab landings have traditionally been used by lobstermen as a supplement to cover operating expenses. However, due to a recent increase in crab abundance and market demand, it has become profitable for lobstermen to target Jonah crab with lobster traps/pots during times of low lobster landings (generally in the spring). This in turn has led to interest in targeting Jonah crabs year round.

Without an FMP, fishing effort on Jonah crab by trap vessels in Federal waters is only regulated and constrained by trap limits if the vessel possesses a Federal lobster permit. As such, vessels not otherwise restricted by their lobster permit are able to set an unlimited amount of 'crab' trap gear. The industry is concerned that this situation may lead to adverse marine mammal impacts, increased gear conflicts, and a potential for illegal harvest of lobster by non-permitted vessel. NMFS has previously indicated that there is not enough scientific and fisheries information on the crab fishery at this time to justify development of a crab FMP.

Landings of Jonah crab in the Northeastern United States totaled 8.5 million pounds in 2008[79]. Inshore lobster traps/pots caught 13 percent of the total (see Table 3.14, below).

[78] The general discussion for "by-catch," above, was taken from "*Seafood Watch,*" American Lobster-Northeast Region, Final Report, February 2, 2006. All sources as referenced therein (Elliott 2006).

[79] Data on Jonah crab landings may be inaccurate due to frequent misidentification at the docks as well as substantial cash transactions that are never documented.

Table 3.14 - Jonah Crab Landings by Gear Type, FY2008

Gear Type	Total Pounds Landed	% of Total Pounds Landed
Offshore Lobster Pots and Traps	53,492	0.6%
Inshore Lobster Pots and Traps	1,121,398	13%
Pots and Traps, Conch	40,970	0.4%
Pots and Traps, Other[1]	7,208,801	86%
TOTAL	8,424,661	100.00%

Note: The general Northeast gear code 18, Pots and Traps, includes, but is not limited to, trap and pot gear targeting fish, eel, conch, hagfish, and other/unclassified species. Traps and pots targeting lobster, shrimp, or crab are included in other general gear categories.

Source: Dealer data provided by NMFS, Northeast Region, Fisheries Statistics Office (http://www.st.nmfs.noaa.gov/st1/commercial/index.html).

The ex-vessel value of Jonah crab landings in the Northeast totaled $4,654,830 in 2008.

Red Crab

Deep-sea Red Crab, *Chaceon quinquedens*, are distributed along the continental shelf edge and slope of the western Atlantic from Emerald Bank, Nova Scotia to the Gulf of Mexico. They are typically found at depths of 2000 to 1800 meters (700-5900 feet), reach a maximum carapace width of 180 mm, and may live 15 years or more (Serchuk and Wigley, 1982). Scientific research suggests that red crabs are most likely opportunistic omnivores due to the limited availability of food at the depths common for this species. The red crab fishery was previously limited by the high catch-related mortality of the crabs (and rapid degradation of the meat) and a lack of economical processing. Technological advances have made fishing for this species feasible and fresh and frozen meat from the crab is now sold commercially (NEFMC, 2002).

Vessels operating in the red crab fishery typically make 28 to 35 trips per year, with each trip lasting seven to ten days. Trips are limited in duration primarily by the hold capacity of the vessel and the need to keep the product fresh and alive. Vessels fish 500 to 600 traps/pots using 90 to 120 traps/pots per trawl. Traps/pots are allowed to soak 18 to 36 hours, with an average soaking time of 22.5 hours. The reported average trap/pot loss is just over 10 pots/traps per trip (NEFMC, 2002).

Management of the red crab fishery under the Magnuson-Stevens Act occurred relatively recently. Following a request from the New England Fishery Management Council (NEFMC), the Secretary of Commerce issued an emergency rule effective May 18, 2001 for management of the red crab fishery in the Exclusive Economic Zone (EEZ) from 35°15.3' North Latitude (the latitude of Cape Hatteras Light, NC) northward to the U.S./Canada border. An FMP was subsequently developed by the NEFMC, approved by NMFS and implemented by regulations effective October 20, 2002 (NEFMC, 2002). The regulations include measures to limit and control effort in the fishery, including a limited-access permit system. Specifically, access to the fishery is limited to those fishermen who met specific criteria during a qualifying period; no additional entrants are allowed, but permits may be sold or otherwise transferred to a new owner. The regulations include gear restrictions and days-at-sea (DAS) allocations. Other measures include gear marking requirements, mandatory vessel trip reports, and a requirement for operator permits and dealer permits (NMFS, 2002a).

According to the January, 2010 NEFMC *Stock Assessment and Fishery Evaluation (SAFE) Report*, overfishing is not considered to be occurring on the Red Crab stock (based on FY 2008 data). To assess

whether the stock is considered to be overfished, current data on either stock status or fleet per trap CPUE are necessary. Because none of these data are currently available, stock status with respect to being in an overfished condition cannot be determined at this time.[80]

Of the 879 vessels permitted to fish for red crab in FY2002, 874 vessels had incidental bycatch permits and five had controlled access permits. Traps/pots are the most prevalent primary gear, followed closely by bottom trawls, then dredges.

Table 3.15 - Red Crab Landings by Gear Type, FY2008*

Gear Type	Total Pounds Landed	Percent of Total Pounds Landed
Pots and Traps	2,665,281	96.489%
Bottom Trawl	96,909	3.508%
Midwater Trawl	70	0.003%
TOTAL	2,762,260	100.00%

Source: Dealer data provided by NMFS, Northeast Region, Fisheries Statistics Office.
*1 March 2008 – 28 February 2009

The ex-vessel value of red crab landings in the Northeast totaled roughly $4 million in 2002. More recently, overall landings have decreased from over 4 million lb in 2005 to less than 3 million lb in 2007 and 2008. (NEFMC 2010)

3.6.2 Bait Fisheries

Bait is used in lobster pots to attract lobsters and is an important component of the lobster fishery. In the United States, Atlantic Herring is the major source of lobster bait, comprising nearly 90% of the bait used in Maine (Seafood Watch 2006).[81] It has been estimated that 50,000-60,000 tons of bait are used in the U.S. lobster fishery annually to yield approximately 35,000 tons of adult lobsters.

Atlantic Herring

According to the Maine Department of Marine Resources, the emergence of large-scale fisheries for herring in the Gulf of Maine, Georges Bank, and southern New England waters is a relatively new occurrence, promoted in large part by demand for bait from the lobster industry. Commercial landings of Atlantic herring are currently between 70,000-100,000 mt, of which roughly 60% (~ 50,000 mt) goes to the lobster baitfish market. (DMR 2004, SW 2006)

Atlantic herring are distributed along the Atlantic coast from North Carolina to the Canadian Maritime provinces in inshore and offshore waters (including in every major estuary from the northern Gulf of Maine to the Chesapeake Bay) to the edge of the continental shelf. They are most abundant north of Cape Cod and become increasingly scarce south of New Jersey (Kelly and Moring, 1986; NEFMC, DRAFT

[80] See NEFMC Stock Assessment and Fishery Management Report, January 6, 2010, http://www.nefmc.org/crab/.
[81] The remaining 10% is made up of fish such as porgies, alewives, and redfish (SW 2006).

SEIS, 2005)[82]. All life stages of Atlantic herring can be found in high abundance in the Gulf of Maine and in lower abundance in the mid-Atlantic, but only adult herring are found to be abundant south of Narragansett Bay (Reid et al., 1999; Stone et al., 1994; NEFMC, DRAFT SEIS, 2005). Adult herring are common in more northern locations throughout the year, but are more abundant in the fall and winter. Further south, from New York to Chesapeake Bay, they are absent in the summer and never abundant. Juveniles are more common in more northern areas throughout the year and in all locations except Chesapeake Bay in the spring.

Herring is an important species in the food web of the northwest Atlantic. Herring eggs are deposited on the bottom and incubate for about 10 days. They are subject to predation by a variety of demersal fish species, including winter flounder, cod, haddock and red hake. Juvenile herring, especially "brit" (age-1 juveniles) are preyed upon heavily due to their abundance and small size.

Atlantic herring is an important prey species for a large number of piscivorous (fish-eating) fish, elasmobranches (sharks and skates), marine mammals and seabirds in the northeastern United States. Unlike other pelagic (open ocean) fishes, such as Atlantic mackerel, herring are smaller and vulnerable to predation over most, if not all, of their life (Overholtz et al., 2000). The major finfish and elasmobranch species that feed heavily on Atlantic herring (or on clupeid species as a group) are Atlantic cod, silver hake, thorny skate, bluefish, goosefish, weakfish, summer flounder, white hake, and – in certain locations and times of year – Atlantic bluefin tuna. Other species that feed on herring are spiny dogfish, Atlantic halibut, red hake, striped bass, dusky shark, and black sea bass.

While the Atlantic herring resource is currently not overfished and overfishing is not occurring (ASMFC 2009b), the current level of abundance and spawning stock biomass has generated competing interests in new and expanded sectors of the herring fishery including: maintaining traditional use patterns in the fishery, increasing the bait fishery and protecting herring's role as forage in the northwest Atlantic ecosystem. Additionally, the interest in expansion of the fishery has raised concerns about potential overharvest, locally or on the entire stock complex.

Most U.S. commercial catches occur between May and October in the Gulf of Maine, consistent with the peak season for the lobster fishery. In addition, there is a relatively substantial winter fishery in southern New England, and catches from Georges Bank have increased somewhat in recent years.

Landings by the United States averaged about 62,300 mt during 1978-1994, increased to an average of 103,000 mt during 1995-2001, and declined to an average of 95,000 mt during 2002-2005. Landing since 2005 have averaged nearly 90,000 mt. From 1978-82, US landings were about equally split between weir fisheries and purse seines. Though from 1983-92, most US landings were taken by purse seines, more recently, single mid-water and paired mid-water trawling have dominated landings, with purse seining accounting for about 10-15% of the US total from 2000-05. Since 2005, purse seining has increased while pair and single mid-water trawling has decreased, with relative shares as follows: pair trawling, 56%; single mid-water trawling, 12%; and purse seine, 26%.[83]

The majority of harvest in 2007 was taken by commercial fishermen, with total landings in 2008 of nearly 73,000 mt. Of the 2008 total, Massachusetts and Maine accounted for 92% (at 54.6% and 38.1%, respectively), followed by New Jersey (3.8%) and Rhode Island (2.6%).[84]

[82] http://www.asmfc.org/speciesDocuments/herring/fmps/draftAm2forPublicComment.pdf (ASMFC 2006c)
[83] ASMFC, *2008 Review of the Fishery Management Plan for Atlantic Sea Herring*, November, 2009 (ASMFC 2009b).
[84] Ibid.

In February, 2010, the ASMFC Atlantic Herring Section set new specifications for the fishery for the 2010-12 period based on scientific analyses showing that biomass estimates for the fishery had been overestimated by an average of 40% over the last several years. As a result, optimal yield for the fishery was reduced by nearly 54,000 mt below the 2008-09 amount of 145,000 mt. [85]

Processing of Atlantic herring is for lobster bait (salted and barreled, fresh or frozen); sardines (canned) and food export (frozen whole). The shoreside processing sector of the Atlantic herring fishery has expanded substantially in the last few years. Consequently, there is no longer an allocation for foreign at sea processing (joint venture and internal waters processing operations). New herring processing plants have come on-line in New Bedford and Gloucester, Massachusetts and Cape May, New Jersey. Though the canneries that were once a mainstay of employment in Maine have virtually disappeared, the one remaining cannery is to be renovated so that it becomes a state-of-the-art facility.

[85] Feb 4, 2010 ASMFC Press Release, *ASMFC Atlantic Herring Section Sets Specifications for 2010-2012* (ASMFC 2010).

Chapter 4 – Environmental Impacts

ENVIRONMENTAL IMPACTS CHAPTER 4

4.0 Introduction

Consistent with Section 1502.16 of the CEQ NEPA regulations (40 CFR Part 1500), this chapter presents an analysis of the potential direct and indirect impacts of each alternative on the affected environment as described in Chapter 3. Each alternative was evaluated for its potential to produce impacts on the human environment. In this regard, because the proposed actions are regulatory in nature, the analysis includes a discussion of their effect on management and enforcement of the Federal lobster program and compares these effects across all of the alternatives chosen for review. Finally, because of their importance in relation to the proposed LAP and ITT measures, social and economic impacts are evaluated within independent sections in order to better highlight the potential impacts on affected communities. Table 4.1, below, provides the evaluation criteria used to determine the significance of the potential impacts.

Six major components are examined in detail:

- Section 4.1 provides background information on a number of important topics that are common to each of the alternatives evaluated in this chapter. These topics include: data used for the analysis; documentation needed to determine historical participation in the lobster fishery; the need for a centralized database tracking system; sources of "disconnects" across state and Federal jurisdictions; the Most Restrictive Rule; and latent effort;
- Section 4.2 analyzes the potential regulatory and biological and physical environmental impacts from the proposed changes to Federal lobster management in the *LCMA OCC*;
- Section 4.3 analyzes the potential regulatory and biological and physical environmental impacts from the proposed changes to Federal lobster management in the *LCMA 2*;
- Section 4.4 analyzes the potential regulatory and biological and physical environmental impacts from the proposed implementation of an *Inter-transferable Trap Program (ITT program) in LCMA OCC, LCMA 2 AND LCMA 3*;
- Section 4.5 describes the impact of the proposed management changes on the economic environment;
- Section 4.6 describes the impact of the proposed management changes on the social environment.

As described in Section 1.3, direct impacts are caused by the action and occur at the same time and place. Indirect impacts are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.

Impact characteristics (i.e., minor, moderate, or major), as described in Section 1.3, have several attributes including (1) duration (i.e., short-term, long-term), (2) mechanism (i.e., direct, indirect), (3) magnitude (classifications ranging from minor to major), and (4) whether an impact is adverse or beneficial. Impact analyses and the criteria upon which impact determinations are made—as presented in the following section—also consider two critical NEPA-based factors:

- Context – where an impact can be determined to be localized or more widespread (e.g., regional).
- Intensity – where an impact is determined through consideration of several factors, including whether the Proposed Action might have an adverse impact on the unique characteristics of

an area (e.g., historical resources, ecologically critical areas), public health or safety, or endangered or threatened species or designated critical habitat. Impacts are also considered in terms of their potential for violation of Federal, state, or local environmental law; their controversial nature; the degree of uncertainty or unknown impacts, or unique or unknown risks; if there are precedent-setting impacts; and their cumulative impacts (see Chapter 5).

The following guidance provides a framework for establishing whether an impact would be minor, moderate, or major (as discussed in Section 1.3). Which category is assigned would depend in part on the intensity and context of the impact on the resource, as defined above. Although some evaluation criteria have been designated based on legal or regulatory limits or requirements, others are based on best professional judgment and best management practices. The evaluation criteria include both quantitative and qualitative analyses, as appropriate to each resource.

Table 4. 1 - Evaluation Criteria

RESOURCE	EVALUATION CRITERIA
Regulatory Environment	• Compatibility with ASMFC-approved measures (major) • "Disconnects" between Federal & state management regimes (minor-to-major depending on degree of disconnects) • Enforcement or administrative burdens resulting from disconnects (minor-to-major depending on degree of disconnects)
Biological Resources	• Violate a legal standard for protection of a species or its critical habitat (major) • Degrade the commercial, ecological, or scientific importance of a biological resource or its critical habitat (minor to major depending on extent of degradation) • Measurable change in the population size (density) or change in the distribution of an important species in the region (minor to major depending on extent of change) • Measurable change in trap density or distribution of traps that may result in a change to biological resources (minor to major depending on extent of degradation)
Physical Environment	• Degradation of critical habitat of a biological resource (minor to major depending on extent of degradation) • Measurable change in trap density or distribution of traps that may result in a change to physical resources (minor to major depending on extent of degradation)
Protected Resources	• Violate a legal standard for protection of a species or its critical habitat (major)
Commercial Fisheries (including By-Catch and Bait Fisheries)	• Violate a legal standard for protection of a species or its critical habitat (major)
Socioeconomics	• Substantial change to the local or regional economy, population, housing, infrastructure (schools, police, and fire services), social conditions, or employment (major) • Disproportionate environmental, economic, social, or health impacts on minority or low-income populations (minor to major depending on risk and scope of impact)

For purposes of this assessment, areas that may be directly and indirectly affected by the alternatives under evaluation include LCMAs 1, 2, 3, and OCC within the American Lobster fishery, encompassing inshore and offshore coastal areas from Maine to North Carolina.

4.1 Major Topics Common to Each Alternative Evaluation

The following issues are relevant to all of the alternatives evaluated: data used for the analysis; documentation of historical participation in the lobster fishery; the need for a centralized database tracking system; sources of "disconnects" across state and Federal jurisdictions; the Most Restrictive Rule; and latent effort. Because these topics are important to a clear understanding of the impacts analysis that follows, some background on each one is provided below.

Data Used for This Analysis

The analysis within this chapter necessarily relies in part on imperfect data. The absence of systematic record keeping for the commercial lobster industry has historically made it a challenge for NMFS to apply data robust enough to develop comprehensive analyses of the commercial lobster industry (particularly over time). The need for mandatory reporting requirements for Federal license holders to address this deficiency has long been recognized and NMFS recently published a final rule that includes a requirement for mandatory electronic reporting by all Federal lobster seafood dealers, effective January 1, 2010 (see 74 FR 37530, dated July 29, 2009). In the meantime, the following analysis uses best available data, largely from Federal and state sources, which is relied upon to measure inputs such as the number of Federal lobster permit holders by area, associated trap tag allocations and purchases, and landings data (not available on an area-specific basis). Where data gaps remain, other best-available sources have been used where possible and have been appropriately cited within the text.

For purposes of the LCMA OCC and the LCMA 2 analyses, NMFS chose to use state data. NMFS believes that state data provide the most helpful depiction of potential impacts to the proposed alternatives. As explained below, Federal permit data and trap tag data are useful to give rough, ballpark estimates of potential impacts, and VTR can be useful on a case-by-case basis, but none of the Federal data sets can provide precise estimates. For the LCMA OCC, state data is useful because this LCMA is located astride Massachusetts and Rhode Island waters – the states with complete lobster mandatory fishing reporting requirements. Additionally, the states have already reviewed their data and have reached preliminary decisions on the qualifications of all potential LCMA OCC applicants residing in their states – including those with Federal permits – based upon the criteria set forth in Addenda IV and VII. That said, the states' preliminary decisions are in no way binding on NMFS – if the agency ultimately chooses to limit LCMA OCC access as recommended by the Commission, the agency will make its decisions on Federal permits independently.

Acknowledging, therefore, that the state data is not an exact predictor of potential Federal decisions, NMFS believes that the results of the states' LCMA limited access programs likely present the most useful approximation of what would happen in a compatible Federal program. State data also provides good insight into the impacts on dual permit holders, for which, as stated in Chapters 2 and 3, consistency is a particular Federal concern. Tables 4.2 and 4.3, below, largely present state limited access program data.[86]

Documenting Historical Participation in the Lobster Fishery

The Commission's LCMA limited access programs have required any individual wanting access into the fishery to document his or her past historical participation in the LCMA. Various types of documents have been accepted for this purpose and it is anticipated that the same approach will be applied to future LAPs, as follows.

[86] See Appendix 14 for information on Commonwealth of Massachusetts Effort Control Programs for LCMA 2 and LCMA OCC.

- Federal Documents

  - *Federal Permit Data* - Federal lobster permit data can be used to roughly establish the total amount of effort potentially fishing in an LCMA in any given year. At present, there are approximately 3200 Federal permits, each of which must be renewed annually or relinquished. When a permit is renewed, individuals can designate (i.e., choose) any or multiple LCMAs on that permit for the coming year. As described in Section 3.3.1, however, this process sets up a sort of "dual reality," in that many individuals designate LCMAs on their permits despite having little intention of actually fishing there. Accordingly, Federal permit data is useful to provide a rough estimate of the upper boundaries of fishing effort in an LCMA, but more limited in its ability to document precise fishing effort in an LCMA. Table 3.6 in Section 3.3.1 is an example of information taken from Federal permit data.

  - *Trap Tag Data* – Trap tag data is an accounting of how many trap tags each permit holder ordered each year and for which LCMA. Technically, the data is not Federal insofar as the information originates from a private vendor that handles all transactions. This data would likely provide a more precise accounting of fishing effort in an LCMA – e.g., presumably, an individual would be less likely to purchase trap tags for an LCMA in which he or she had no intention of fishing.[87] However, the cost per trap tag is the same, regardless of the number of LCMAs that are selected. As explained in Section 3.3.1, trap tag data is limited in its ability to provide a more precise estimate of fishing effort in an LCMA and, like Federal permit data, is best used to approximate the upper boundary of fishing effort.

  - *Vessel Trip Report Data* — Federal Vessel Trip Report (VTR) data has the potential to provide the most accurate estimation of fishing effort in an LCMA, but is limited because it is not a reporting requirement of Federal lobster permits. In general, any fishing vessel with a Federal finfish and/or shellfish Permit must report the catch, location of catch and method of catch on a form.[88] Approximately 61% (2008 permit holders) of Federal Lobster Permit holders had to report their catch on Federal VTRs by virtue of holding another Federal finfish and/or shellfish permit. Because the VTR form was designed to capture the fishing history of other Federally regulated species by many gear types, the clarity in which the lobster catch is recorded on the VTR form can be unreliable. In NMFS' experience, some fishers present lobster fishing information completely and clearly on some VTRs; others, far less so.[89] Accordingly, VTR data can be an excellent source of fishing history on a case-by-case basis, but is of limited value for analysis on a programmatic level.

- Non-Federal Documents

  - *State data* — State data would involve any fishing history reported to a state as part of the state's lobster program. In some ways, state data could represent the best data on an individual's fishing history because, like VTRs, fishing history is recorded, but unlike VTRs, the reporting is mandatory for some state lobster fishers. There are, however, limitations to the usefulness state data in a Federal limited entry program. The different

[87] Although this monetary disincentive is limited : In 2008, a trap tag cost only 16 cents to purchase.

[88] Federal fishing vessel permits with mandatory VTR requirements are specified at 50 CFR 648.

[89] Federal VTRs were a component of NMFS' limited access program qualification process in LCMAs 3, 4, and 5. See Federal Register 68 FR 14902 3-27-03.

states have different reporting requirements– some, like Massachusetts and Rhode Island, have extensive reporting requirements; others, like Maine, have much less extensive data reporting requirements.

- *Other data* — This category of data would involve fishing history information that comes from a permit holder, such as Captain's logs, catch receipts, tax returns, etc. Such information can sometimes provide an accurate picture of a permit holder's fishing history in an LCMA where Federal VTR and/or state reporting information is absent. Although such documentation might be an acceptable form for proof in a Federal limited access program, the information is, by definition, not within the custody or control of the Federal government and, as a result, is not relied upon in the foregoing analysis.[90]

Database Issues

As outlined in Table 2.1, from 1999-2005 the Commission approved and subsequently modified limited access and transferable trap programs in three lobster management areas. As jurisdictions began to draft regulations to codify the various elements of each plan, a variety of issues were identified, including the need to centrally track state and Federal lobster permit holders and trap allocations across multiple jurisdictions. Based on issues raised by NMFS and the affected states, the Commission established a subcommittee to evaluate the three ITT programs and their effects across all LCMAs, and provide recommendations to the Board. The Subcommittee met on several occasions over an 18-month period, at the end of which it provided recommendations in a "White Paper"[91] to the American Lobster Board. The "White Paper" noted the following issues as being problematic with regard to the ITT programs in place: the lack of a multi-agency procedure to track ITT programs; different annual application periods between agencies for transfers; and no communication system between agencies for ITT transfers. It further noted that this inability to track transfers increased administrative burdens within jurisdictions and resulted in inaccurate trap allocations. Finally, it recommended that a multi-agency tracking system be established and funded.

Under an ITT program, the need to track fishing history will create logistical issues as allocations are split amongst permits and transferred within and/or across jurisdictions. There is presently no uniform mechanism to identify and track permit fishing history across all affected state and Federal jurisdictions nor is there any uniform measure to identify and track traps as they become transferred within and among state jurisdictions. These logistical issues will become compounded and more problematic as transfers proliferate and are re-transferred in successive years. Given this, NMFS believes there is a compelling need to establish and fund an expandable, web-based, tracking process for all multi-jurisdictional historic trap allocations and trap transfers. This tracking system would be managed by one entity, but all agencies should supply supporting data.

By creating a single set of regulatory guidelines that are consistent across participating state and federal jurisdictions, a central database would mitigate the potential problems created by individual and unique state/state and state/federal tracking systems. Specifically, a central tracking system would reduce administrative burdens across agencies trying to administer ITT programs, enable managers to measure of the success of ITT programs, and increase the understanding of how many traps have the potential to be fished in each LCMA area. In so doing, it lessens the potential for

[90] NMFS allowed Captain's logs and other permit holder information to be used as proof when qualifying individuals for access to LCMA 3, 4 and 5. NMFS, however, raised significant concerns in so doing. See Final Environmental Impact Statement (FEIS), October 30, 2002, page 32 (NMFS 2002a). Specifically, NMFS was concerned that some applicants might submit fraudulently created documents. Ultimately, NMFS was more concerned that many legitimate applicants would be left with no other recourse because few states had mandatory reporting during the application time period (1991 – 1999). Accordingly, NMFS allowed Captain's logs and other documents to be used, but required an Affidavit to accompany the submission. See Final Rule 68 FR 14902 3-27-03.

[91] The Commission's White Paper is attached to this DEIS as Appendix 6.

chaos and prevents further expansion of the problems created by potential individual and unique state/state and state/federal tracking systems. If a central database tracking program were not funded, then transfers across jurisdictions (e.g. state to state, or any transfer involving a dual permit holder) would not be possible, resulting in a smaller pool of within-jurisdiction-only transfers in state waters. Further, a smaller number of transfers result in less conservation value (fewer trap reductions through the conservation tax)."

As a follow up to the "White Paper" recommendations, the Board moved forward with draft Addendum XII, reaffirming the need to establish consistency in the qualification and allocation of fishing privileges across affected state and Federal jurisdictions, and included a recommendation on the critical need for a central database. Lack of a central database was also one key concern in NMFS comments provided to the Commission during the initial round of public comments on draft Addendum XII. It would also reduce the administrative burden on all agencies working to coordinate ITT programs. (See Appendix 11 – NMFS Comments on Draft Addendum XII, dated April 11, 2008). In fact, Addendum XII clearly states that development of a central database is a "fundamental requirement to the effective administration of this [the ITT] program." (See Appendix 3 – Addendum XII, dated February 2009)

Latent Effort

"Latent effort" is an important concept that is discussed in greater detail throughout this chapter, but particularly in the analysis of potential ITT programs. The term might initially seem something of an oxymoron: i.e., describing "effort," the act of doing something, as "latent," something that is inactive or dormant. For purposes of this analysis, however, latent effort should be considered potential effort – effort that is not actually occurring at present, but that could potentially be activated in the future.

In the lobster trap fishery, latent effort (as well as active effort), is generally measured in terms of lobster traps. For example, a Federal lobster permit holder in Area 2 can fish up to 800 lobster traps. That permit holder, however, might only decide to fish with 500 traps. In such a scenario, the lobster fishing effort on paper is 800 traps, but only 500 are actually in the water being fished; the remaining 300 traps are "dormant" and would be described as latent effort.

From a lobster management point of view, the difficulty with latent effort is that it is hard to quantify with any degree of precision. There is no uniform reporting system to document how many traps are actively fished in a given year versus how many traps stay on shore. Further, even if latent effort could be quantified, the number would only represent a snapshot of effort existing at a given time, i.e., latent effort goes up and down seasonally as lobster fishers increase and decrease the number of traps they set in the water depending on conditions and circumstances. Unfortunately, when scientists assess the lobster stock, the scientific conclusions are based upon what is actually occurring on-the-water – latent effort, because it exists only on paper or on-the-shore, does not enter the scientific equation and as such looms as an unaccounted-for variable.

What managers do know is that latent effort exists. Clearly, many, perhaps even most, lobster fishers fish less than the maximum number of traps allowable. Simple economic theory suggests that lobster fishers who are not using their traps would attempt to maximize income by selling these latent traps to somebody who could use them. In this way, latent effort would be activated and on-the-water effort could be increased. Accordingly managers must take a hard look at programs that have the potential to activate latent effort to ensure that the program does not compromise the overall conservation goals of the Lobster Plan. Chapter 4's analysis, particularly the section on ITT, does just that.

"Disconnects" across State and Federal Jurisdictions

The phrase "regulatory disconnects" has been used repeatedly throughout this DEIS and generally refers to situations where states and/or NMFS create independent lobster regulations that are incongruent or at odds with one another. The roots of the regulatory disconnect issue lies in the area-specific nature of lobster management. In 1997, when the Commission originally adopted area-specific management under Amendment 3 to the Lobster ISFMP, the potential for regulatory disconnects was low. Then, management measures were largely limited to trap and gauge size limits that were relatively uniform across the areas. But as the Lobster Plan evolved (the Commission is currently on Addendum XVI to Amendment 3 of the Lobster ISFMP), the management strategies in the areas have become increasingly divergent and distinct.

Divergent area strategies might be less of a problem but for one inescapable biological truth: lobster move. And as they do, those who fish for lobster move with them. Accordingly, a single lobster fisher might fish in multiple management areas and be subject to differing regulations from numerous state and federal jurisdictions. With each added area and each added regulation, the risk of disconnects increases and creates a situation that is potentially unwieldy for fishers and managers alike.

This chapter will continue this discussion of potential disconnects, focusing on how they occur in each of the analyzed alternatives. Some disconnects will be obvious, others less so. For example, Chapter 4's No Action Alternatives (Sections 4.2, 4.3, and 4.4) represent a conscious, easily identifiable decision to part ways with the Commission's Lobster Plan. That is, the No Action Alternatives would continue to allow all Federal lobster permit holders to elect to fish with traps in the Federal waters of the Outer Cape Cod Management Area and Area 2, despite the states limiting access to those areas in accordance with the Commission's Lobster Plan. In short, individuals with state permits would be bound to one management regime, those with federal permits would be bound to another, and those with both permits (the so-called dual permit holders) would be left trying to figure out which management regime controlled what circumstances.

Not all disconnects are as obvious as those identified in the No Action Alternatives. The potential for disconnects can occur even where both NMFS and the states attempt to follow the same Commission Plan. For example, the Commission Alternatives (Sections 4.2, 4.3, and 4.4) represent NMFS's attempt at rote adherence to the Commission's Lobster Plan (and by extension, the states' plans). Nevertheless, detailed though the Commission Plan may be, aspects of it are open to interpretation and the states may apply parts of the Plan differently (e.g., Rhode Island's appeal standards are different than Massachusetts' standards). Further, even where states use identical criteria, the states may review the limited access applications with differing levels of circumspection. Finally, simple statistical analysis suggests it unlikely that NMFS will be able to duplicate each of the various states' decisions at each of the three decision points (i.e., step 1: qualification; step 2: allocation; and step 3: transfer) on every one of the hundreds of dual permit holders likely to apply.

Ultimately, the Chapter 4 analysis will likely present NMFS with the following range of disconnects: larger scale, but known, disconnects at a programmatic level (No Action Alternatives); less obvious, but still occurring disconnects on a smaller case-by-case scale (Commission Alternatives); or alternatives that seek to mitigate against the programmatic or case-by-case disconnects existing at the respective extremes.

Most-Restrictive Rule

The "most-restrictive rule," requires that the fishing and/or sale of traps be limited to a permit holder's lowest, history-based, area trap allocation[92]. While the most-restrictive rule has broad

[92] See Chapter 4.1 of this DEIS and Addendum XII (Appendix 3), Section 4.2 for a detailed description of the Most Restrictive Rule.

applications in lobster management, for purposes of this EIS, its importance relates to two concerns regarding effort control:

- permit holders who designate multiple LCMAs on their permits could, when combining LCMA allocations, double or triple count the number of traps they have historically fished and in this way proliferate the number of traps in the lobster fishery either through their own fishing practices or through the sale of those allocations to other permit holders;

- dual permit holders (those possessing both state and Federal permits) can similarly double count their allocations by, for example, selling their Federal permit (and the trap allocation that accompanies it) to another fisherman, then electing to fish in an LCMA without historic participation requirements.

The most restrictive rule was passed by the Commission under Amendment 3 in 1997 and in Addendum XII in February 2009. This was followed by Federal Rulemaking (64 FR 68228, dated December 6, 1999) implementing similar requirements. The most-restrictive rule has broad applications in lobster management and was established originally in recognition of the problems that can arise when permit holders become subject to multiple management regimes, be it state/Federal or multi-LCMA regimes. Fundamentally, its purpose is to act as a sort of "compass" by which a permit holder can navigate through seemingly competing management regimes. It does this by requiring that, when a permit holder is governed by multiple management regimes (either dual state/Federal permits or multiple LCMAs), the more restrictive management measure prevails. This rule applies across the spectrum of lobster management requirements, including min/max gauge sizes, vent restrictions, or trap allocations.

The Commission, in follow up to the White Paper LAP/ITT discussions, addressed the transfer of allocated traps and the impact of trap transfers on the buyer and seller. Readers are urged to review Addendum XII, attached to this DEIS as Appendix 3. Its significance, for purposes of this EIS, lies in how the rule applies to fishing allocated traps. In this context, the most-restrictive rule targets two situations for the permit holder: 1) the permit holder who designates multiple LCMAs on his or her permit, and 2) the dual permit holder, i.e., someone who possesses both a state and Federal lobster permit. In both situations, it is possible for multiple allocations to be combined, or "stacked," resulting in a total number of traps allocated that could exceed the maximum number of traps that the permit holder ever fished historically in any one area. As such, the result may be an increase in effort because 1) a permit holder can potentially fish well beyond their historic level in any one area by combining permit area allocations and, 2) under an ITT program (if such a program is established), a permit holder could "transfer" (i.e., sell) some or all of their allocation in one LCMA, and continue to fish their full allocation in another LCMA. The most-restrictive rule addresses this issue by eliminating the potential for stacking and by limiting the number of traps that can be fished or sold (i.e., transferred) under an ITT-type program.

4.2 LCMA OCC Alternatives

Table 4.2 - LCMA OCC - Comparison of # of Permits, Traps and Trap Tags by Alternative

		Alternative 1 No Action (Status Quo) '07 data		Alternative 2 Commission Alternative		Alternative 3 Qualify Only	
Vessel/Permit #s / # Tags		Elected	Purchased Tags	Qualified[1]	Purchased Tags	Qualified[1]	Purchased Tags
	MA	131	26	26	26	26	26
	RI	20	9	0[3]	0	0[3]	0
	CT	4	0	0[3]	0	0[3]	0
	NY	6	0	0[3]	0	0[3]	0
	NJ	9	3	0[3]	0	0[3]	0
	Total	170	38	26	26	26	26
Allocation/# of Traps		Allocated	Fished	Allocated	Fished	Allocated	Fished
	MA	104800	12880	13053	12880	20800	20800
	RI	16000	6445	0	0	0	0
	CT	3200	0	0	0	0	0
	NY	4800	0	0	0	0	0
	NJ	7200	2400	0	0	0	0
	Total	136000	21725	13053	12880	20800	20800[2]

1 Except for NJ (for which Federal data was used), number of Federal permit holders qualified by state authorities only.
2 Subject to the more restrictive state enforcement. See Most Restrictive Rule discussion in Sections 4.1 and 4.2 of this DEIS and in Addendum XII, which is attached to this DEIS as Appendix 3.
3 NMFS is not aware of any state qualifications for these states for the LCMA OCC.

Table 4.2, above, shows 1) the projected number of permit holders (either elected or qualified, depending on the alternative) versus the number of permit holders purchasing trap tags (as a proxy for those actually fishing) and 2) total traps allocated versus traps fished under the three alternative scenarios analyzed for the LCMA OCC.

For Alternative 1–No Action (Status Quo), it is assumed that current conditions for the LCMA OCC will continue, more or less, and that the most recent data (2007) provides the best projection for the number of permit holders that will *elect* to fish within this LCMA under this scenario. Trap tag data showing the number of permit holders buying trap tags (2007) is used as a proxy for the number of permit holders *actually fishing* (since, as stated previously, the fact that a permit holder has "elected" an area does not mean they actually fished there). Under this alternative, the number of traps *allocated* was derived by multiplying the number of traps allowed under a Federal permit/open-access program – 800 – by the number of those "electing" to fish. The number *"fished"* was provided by the respective states and is based on state trap tag data.

For both Alternative 2–Commission Alternative and Alternative 3–Qualify Only, state-derived data using the Commission-approved criteria spelled out under Addenda XII and XIII was used to project the number of fishers that would *qualify* for an allocation of traps within this LCMA. Under Alternative 2-Commission Alternative, *allocated* trap numbers were also state-derived, again, in accordance with Commission-approved criteria spelled out under Addenda XII and XIII. For Alternative 3-Qualify Only, the number of traps *allocated* was derived by multiplying the number of traps allowed under current regulations (800 traps) by the number of those qualified to fish. However, based on the geographic location of the OCLA and more effective enforcement of the Most Restrictive Rule under a single jurisdiction (the Commonwealth of Massachusetts), the number of traps that would be actively fished under Alternative 3 is likely to be lower than indicated in Table 4.2.

Based on the findings in Table 4.2, above, the following observations can be made:

- In shifting from the status quo in the LCMA OCC (where any Federal permit holder can elect to fish the area) to a limited-access program, "accounting" of what is taking place within the fishery becomes more accurate in two important ways. First, the number of permit holders actually fishing within the LCMA OCC becomes more accurate. Unlike the status quo, where a wide gap exists between those permit holders "electing" to fish and those actually purchasing trap tags, under a limited-access program, the number of "qualified" permit holders and those purchasing trap tags (those who "really" fished) would generally be equal. Second, the number of traps being fished (i.e., effort) also becomes more accurate, as the gap between the number of traps initially allocated to qualified fishers and those actually fished would become far more narrow than the gap between traps allocated to those "electing" to fish and traps actually fished under the No Action Alternative 1.

- The number of traps allocated shrinks significantly when shifting from the status quo to a LCMA OCC area-specific limited-access fishery (by 90% under Alt 2-Commission Alternative and 85% under Alt 3-Qualify Only);

- Massachusetts emerges as the dominant player within the LCMA OCC under a limited-access program; no permit holders within the other contiguous states would qualify for an initial allocation of traps, based on the qualifying criteria passed by the Commission. This may be due to the geographical characteristics of the LCMA OCC (predominantly a Massachusetts fishery) and the expense and time required for boats to transit long distances if they were located in an adjacent state. Further, the practical reality of changing fishing locations in a highly territorial fishery limits to some unquantifiable degree the extent to which vessels switch from one area to another.

Keeping these basic findings in mind, the following discussion analyzes the potential regulatory, biological, economic, and social impacts of the three proposed alternatives for the LCMA OCC.

4.2.1 Alternative 1- No Action

Regulatory Impacts

This section addresses potential regulatory impacts associated with the LCMA OCC No Action alternative. Potential regulatory impacts would be from the degree to which the proposed measures are compatible with the ASMFC-passed measures under Addendum XII, currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

MODERATE-TO-MAJOR, ADVERSE, LONG-TERM, DIRECT REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

Under this alternative, no Federal area-specific limited access program would be enacted in the LCMA OCC. As such, Federal lobster management in the LCMA OCC would remain as is and the following actions would continue:

1. Owners of any fishing vessel with a Federal limited access lobster permit could designate and fish in the federal portion of the LCMA OCC[93] under Federal regulations; and

2. Owners of any fishing vessel designating the LCMA OCC on their Federal limited access lobster permit could fish up to 800 traps under Federal regulations.

Compatibility with ASMFC-Approved Measures

Alternative 1-No Action would deviate from measures outlined in the Commission's ISFMP and associated state regulations in two significant ways.

1. States would follow the Commission-approved plan to cap effort in state waters based on fishing history while, in the Federal fishery, the option for the universe of 3200+ Federal permit holders to elect the OCC on an annual basis, regardless of their fishing history, (each with an 800 trap allocation) would continue.

   By definition, Alternative 1 rejects the implementation of compatible regulations and, in so doing, rejects efforts by the Commission to cap effort.[94] Further, Alternative 1-No Action could be viewed by Commission states as a refutation of the cooperative principles upon which lobster management is based. While nothing in the Atlantic Coastal Act or ISFMP Charter obligates the Federal government to rote adherence to every aspect of the Commission's Lobster Plan (and there have been past occasions where NMFS rejected a Plan recommendation or added a measure that was not recommended),[95] never has NMFS refused a core element of a Commission LCMA

[93] Federal permit holders renew their Federal permits annually. When they do so, they can designate (i.e., choose) any or multiple LCMAs on that permit for the coming year (in those LCMAs with Federal limited entry programs – i.e., LCMA 3, 4 and 5 – the permit holder must have previously qualified for entry in order to choose such an LCMA). In other words, Federal permit holders start each fishing season with a blank slate for a Federal permit on which they can pick and choose the LCMA or LCMAs in which they are going to fish. Once they choose, however, they are bound by that designation for the remainder of the fishing year.

[94] Addendum III, Section 2.1.7.2, February 20, 2002. As discussed in Chapter 2 (Sec 2.1), under Addendum III of Amendment 3 of the ISFMP, the Commission created the LCMA OCC limited entry program "…to control expansion of fishing effort" and, following this, specifically recommended that both the states and Federal governments implement compatible regulations. This recommendation was further supported in the approval of Addendum XIII in May 2008.

[95] For example, NMFS didn't implement the recommended vessel upgrade restrictions of Amendment 3 and added OCC max size and v-notch restrictions despite those restrictions not being part of the Commission's OCC plan.

plan or failed to implement a whole addendum. Alternative 1-No Action thus would likely frustrate Commission states that consider a Federal OCC limited access plan as being a necessary component to the effectiveness of their state OCC plan.

2. Under Alternative 1-No Action an ITT program in Federal waters would not occur because the necessary preceding steps—qualify and allocate—would not take place.[96]

As a result of these differences between Federal and state programs, management, administrative and enforcement objectives would become more difficult to achieve, as described below:

Management Impacts

Under Alternative 1- No Action, the difficulties in managing a shared, but unaligned, state-Federal program for the American Lobster fishery will continue (see Section 3.1 for a discussion of these difficulties). While analytic tools to quantitatively predict the impacts from this inability to align the programs are unavailable, NMFS believes that the potential impacts to management of the American Lobster fishery can be qualitatively described, as follows:

- Because under No Action, participation in the Federal fishery remains broadly defined to a universe of 3200+ permit holders, it is difficult to measure, and thus manage, fishing effort with this fishery. Under Alternative 1, anywhere from 184 permits (2007 data), to 225 permits (2004 data) to over 3000 permits (based on total Federal permits) could be fishing up to 800 traps per permit – meaning that managers would have to assume that anywhere from 147,000 traps (184 permits x 800 traps) to 2,400,000 traps (3200 permits x 800 traps) could be fished in any given year. While it is unlikely that all 3200+ permit holders would designate the OCC on their Federal permit, managers face the difficult challenge under No Action of understanding the level of real participation in the fishery and this makes it difficult to respond with any precision to problems facing the resource.
- Because under Alternative 1-No Action, any Federal permit holder could fish up to 800 traps in Federal waters of the OCC, effort control within the fishery will largely depend, by default, on the effective state enforcement of the Most Restrictive Rule. It is unclear whether and how affected states would enforce the Most Restrictive Rule, especially in situations where an individual receives a zero allocation on the state permit, or has been altogether disqualified under a state's OCC limited access program.

Administrative Impacts

Under Alternative 1-No Action, the administrative and enforcement burden to effected state and Federal jurisdictions would potentially increase as circumstances surrounding the disconnects between state/Federal management of the dual permit holder continue unaddressed.

A dual permit holder is a fisher who possesses both a state and Federal lobster permit. Because geographically the LCMA OCC is predominately a Massachusetts fishery, state requirements by Massachusetts are determinative of whether one can effectively fish for lobster in this area. Specifically, Massachusetts requires a state landing permit in order to land lobster within its jurisdiction.

[96] It is possible that an ITT program at the state level could proceed in the absence of a complementary Federal program. This is discussed in more detail in Section 4.4.

At the same time, administratively, NMFS and Massachusetts operate under a joint State-Federal Trap Tag Memorandum of Understanding (MOU), whereby Massachusetts is authorized to issue trap tags to all dual permit holders residing in Massachusetts. Under Alternative 1, No Action, it would be possible for a dual permit holder to not be qualified by the state, but still request that the LCMA OCC be included on the state-issued, coastal/EEZ trap tag because under the current Federal program anyone can elect and receive an allocation of up to 800 traps. Under these circumstances, Massachusetts currently refuses to issue trap tags with an OCC designation.[97]

The dual permit holder thus could be legally prohibited by Massachusetts from fishing in the LCMA OCC under state law and at the same time legally request his Federal trap tags from NMFS directly. Under Alternative 1, if the affected Federal permit holder requests his or her allotment of trap tags directly from NMFS, those tags would continue to authorize fishing in the LCMA OCC, even though the fisher may be excluded from effectively fishing those traps because of state landing requirements.[98]

The same situation is possible for some unknown number of dual permit holders from states other than Massachusetts. Given the geographic location of the LCMA OCC, it is likely that any non-Massachusetts dual permit holders would be from the adjacent states of New Hampshire or Rhode Island. Similar to Massachusetts, these states have Trap Tag MOUs with NMFS, and both states issue coastal/EEZ trap tags to Federal permit holders. But while Massachusetts has aggressively enforced its OCC limited-access regulations, it is less clear whether other adjacent states will as aggressively administer and enforce those restrictions. With different state-Federal management measures in effect under Alternative 1, combined with the complex logistics of issuing trap tags for up to seven areas, it may be possible for non-Massachusetts vessels to elect the LCMA OCC and acquire trap tags authorizing access to fish there with traps.

Enforcement Impacts

The circumstance described above, where a lobster permit holder can receive Federal authorization and be issued trap tags to fish in the LCMA OCC contrary to existing state law (and Addendum XII) and then be forced to forfeit those tags, is both confusing and frustrating for the affected dual permit holders and an added burden on law enforcement and the state and Federal administrative agencies that must implement the trap tag program.

Under Alternative 1, administration and enforcement of the LCMA OCC lobster fishery would likely become more onerous for state marine fisheries and law enforcement and Federal management and law enforcement. Dockside and on-the water enforcement may need to increase to confirm that traps in the water conform to the most restrictive measures in place. At the state level, Massachusetts enforcement officers, working dockside and on the water, would likely be most familiar with the OCC plan and thus

[97] The ISFMP, in Section 4.5 of Addendum XII, clearly supports this position and includes, as a compliance requirement, that "States will enact rules making it unlawful for any permit holder to order, possess or fish with trap tags designated for an LCMA not specifically authorized by a state in compliance with Plan amendments or addenda."

[98] As a policy matter, when a dual permit holder is denied trap tags by a state and NMFS subsequently authorizes the issuance of EEZ trap tags, NMFS notifies the appropriate state regulatory agency of the Federal action. NMFS also informs the tag recipient that: "*Regardless of the amount of trap tags purchased, Federal lobster regulations require Federal permit holders to abide by more the restrictive of either state or Federal trap limits. The mere issuance of a Federal trap tag does not necessarily override any enforceable state law that may be applicable to a Federal lobster permit holder with a state lobster license. Therefore, it is recommended that you contact [your state Fisheries agency] for further clarification on state lobster regulations and trap limits*." In situations where NMFS authorizes OCC trap tags for Massachusetts residents that did not qualify under the Massachusetts state program, it has been the Commonwealth's policy to notify the dual state and Federal permit holder not to purchase the tags; if tags are purchased, Massachusetts requires that they be forfeited or else the permit holder will lose their Massachusetts resident coastal lobster license or landing permit. It is possible that some unknown number of MA residents would chose to forfeit their Massachusetts state coastal lobster license or landing permit and attempt to land lobsters harvested in the Federal waters of the OCC in an adjacent state. In a case where an adjacent state does authorize landing permits, then increased on-the-water enforcement may be necessary to ensure traps were not set in Massachusetts state waters.

would be most likely to effectively enforce the more restrictive Massachusetts OCC limited-access measures. In contrast, at the Federal level, NMFS Office of Law Enforcement (OLE) officers, working primarily dockside, would likely be most familiar with the Federal lobster regulations and less familiar with Massachusetts lobster regulations that may differ from Federal regulations. The U.S. Coast Guard (USCG) would be the agency responsible for at-sea enforcement of Federal lobster regulations in the EEZ. With enforcement and oversight responsibilities over broad geographic areas, the USCG would likely be most familiar with the Federal OCC lobster regulations and may not be as familiar with the more restrictive Massachusetts OCC lobster regulations. In either situation, the ability to easily and effectively enforce uniform lobster regulations on the OCC would become more complicated, and likely require some unknown level of increased coordination and additional time required for verification of the permit/trap tag status of affected OCC lobstermen. Additionally, complicated and potentially conflicting regulations may allow for an increase in fisheries violations and additional fishing effort on the resource.

Trap Haul-Out Period: The ISFMP and Massachusetts state regulations specify that there be a lobster trap haul-out period or the LCMA OCC: "Fishermen shall be required to remove all lobster traps from waters of the OCC LCMA during January 15th through March 15th. It shall be unlawful for any fisherman to fish, set, or abandon any lobster traps in the OCC LCMA during this seasonal closure." (see Appendix 4, Addendum XIII, Section 4.1.6 Trap Haul-out Period). The ISFMP-specified trap haul-out provision is primarily intended to facilitate monitoring and enforcement of the LCMA OCC limited access program and verify that individual lobstermen are in compliance with their assigned trap allocations. As LCMA OCC lobster fishers return their traps to shore, each trap can be easily checked for a valid trap tag, and the LCMA OCC lobster permits can also be verified. Under Alternative 1, Federal regulations would not implement a trap haul-out period as specified in the ISFMP, resulting in additional enforcement impacts.

As discussed in earlier in this section, Federal permit holders are bound by the more restrictive of either state or Federal regulations. It is likely that enforcement of the trap haul-out period for dual permit holders residing in Massachusetts would be strictly enforced by the Commonwealth for all state residents in Massachusetts state waters. While it is unclear if Massachusetts regulations associated with the haul-out period for Massachusetts lobstermen would extend to the Federal waters of the LCMA OCC, the USCG's ability to easily and effectively enforce the ISFMP trap haul-out provision on the OCC would likely require some unknown level of increased coordination and additional time for verification of the permit/trap tag status of affected OCC lobstermen. Additionally, complicated and confusing regulations may allow for an increase in fisheries violations under Alternative 1.

Biological and Physical Impacts

The following section discusses the potential indirect biological and physical impacts to lobster, protected species, by-catch fish and bait fish from the LCMA OCC No Action alternative. Potential impacts would occur from the degree to which management measures under the status quo might lead to a change the number of traps in the water or their geographic location, including their concentration in any one area, which could affect the amount of effort (harvesting) within the fishery. Potential physical impacts relate primarily to the impacts that the placement of lobster traps on the ocean bottom could have on habitat.

Under No Action, all 3200+ Federal permit holders could elect the LCMA OCC and would be authorized to fish up to 800 traps each in Federal waters. Nonetheless, little change in terms of actual traps fished under this alternative is anticipated. In fact, as indicated in Table 4.2, above, though up to 136,000 traps could be authorized under the status quo, approximately 21,700 were actually fished in 2007. NMFS does not anticipate a significant change in the amount of effort under No Action from what was identified for 2007. Further, there are other factors that NMFS believes limits the increase in the number of traps fished within this area: geographically the LCMA OCC is predominantly a Massachusetts-based fishery; Massachusetts is the single dominate regulatory agency administering the ISFMP and strongly enforces

the most-restrictive rule; and, as stated before, the LCMA OCC is a highly territorial lobster trap fishery. Based on these factors, NMFS believes that the potential biological and physical impacts on lobster, protected species, by-catch fish and bait fish, discussed more fully below, will be negligible or minor.

Lobster

Biological Impacts

NEGLIGIBLE-TO-MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

Under Alternative 1, NMFS believes that the amount of lobster trap gear that may be set in the Federal waters of OCC may increase to some small unquantifiable degree, in part due to inconsistencies in trap tag administration, and that negligible-to-minor adverse impacts to the lobster fishery may occur as a result. Any increase in effort within the American Lobster fishery will add population pressure to lobster stocks within associated LCMAs. The biological stock area where this would be of most concern is Southern New England (SNE), which falls to varying degrees within all LCMAs, with the exception of LCMA 1. The SNE stock is identified as overfished, and additional fishing effort within the LCMA OCC would likely have a small but unquantifiable adverse effect on the ISFMPs SNE rebuilding objectives (for more information on stock status, see Section 1.1.1).

Physical Impacts

NEGLIGIBLE-TO-MINOR, ADVERSE, LONG-TERM, INDIRECT PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

While there have been few studies on the effect of lobster traps on the ocean floor, available information suggests trap gear, including the lobster traps used in the commercial lobster fishery, tend to have limited long term adverse impacts on the seafloor habitat, particularly when compared with mobile fishing gears such as trawls and dredges.

Impacts on the sea floor vary based on the composition of the substrate that the traps come to rest on. Under current practice, inshore lobster traps are hauled, re-baited, and then reset on the ocean bottom frequently, normally from one to three times a week. Frequent hauling in areas of dense vegetation, such as kelp beds and eelgrass, are more likely to result in some damage through rope entanglement or as traps are hauled up. Damage is most likely to occur through leaf shearing (cutting of leaves) and once sheared, the plant generally cannot regrow the lost portion of the leaf, although the plant can produce a new leaf from undamaged meristems. Rope entanglement may also result in seed or flower shearing, which may affect the next years' growth, and uprooting of the entire plant (ASMFC 2000b). However, even in areas of dense vegetation, the impacts are likely to be minor and of short duration. Since the substrate composition for the OCC is predominantly a sand-based or sand and gravel substrate, trap gear impacts are likely to be minimal, especially when compared to vegetated substrates.

The scientific evaluation of lobster and traps on attached epibenthic megafauna (sponges, soft corals, tube worms) in a European study showed no negative effect on the abundance of attached megafauna (Eno et al., 2001). The pressure wave created by pots as they sank was sufficient to bend sponges and soft coral away from the trap just before contact. Sponges and soft coral, after being covered by traps, took from four to six days to fully recover an upright position. Soft corals (Gorgonians) were frequently seen to bend under the weight of the traps, but then spring back once the traps were removed. When traps were dragged over the bottom they left tracks, but commercial trap gear appeared to have no negative effect on the abundance of attached benthic epifauna. In fact, uprooted sea pens frequently reinserted themselves

in the sediment, and many sponges significantly increased in abundance when compared to a test area where no fishing was allowed. Although individually trap impacts are minor, under current practice, traps are hauled, re-baited, and then reset on the ocean bottom frequently, normally from one to three times a week, therefore over time and increase in trap gear may result in negligible adverse direct impacts on lobster habitat under Alternative 1.

Another way to mitigate the adverse habitat impacts of trap gear, other than trap reductions, is to restrict gear size (ASMFC 2000b). The footprint or maximum size of a commercial lobster trap is regulated under state and Federal regulations. For Federal permit holders, beginning May 1, 2003, all American lobster traps deployed or possessed in any nearshore management area (Area 1, Outer Cape, Area 2, Area 4, Area 5, or Area 6) cannot exceed 22,950 cubic inches (376,081 cubic centimeters) in volume as measured on the outside portion of the trap, exclusive of the runners (see also Section 3.4).

Protected Species

MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED AS A RESULT OF THE SMALL (UNQUANTIFIABLE) INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 1-NO ACTION.

Several endangered species are susceptible to entanglement in fishing gear. Johnson et al. (2005), noted that any part of the trap gear (the buoy line, ground line, float line, and surface system line) creates a risk of entanglement. Many protected species exhibit feeding behavior that increase their susceptibility to entanglements. For instance, right whales spend a substantial amount of time feeding below the surface, or feeding by swimming continuously with their mouths open. They also roll and lift their flippers about the water's surface, behaviors that may add to entanglement risk, especially from vertical buoy lines and surface system lines. Humpback whales commonly use their mouths, flippers, and tails to aid in feeding. Thus, while foraging, all body parts are at risk of entanglement. Leatherback sea turtles seem to be the most vulnerable turtle to entanglement in fishing gear. This susceptibility may be a result of their body type (larger size, log pectoral flippers, and the lack of a hard shell), and their attraction to the gelatinous organisms and algae that collect on buoys and buoy lines at or near the surface.

As noted previously, over 95% of lobsters are harvested from lobster traps. Lobster traps may be set singly, each having its own surface line and buoy, or traps may be fished in trawls, normally of two-to-six traps per trawl in inshore areas, where multiple traps are linked together by ground lines, with surface lines and buoys or high flyers usually at the first and last traps of the trap trawl (Sainsbury, 1971). In general, larger off-shore vessels fish 20-40 strings of multiple traps; fishing practice by in-shore vessels can vary by state, but in general they tend to fish traps in smaller increments compared to the off-shore vessels. Implementation of Regulations mandating sinking ground line on all lobster trap gear, effective April 1, 2009, is intended to mitigate entanglements as animals forage along the bottom and come in contact with trap gear[99]. However, vertical lines that link the bottom-tending trap to the surface line(s) and buoy(s) continue to pose an entanglement risk to protected species.

The risk of entanglement of endangered species does increase if there is some small but unquantifiable increase in the level of trap fishing effort in the LCMA OCC under Alternative 1. In fact, due to the strategic geographic location of the LCMA OCC as a major transit area for the endangered right whales on their way to and from spring foraging grounds in Cape Cod Bay and in the Gulf of Maine and southern Canada, trap gear set in this management area is likely to pose a greater risk of entanglement than if the same quantity of gear was set in almost any other lobster fishing area. Therefore, under draft Alternative

[99] Interested and affected parties can find these regulations at 50 CFR 229.32 or at the whale plan website www.nero.noaa.gov/whaletrp/.

1, while any increase in trap fishing effort is likely to be very limited[100], any additional trap gear set in the LCMA OCC does increase the risk of entanglement.

Further, the ISFMP-specified Trap Haul-Out provision[101], primarily intended to facilitate monitoring and enforcement of the LCMA OCC limited entry program and verify that individual lobstermen are in compliance with their assigned trap allocation, would not be implemented under Alternative 1-No Action. Since right whales and other marine mammals are most frequently sighted further offshore in Federal waters as they transit the LCMA OCC, the lack of a complementary trap haul-out period in Federal waters under this alternative may result in a small but unquantifiable increased risk of entanglement.

It is likely that enforcement of the trap haul-out period for dual permit holders residing in Massachusetts would be strictly enforced by the Commonwealth for all state residents in Massachusetts state waters. Because state and Federal management programs would not be well-aligned in such circumstances, at-sea enforcement would likely be difficult logistically. As noted in Section 4.2, the U.S. Coast Guard would be the primary agency responsible for at-sea enforcement of lobster regulations in Federal waters of the LCMA OCC. With enforcement and oversight responsibilities over broad geographic areas, the ability to easily and effectively enforce the ISFMP trap haul-out provision on the OCC would become more complicated. Additionally, complicated and confusing regulations may allow for an increase in fisheries violations and increase the potential for entanglement.

By-Catch Fish

NEGLIGIBLE-TO-MINOR, ADVERSE, LONG-TERM, INDIRECT, BIOLOGICAL IMPACTS TO BY-CATCH FISH SPECIES WOULD BE EXPECTED AS A RESULT OF THE SMALL (UNQUANTIFIABLE) INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 1-NO ACTION.

The term “by-catch” refers to the unintentional landing and discarding of animals not specifically targeted by fishing vessels. As discussed earlier under management impacts, under Alternative 1-No Action, trap effort in the LCMA OCC may increase by some small but unquantifiable amount, in part due to the differential trap allocations and the potential that non-compatible administrative and enforcement processes may result in additional gear authorized in the LCMA OCC. However, the impact of what would be expected to be a small increase in the amount of trap gear fished in the OCC is likely to have negligible-to-minor, short-term impacts on by-catch species.

In general, the traps used in commercial lobster fisheries are among the more selective types of fishing gear. As a result, overall *levels* of by-catch in traps are low in lobster fisheries relative to other marine fisheries, and fish and invertebrates landed in traps are likely to be discarded with lower mortality rates than those landed with other gear types such as trawls and dredges (Davis 2002). The most common types of by-catch in lobster traps are juvenile lobsters and crabs. Types of fish occasionally caught in lobster traps include tautog, scup, black sea bass, cod, cusk, eels and flounder. A variety of invertebrates are found in and attached to lobster traps, including Jonah and rock crabs, red crabs, starfish, urchins, whelks and conchs (ASMFC 1997; Butler 2004; Miller 2005).

The discard mortality rates (the percentage of discarded animals that die) associated with animals caught in traps is low, particularly when compared against the mortality rates linked with mobile fishing gears such as trawls and dredges. In addition, if traps are lost, Federal lobster regulations mandate a

[100] Though speculative, this potential increase could occur given that, generically speaking, larger vessels fishing 20-40 strings tend to fish the off shore, while in-shore, the number of strings fished is more variable.
[101] See Appendix 4 - Addendum XIII - Section 4.1.6 Trap Haul-out Period.

biodegradable ghost panel, a rectangular opening not less than 3 3/4 inches (9.53cm) by 3 3/4 inches (9.53 cm) in the outer parlor of the trap, to allow lobsters and forage species to escape ghost gear (see §697.21(d)(1)). The number of animals that die after being caught and discarded in the American lobster fishery appears small compared to actual lobster landings.

Bait Fish

NEGLIGIBLE-TO-MINOR, ADVERSE, LONG-TERM, INDIRECT IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED AS A RESULT OF THE SMALL (UNQUANTIFIABLE) INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 1-NO ACTION.

Bait is used in lobster traps to attract lobsters into the trap and is an important component of the lobster fishery. It has been estimated that 50-60,000 tons of bait are used in the U.S. lobster fishery annually. The species used as bait in lobster traps varies by geographic location, and price is a major factor when selecting lobster bait. Often, lobstermen have specific preferences for their preferred bait, but Atlantic herring is the major species used by volume. In Maine, herring comprises nearly 90% of the bait used, with fish such as menhaden, alewives, and redfish making up the remaining 10%.

In addition to herring, species such as skates are frequently used in lobster traps as bait, especially south of Cape Cod and in the offshore lobster fishery. Landings of skate, for human consumption and bait needs, have remained relatively steady in recent years, averaging approximately 15,000 tons a year since 2001. Lobstermen also make use of fish frames, the body and skeleton that remain after the edible portion of meat is removed. The type of fish frames used as bait varies considerably by season and geographic location, but generally includes redfish, flatfish, and other groundfish species. Generally, fresh fish is the preferred bait over frozen fish, but when supplies of fresh bait are low, frozen fish, mainly frozen herring, is a frequent substitute for fresh bait.

As stated above, under Alternative 1-No Action the number of traps fished in the LCMA OCC may increase by some small but unquantifiable amount. If trap fishing effort increases, there would be a proportionate increase in the use of lobster bait. In the LCMA OCC, a variety of bait is used, including herring, skates, and fish frames. Given the total volume of bait fish used in the U.S. American lobster trap fishery, however, any adverse impacts associated with increased bait demand would be minor.

4.2.2 Alternative 2 – Commission Alternative (Preferred Alternative)

Under this alternative, four significant impacts to the LCMA OCC Federal American Lobster fishery would occur:

1. The number of Federal permit holders would be capped in accordance with qualification criteria approved by the Commission under Addenda XII and XIII. To fish within LCMA OCC, permit holders would have to first qualify for an allocation, eliminating the practice of simply “electing,” or “checking off” the LCMA on their annual permit applications;

2. The total number of traps allocated would be capped at a level based on the historical fishing practices of those fishers who are determined to qualify for the LCMA OCC. This trap cap will establish a new limit for fishing effort within this LCMA.

3. Fisheries management information in the LCMA OCC becomes more accurate. More accurate information on the number of participants and trap fishing effort will result from accurately accounting for who is fishing in the LCMA OCC (through step 1, “qualification”) and how many traps are being used (through step 2, “allocation”).

4. The development of a joint state-Federal Individual Transferable Trap (ITT) Program in the LCMA OCC becomes possible. Completion of the qualification and trap allocation steps, and the resultant ability to accurately identify participants and their individual trap allocations, creates a baseline of information, without which an ITT program cannot occur.

Regulatory Impacts

MAJOR, BENEFICIAL, LONG-TERM, DIRECT, REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

Compatibility with ASMFC-Approved Measures

Alternative 2 would implement management measures for the American Lobster fishery that are compatible with already-approve ASMFC measures. Inconsistencies between state-Federal lobster management (see Section 3.1), while not entirely eliminated, would become more manageable due, in part, to the more accurate accounting of fishing effort within the LCMA under Alternative 2. These issues are discussed in more detail below.

Management Impacts

In terms of management of the American Lobster fishery, a number of beneficial, long-term, direct impacts are expected to occur under Alternative 2. Under this alternative, the ambiguity between what is true "on paper" versus what is actually occurring (the "dual reality" discussed in Section 3.2) is substantially reduced. Because only those permit holders who have a demonstrated history of actually fishing within the LCMA OCC will initially qualify for an allocation of traps, the "inflated" numbers found under an open access program will disappear. As a result, resource managers will have a better understanding of who is fishing and how many traps are being used and this will allow them to better manage the overall level of effort in the fishery along with the overall protection of the resource.

Further, the potential disconnects between the state and Federal management of dual permit holders will likewise be substantially reduced. Because state and Federal identification of qualified fishers and allocated traps would "match up," no longer will there be a potential, for example, for a dual permit holder to be legally prohibited from fishing in the LCMA OCC under state law while technically still being legally authorized to fish in Federal waters of the LCMA OCC.

Similar to the effect on the number of qualified permit holders, Alternative 2 will also substantially reduce the "inflated" numbers of allocated pots that occurs under the current management program. For example, a Federal limited access program in the LCMA OCC would result in approximately 26 qualifiers fishing approximately 13,000 traps maximum (Table 4.2). In contrast, under the No Action alternative, anywhere from 170 permits (based upon 2007 data), to 225 permits (based upon 2004 data) to over 3000 permits (based upon total Federal permits) could be fishing up to 800 traps per permit – meaning that managers would have to assume that anywhere from 136,000 traps (170 permits x 800 traps) to 2,400,000 traps (3000 permits x 800 traps) could be fished in any given year. As stated before, because an individual designates the LCMA OCC on their permit and purchases trap tags does not necessarily mean that the individual is fishing in the LCMA or fishing with all possible traps, and further, NMFS has no expectation that all 3200+ permit holders would designate the OCC on their Federal permit. Nonetheless, under an area-specific limited access program, fishery resource managers can better calculate the level of effort within the fishery (measured by traps fished) when compared to the current management program and it is believed that this information will allow managers to more easily and precisely respond to future threats to the resource.

Administrative Impacts

Effective coordination and consistent measures across state and Federal jurisdictions would prevent the issuance of trap tags to Federal lobster vessels that did not qualify under a Federal qualification/allocation process based on the criteria specified in the ISFMP. As specified in the MOU, "Federal management regulations for American lobster under 50 CFR Part 697.4(d)(2) authorize the Regional Administrator, by Agreement with state agencies, to allow trap tags issued by those agencies to be used and recognized as valid Federal lobster tags in compliance with Federal lobster management regulations." Issuance of OCC Federal trap tags to Federally non-qualified OCC permit holders would not be in accordance with the Federal management regulations under draft Alternative 2, and would not then be in accordance with any existing trap tag MOU.

Trap Haul-Out Provisions: The coordinated implementation of the ISFMP would also allow for more effective implementation of the ISFMP-specified LCMA OCC Trap Haul-Out Provision. This provision requires all qualified Federal permit holders electing the LCMA OCC to remove their fixed gear as follows: "Fishermen shall be required to remove all lobster traps from waters of the LCMA OCC during January 15th through March 15th. It shall be unlawful for any fisherman to fish, set, or abandon any lobster traps in the LCMA OCC during this seasonal closure." (see Appendix 4, Addendum XIII, Section 4.1.6 Trap Haul-out Period) Under Alternative 2, 3 out of the 26 permit holders qualified selected one or more LCMAs in addition to the LCMA OCC (Table 4.2). Since NMFS is aware of no state other than Massachusetts that has qualified its permit holders under a state OCC program based upon the ISFMP criteria, and Massachusetts dual permit holders are already bound to abide by the Trap Haul-out Period, NMFS believes there will be no additional adverse impacts on those Federal permit holders selecting one or more LCMAs, in addition to LCMA OCC, on their federal permit, when they are prohibited from fishing with traps in any LCMA during the OCC-specified trap haul-out period.

Enforcement Impacts

Alternative 2 is expected to have beneficial impacts in terms of program enforcement, due simply to the fact that the absence of those disconnects discussed above and in 3.1, will be reduced. In particular, because the state-Federal management of dual permit holders and their allocations will no longer be poorly aligned, the need for more on-the-water enforcement to confirm the number of traps being placed there would be reduced.

Further, NMFS is aware that a small but unquantifiable number of dual permit holders may be affected by differential state and Federal trap allocations. When differences in allocations occur, the ISFMP specifies that the more restrictive trap allocation shall apply. In the case of the LCMA OCC, due to the geographic location, single state agency administering the tags, cooperative administration and enforcement will more likely be enhanced.

Biological and Physical Impacts

The following section discusses the potential indirect biological and physical impacts to lobster, protected species, by-catch fish and bait fish from the LCMA OCC Alternative 2-Commission Alternative. Potential impacts would occur from the degree to which management measures under this alternative might lead to a change the number of traps in the water or their geographic location, including their concentration in any one area, which could affect the amount of effort (harvesting) within the fishery. Potential physical impacts relate primarily to the impacts that the placement of lobster traps on the ocean bottom could have on habitat.

Under Alternative 2, little change in the amount of effort (i.e., traps in the water) is anticipated because participants would be qualified and traps would be allocated based on historical fishing practices. Also significant is that the shift from the status quo to a limited access program under this alternative would substantially reduce the amount of potential latent effort within this fishery. This is evident in the difference between the number of traps allocated compared with the number of traps fished seen in Table 4.2 under each option: for Alternative 1-No Action, the difference exceeds 100,000 traps; for Alternative 2-Commission Alternative, the difference is minor (less than 200). As a result, NMFS believes in general that the indirect biological and physical impacts from the management measures proposed under this option, discussed more fully below, on lobster, protected species, by-catch fish and bait fish will negligible or minor.

Lobster

Biological Impacts

MINOR, BENEFICIAL, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

Under Alternative 2, minor beneficial biological impacts on lobster are expected because a joint state-Federal program would more effectively cap and enforce both the number of lobster vessels fishing in the LCMA OCC, as well as the number of lobster traps authorized to fish there when compared to the status quo. Furthermore, because Alternative 2 would allow only qualified permit holders to elect the LCMA OCC on both their state and Federal licenses and those qualifiers would be allowed to purchase trap tags only up to their historic participation level, latent effort would be substantially reduced relative to the status quo. Under Alternative 2, there would be little or no difference in the correct number of OCC trap tags to issue, since both state and Federal trap allocations would be compatible for the majority, if not all, dual permit holders.

Physical Impacts

MINOR, BENEFICIAL, LONG-TERM, INDIRECT PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

While there have been few studies (Eno et al, 2001) on the effect of lobster traps on the ocean floor, available information suggests trap gear, including the lobster traps used in the commercial lobster fishery, tend to have limited long-term adverse impacts on the seafloor habitat, particularly when compared with mobile fishing gears such as trawls and dredges. Frequent hauling in areas of dense vegetation are more likely to result in some damage through rope entanglement, however, even in areas of dense vegetation, the impacts are likely to be minor and of short duration. Since the substrate composition for the OCC is predominantly a sand based or sand and gravel substrate, trap gear impacts on kelp and eelgrass vegetation is likely to be minimal. Furthermore, since this alternative would cap effort at historical levels, and possibly reduce effort in the future through the elimination of potential traps, benefits to the benthic environment may result by limiting the potential number of traps that could be fished.

Another way to mitigate the adverse habitat impacts of trap gear, other than trap reductions, is to restrict gear size (ASMFC 2000b). The footprint or maximum size of a commercial lobster trap is regulated under state and Federal regulations (see also Section 3.4).

Protected Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

Under Alternative 2, a number of factors will reduce the potential for additional traps in the water, producing minor beneficial impacts on protected species as a result. First, while all of the LCMA OCC alternatives could trigger latent effort, under Alternative 2 the amount of potential latent effort is the smallest and thus the threat from additional vertical lines in the water is reduced relative to the status quo. Second, through enhanced administrative and regulatory coordination, the Federal issuance of trap tags will be better-aligned with the smaller number of state trap tags issued under this alternative (see Table 4.2). All jurisdictions would be bound under the state-Federal Trap Tag MOU to restrict trap fishing access only to dual permit holders that are qualified to fish in the OCC. Third, coordinated state-federal enforcement would be consistent in application, both dockside and at-sea, and draft Alternative 2 would reduce the admittedly limited likelihood of increased trap fishing effort that might occur under the status quo (Alternative 1).

Finally, the coordinated implementation of the ISFMP-recommended Trap Haul-Out Provision, as referenced above, may provide minor positive benefits to protected species by requiring all lobstermen that elect the LCMA OCC on their Federal lobster permit to remove their fixed gear during certain periods of the year, thereby reducing the threat of entanglement for protected species. Since Massachusetts dual permit holders are already bound to abide by the Trap Haul-out Period, there are expected to be no additional adverse impacts on Federal permit holders selecting one or more LCMAs in addition to the OCC on their federal permit when they are prohibited from fishing with traps in any LCMA.

By-Catch Species

NEGLIGIBLE–TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO BY-CATCH FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

Under Alternative 2, a number of factors will reduce the potential for additional traps in the water, producing minor beneficial impacts on by-catch species as a result. First, while all of the LCMA OCC alternatives could trigger latent effort, under Alternative 2 the amount of potential latent effort is the smallest and thus the potential increase in the amount of by-catch relative to the status quo is reduced. Second, through enhanced administrative and regulatory coordination, the Federal issuance of trap tags will be better-aligned with the smaller number of state trap tags issued under this alternative (see Table 4.2), again reducing the potential number of traps in the water relative to the status quo. All jurisdictions would be bound under the state-Federal Trap Tag MOU to restrict trap fishing access only to dual permit holders that are qualified to fish in the OCC. Third, coordinated state-federal enforcement would be consistent in application, both dockside and at-sea, and draft Alternative 2 would reduce the admittedly limited likelihood of increased trap fishing effort that might occur under the status quo (Alternative 1).

Finally, the coordinated implementation of the ISFMP recommended Trap Haul-Out Provision, as referenced above, may provide minor positive benefits to by-catch species by requiring all lobstermen that elect the LCMA OCC on their Federal lobster permit to remove their fixed gear, resulting in a proportionate reduction in by-catch for this fishery.

Bait Fish Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE 2.

Under Alternative 2, a number of factors will reduce the potential for additional traps in the water, producing minor beneficial impacts in terms of reduced demand for bait fish species as a result. First, while all of the LCMA OCC alternatives could trigger latent effort, under Alternative 2 the amount of potential latent effort is the smallest and thus the potential increase in the demand for bait fish relative to the status quo is reduced. Second, through enhanced administrative and regulatory coordination, the Federal issuance of trap tags will be better-aligned with the smaller number of state trap tags issued under this alternative (see Table 4.2), again reducing the number of traps in the water relative to the status quo. All jurisdictions would be bound under the state-Federal Trap Tag MOU to restrict trap fishing access only to dual permit holders that are qualified to fish in the OCC. Third, coordinated state-federal enforcement would be consistent in application, both dockside and at-sea, and draft Alternative 2 would reduce the admittedly limited likelihood of increased trap fishing effort that might occur under the status quo (Alternative 1), thereby potentially decreasing the demand for bait fish. While any reduction in traps would result in a beneficial reduction in the demand for bait-fish species, NMFS believes such reductions under this alternative would be negligible when compared to total demand for bait in the U.S. lobster trap fishery.

4.2.3 Alternative 3 – Qualify Only Alternative

Similar to Alternative 2, the following significant impacts to the Federal American Lobster fishery in the LCMA OCC would occur under Alternative 3-Qualify Only:

1) The number of Federal permit holders would be capped in accordance with qualification criteria approved by the Commission under Addenda XII and XIII. To fish within LCMA OCC, permit holders would have to first qualify for an allocation, eliminating the practice of simply “electing,” or “checking off” the LCMA on their annual permit applications;

2) Fisheries Management Information in OCC becomes more accurate. More accurate information on the number of participants will result from accurately accounting for who is fishing in the LCMA OCC (through step 1, “qualification”).

In general, this alternative reflects a compromise between absolute consistency with the Commission-approved Limited Access Program and the realization that consistency on all aspects of the program and between all state/Federal jurisdictions involved may not be possible. In terms of qualifying permit holders to fish in the LCMA OCC, for example, the process provided under Alternative 3 is identical to Alternative 2. In terms of the number of traps allocated to qualified fishers, however, Alternative 3 would maintain the status quo: all Federal permit holders qualifying for an allocation will be allowed to fish up to 800 traps. As discussed earlier, because states may have interpreted the ISFMP criteria for allocating traps to qualified fishers differently than NMFS, NMFS is considering the benefits of maintaining the uniform Federal allocation of 800 traps currently in place.

Regulatory Impacts

ALTERNATIVE 3 — QUALIFY-ONLY HAS BOTH MINOR, BENEFICIAL, LONG-TERM, DIRECT REGULATORY IMPACTS AS WELL AS MODERATE, ADVERSE, LONG-TERM DIRECT REGULATORY IMPACTS.

Compatibility with ASMFC-Approved Measures

In terms of qualifying fishers for an allocation within the LCMA OCC, Alternative 3 would implement management measures for the American Lobster fishery that are identical to those already passed by the Commission and, as such, would be compatible with ASMFC-approved measures. Because under this alternative permit holders must first qualify into the fishery (the same as they must under Alternative 2), some benefits in terms of defining total effort in an LCMA are realized that will be helpful to resource managers by allowing them to more easily and precisely respond to future threats to the resource.

At the same time, however, differences between state and Federal trap allocations, most notably amongst dual permit holders, will likely continue. These differences will allow the disconnects between state and Federal lobster management described under Alternative 1 (status quo) to also continue and effective management of the lobster fishery thus will be similarly difficult to achieve. For example, under Alternative 3, 26 Federal permit holders could fish up to 800 traps in the Federal waters of the OCC; under the state program, some if not most of those same qualifiers received a different allocation, resulting in a 7000+ trap allocation difference between these programs (Table 4.2). Effective state administration of tag issuance under the Most Restrictive Rule is likely to mitigate inconsistencies and help guide permit holders. However, in the unlikely event lobstermen do qualify from other states, it is unclear if there would be the same level of effective enforcement of the Most Restrictive Rule.

Further, as with Alternative 1-No Action, an ITT program in Federal waters would not occur under Alternative 3 because the necessary preceding step— allocating traps using Commission-approved criteria—would not take place.

Administrative Impacts

The administrative impacts of Alternative 3 are similar to Alternative 1 (status quo). As with Alternative 1, trap tag purchases would be somewhat more complicated to administer in situations where a dual permit holder with a more restrictive state trap allocation is held to the lower state imposed trap limit in state waters. Under this scenario, it is possible that dual permit holders may subsequently request authority from NMFS to purchase trap tags in excess of their state trap allocation up to the Federal Alternative 3 trap cap of 800 traps. That said, NMFS believes that these impacts would be minimal, should they occur, given that Massachusetts is the single primary state trap allocation authority in the LCMA OCC and effective state enforcement of a lower state trap allocation is more likely on the Outer Cape due to its geographic isolation.

Trap Haul-Out Provisions: Under Alternative 3, a limit on the number of qualified Federal participants would allow for more effective implementation of the ISFMP-specified LCMA OCC Trap Haul-Out Provision requiring all qualified Federal permit holders electing the LCMA OCC to remove their fixed gear as specified: "Fishermen shall be required to remove all lobster traps from waters of the LCMA OCC during January 15th through March 15th. It shall be unlawful for any fisherman to fish, set, or abandon any lobster traps in the OCC LCMA during this seasonal closure." (see Appendix 4, Addendum XIII, Section 4.1.6 Trap Haul-out Period). Since Massachusetts dual permit holders are already bound to abide by the trap haul-out period, there are expected to be no additional adverse impacts on Federal

permit holders selecting one or more LCMAs, in addition to LCMA OCC, on their federal permit, when they are prohibited from fishing with traps in any LCMA during the OCC-specified trap haul-out period.

Enforcement Impacts

The enforcement impacts of Alternative 3 are largely identical to Alternative 1-No Action. While the number of vessels authorized under both state and Federal authority would be compatible, differences in trap allocations would require additional enforcement coordination by all affected jurisdictions to ensure that vessels did not exceed the more restrictive trap limit authorized under the state program. Additionally, if vessels with a lower state trap allocation subsequently petition NMFS for their full complement of 800 trap tags and in excess of their state allocation, increased enforcement would be necessary to ensure vessels are not exceeding the most restrictive trap limit authorized.

Although a limit on the number of qualified Federal participants would allow for more effective implementation of the ISFMP-specified LCMA OCC Trap Haul-Out Provision, enforcement coordination would be likely need to increase to ensure compliance by federal vessels.

Biological and Physical Impacts

The following section discusses the potential indirect biological and physical impacts to lobster, protected species, by-catch fish and bait fish from the LCMA OCC Alternative 3-Qualify Only Alternative. Potential impacts would occur from the degree to which management measures under this alternative might lead to a change the number of traps in the water or their geographic location, including their concentration in any one area, which could affect the amount of effort (harvesting) within the fishery. Potential physical impacts relate primarily to the impacts that the placement of lobster traps on the ocean bottom could have on habitat.

Under this alternative, little change in the amount of effort (i.e., traps in the water) is anticipated. The number of participants qualified would be allocated based on historical fishing practices and it is assumed that the number of traps fished would be approximately the same as shown for 2007 (Table 4.2). This alternative would also substantially reduce the amount of potential latent effort within the OCC fishery. This is evident in the difference between the number of traps allocated compared with the number of traps fished seen in Table 4.2 under each option: for Alternative 1-No Action, the difference exceeds 100,000 traps; for Alternative 3-Qualify Only, the difference is minor. As a result, NMFS believes in general that the indirect biological and physical impacts from the management measures proposed under this option, discussed more fully below, on lobster, protected species, by-catch fish and bait fish will negligible or minor.

Lobster

MINOR, BENEFICIAL, LONG-TERM, INDIRECT BIOLOGICAL AND PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

Relative to the status quo, Alternative 3-Qualify Only provides some but not all of the benefits of Alternative 2 in terms of defining total effort in an LCMA. Because permit holders must first qualify into the fishery, the number of participants is capped at historical levels and latent effort is thereby substantially reduced. Trap allocations are not similarly capped, however, (i.e., based on historical fishing effort), and hence the same reductions in fishing effort are not realized relative to Alternative 2. Under Alternative 3, it is more likely dual qualifiers would have different state and Federal trap allocations within the LCMA OCC.

Biological Impacts

Overall, the potential impacts on American Lobster resources are marginally more beneficial under this option to those described under Alternative 1-No Action. Under Alternative 3, Federal measures would limit the total number of vessels that may fish up to the Federal trap cap (800 traps) while Alternative 1 would not. Further, the number of traps fished under Alternative 3 may be lower than Alternative 1, since Alternative 1 continues to allow all Federal permit holders to fish up to 800 traps and allows all Federal permit holders open access to elect to fish in the OCC LCMA.

Physical Impacts

Similarly, the potential impacts on habitat and benthic fauna are marginally more beneficial under this option compared to Alternative 1–No Action, given the potential for a small decrease in the number of traps fished (described above). While there have been few studies on the effect of lobster traps on the ocean floor, available information suggests trap gear, including the lobster traps used in the commercial lobster fishery, tend to have limited long term adverse impacts on the seafloor habitat, particularly when compared with mobile fishing gears such as trawls and dredges. Frequent hauling in areas of dense vegetation, such as kelp beds and eelgrass, are more likely to result in some damage through rope entanglement or as traps are hauled up. However, even in areas of dense vegetation, the impacts are likely to be minor and of short duration. Since the substrate composition for the LCMA OCC is predominantly a sand-based or sand and gravel substrate, trap gear impacts on kelp and eelgrass vegetation are likely to be minimal.

Protected Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY-ONLY.

Potential impacts on protected resources are marginally more beneficial under this option compared to Alternative 1–No Action, given the possibility for a small decrease in the number of traps fished (described above), which would in turn reduce the number of vertical lines in the water that present a threat of entanglement for protected species. The number of vessels fishing and traps fished in the LCMA OCC under Alternative 3 may be lower than Alternative 1, since Alternative 1 continues to allow all Federal permit holders to fish up to 800 traps and allows all Federal permit holders open access to elect to fish in the LCMA OCC. Under Alternative 3, Federal measures would limit the total number of vessels that may fish up to the Federal trap cap (800 traps) while Alternative 1 would not.

The ISFMP-recommended Trap Haul-Out Provision may also provide minor positive benefits to protected species by requiring all lobster fishers who elect the LCMA OCC on their Federal lobster permit to remove their fixed gear, thereby reducing the threat of entanglement for protected species: "Fishermen shall be required to remove all lobster traps from waters of the OCC LCMA during January 15th through March 15th. It shall be unlawful for any fisherman to fish, set, or abandon any lobster traps in the OCC LCMA during this seasonal closure" (See Appendix 4 - Addendum XIII — Section 4.1.6 Trap Haul-out Period).

By-Catch Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO BY-CATCH FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3 – QUALIFY- ONLY.

Overall, the potential impacts on by-catch species are likely to be marginally more beneficial under this alternative compared to Alternative 1 – the No Action Alternative, since the number of vessels fishing and traps fished in the LCMA OCC may be lower. Any reduction in traps fished would provide a proportionate and beneficial reduction in by-catch for the fishery, though this benefit would likely be small.

Bait Fish Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3 — QUALIFY-ONLY.

As with by-catch species, the potential impacts on bait fish species under Alternative 3 are likely to be marginally more beneficial when compared to Alternative 1–No Action because the number of vessels fishing and the number of traps fished in the LCMA OCC may be lower. Any reduction in traps fished would provide a proportionate and beneficial reduction in demand for bait fish for the fishery, though this benefit would likely be small relative to the total demand for bait fish in the U.S. lobster trap fishery.

4.3 LCMA 2 Alternatives

In broad terms, the overall effects of the limited access program alternatives in LCMA2 are similar to those described for the LCMA OCC above: better accounting of who is actually fishing within the management area and a trap allocation that will cap future fishing effort, both of which will set the stage for an ITT program (to be evaluated in Section 4.4, below).

In other ways, however, there are important differences that would occur under a limited access program in LCMA 2 compared with the LCMA OCC. First, among the most significant difference is the geographic representation by the fishers: whereas the LCMA OCC is predominantly (and, under its Alternatives 2 & 3, likely exclusively) a Massachusetts-based fishery (See Table 4.2), LCMA2 is truly multi-state, with Massachusetts and Rhode Island sharing strong positions in its geographic make-up. The regulatory complications that surround efforts to manage the lobster fishery in this multi-state setting thus become even more pronounced relative to what was seen in LCMA OCC. These complications are discussed more fully below.

Second, in addition to being geographically more diverse, LCMA 2 also has a much larger fishery, both in terms of numbers of participants and the number of traps fished, than the LCMA OCC. Its larger size means that proportionate changes to characteristics such as number of traps allocated under a limited access program will also be more pronounced than in the LCMA OCC; in other words, a 3% difference in traps allocated between the LCMA2 alternatives (an already large fishery) may have greater impacts on, for example, biological resources, than a 3% difference in traps allocated between the LCMA OCC alternatives (already a relatively small fishery to begin with).

Keeping these characteristics in mind, the potential impacts of the limited access alternatives for LCMA 2 are evaluated below.

Table 4.3 - LCMA 2 - Comparison of # of Permits & Traps by Alternative

		Alternative 1 No Action (Status Quo) '07 data		Alternative 2 Commission Alternative		Alternative 3 Qualify Only	
Vessel/Permit #s		Elected	Purchased	Qualified	Purchased	Qualified	Purchased
	MA	176	51	72[1]	51	72[1]	51
	RI	169	112	128	112	128	112
	CT	16	1	4	1	4	1
	NY	42	7	3[2]	3[3]	3[2]	3[3]
	NJ	28	11	0[4]	0[4]	0[4]	0[4]
	Total	431	182	207	167	207	167
Allocation/# of Traps		Allocated	Fished	Allocated	Fished	Allocated	Fished
	MA	140800	29071	31839	29071	57600	40800
	RI	135200	79870	88352	79870	102400	89600
	CT	12800	800	3200	800	3200	800
	NY	33600	5250	2400	2400[3]	2400	2400
	NJ	22400	8425	0	0	0	0
	Total	344800	123416	125791	114991	165600	133600

1 Massachusetts qualified 149 in total, of which 77 received zero allocations because they did not have the fishing history. Using the Commission-approved qualification criteria, therefore, NMFS would not qualify the 77, which makes for a total here of 72 who would qualify.
2 Based on '08 numbers, because of New York's qualification of permit holders in 2008.
3 State data shows that nine permit holders actually bought trap tags in '08, however, NMFS is assuming that only the three qualifiers under these alternatives would be approved for trap tag purchases in the future.
4 Under alternatives 2 & 3, zero qualified in New Jersey because a preliminary review showed no landings in states adjacent to LCMA2. (This review used best-available Federal data)

Table 4.3 shows 1) the projected number of permit holders (either elected or qualified, depending on the alternative) versus the number of permit holders purchasing trap tags (as a proxy for those actually fishing) and 2) traps allocated versus traps fished under the three alternative scenarios analyzed for the LCMA OCC.

For Alternative 1–No Action (status quo), it is assumed that current conditions under the LCMA2 will continue, more or less, and that the most recent data (2007) provides the best projection for the number of permit holders that will *elect* to fish within this LCMA under this scenario. Trap tag data showing the number of permit holders buying trap tags (2007) is used as a proxy for the number of permit holders *actually fishing* (since, as stated previously, the fact that a permit holder has "elected" an area does not mean they actually fished there). Under this alternative, the number of traps *allocated* was derived by multiplying the number of traps allowed under a Federal permit – 800 traps – by the number of those "electing" to fish. The number *"fished"* is based on trap tag data.

For both Alternative 2–Commission Alternative and Alternative 3–Qualify Only, the Commission-approved criteria was used to project the number of Federal permit holders that would *qualify* for an allocation of traps within this LCMA.[102] Under Alternative 2-Commission Alternative, *allocated* trap numbers were derived in accordance with Commission-approved criteria spelled out under Addenda VII and XII.

For Alternative 3-Qualify Only, the number of traps *allocated* was derived by multiplying the number of traps allowed under a Federal permit – 800 traps – by the number of those Federal permit holders projected to qualify to fish in LCMA 2.

Based on the findings in Table 4.3, above, the following observations can be made:

- In shifting from the status quo (where any permit holder can elect to fish the area) to an area-specific limited access fishery within Federal waters of LCMA 2, "accounting" of what is taking place within the fishery becomes more accurate in two important ways: *first*, the number of permit holders actually fishing within Area 2 becomes more accurate (as evidenced by the smaller gap between "qualified" permit holders and those purchasing trap tags when compared to the gap between those permit holders "electing" to fish (but not necessarily fishing) and those purchasing trap tags under current Federal regulations); *second*, the number of traps actually being fished (i.e., effort) would also become more accurate, as the gap between the number of traps initially allocated to qualified fishers and those actually fished would become far more narrow than the gap between traps allocated to those "electing" to fish and traps actually fished under current regulations and Alternative 1 (Table 4.3).

- The number of traps allocated within Federal waters of the LCMA 2 shrinks significantly when shifting from the status quo to an area-specific limited access program: by 63% and 52% for Alternatives 2 and 3, respectively.

- In addition to a reduction in allocated traps, the data indicate that the number of Federal vessels that would qualify under a limited access program also shrinks substantially—from 431 under Alternative 1 (status quo) to 207 under Alternatives 2 and 3. Unlike the LCMA OCC, where geographical characteristics and the expense and time required to transit to the area tend to limit participation, Area 2 has multiple state jurisdictions involved and almost eight times the number of estimated qualifiers.

[102] See Section 4.1-Data and Documentation, for a discussion of data sources used in this analysis.

- Under a limited access program, Massachusetts and Rhode Island will more clearly be the dominant players within LCMA2. Though the data indicate that 28 Federal permit holders from New Jersey currently elect Area 2 on their Federal lobster permit (Table 4.3), a preliminary review of the landings history for these permit holders indicate that none of them landed lobster in a state adjacent to Area 2 (MA/RI/CT/NY), as specified in the ISFMP (see Appendix 2, Addendum VII, Section 4.2.1.1). As a result, these vessels do not appear to qualify in Area 2 under a limited access program based on the Commission-approved criteria.

Keeping these basic findings in mind, the following discussion analyzes the potential regulatory, biological, economic, and social impacts of the three proposed alternatives for the LCMA 2.

4.3.1 Alternative 1-No Action

Regulatory Impacts

This section addresses potential regulatory impacts associated with Alternative 1-No Action for the LCMA 2. Potential regulatory impacts would be from the degree to which the proposed measures are compatible with the ASMFC-passed measures under Addendum XII, currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

MODERATE-TO-MAJOR, ADVERSE, LONG-TERM, DIRECT REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

Under this alternative, no Federal limited access program would be enacted in LCMA 2. As such, Federal lobster management in this management area would remain as is and the following actions would continue:

1. Owners of any fishing vessel with a federal permit could designate and fish in the federal portion of the LCMA 2[103] under Federal regulations; and

2. Owners of any fishing vessel designating the LCMA 2 on their Federal permit could fish up to 800 traps under Federal regulations.

Compatibility with ASMFC-Approved Measures

Alternative 1-No Action would deviate from measures outlined in the Commission's ISFMP and associated state regulations in two significant ways.

1. States would follow the Commission-approved plan to cap effort in state waters based on fishing history while, in the Federal fishery, the option for the universe of 3200+ Federal permit holders to elect the OCC on an annual basis, regardless of their fishing history, (each with an 800 trap allocation) would continue.

[103] Federal permit holders renew their Federal permits annually. When they do so, they can designate (i.e., choose) any or multiple LCMAs on that permit for the coming year (in those LCMAs with Federal limited entry programs – i.e., LCMA 3, 4 and 5 – the permit holder must have previously qualified for entry in order to choose such an LCMA). In other words, Federal permit holders start each fishing season with a blank slate for a Federal permit on which they can pick and choose the LCMA or LCMAs in which they are going to fish. Once they choose, however, they are bound by that designation for the remainder of the fishing year.

2. Under Alternative 1-No Action an ITT program in Federal waters would not occur because the necessary preceding steps—qualify and allocate—would not take place. As a result, the economic, biological, and social benefits of a unified Federal-state ITT program, describe in Section 4.4 below, would not occur.[104]

By definition, Alternative 1 rejects the implementation of compatible regulations and, in so doing, rejects efforts by the Commission to cap effort. Further, Alternative 1-No Action could be viewed by Commission states as a refutation of the cooperative principles upon which lobster management is based. While nothing in the Atlantic Coastal Act or ISFMP Charter obligates the Federal government to rote adherence to every aspect of the Commission's Lobster Plan (and there have been past occasions where NMFS rejected a Plan recommendation or added a measure that was not recommended), never has NMFS refused a core element of a Commission LCMA plan or failed to implement a whole addendum.[105] Alternative 1-No Action thus would likely frustrate Commission states that consider a Federal LCMA 2 limited access plan as being a necessary component to the effective implementation of their state LCMA 2 plan.

As a result of these differences between Federal and state programs, management, administrative and enforcement objectives would become more difficult to achieve, as described below:

Management Impacts

Under Alternative 1- No Action, the difficulties in managing a shared, but unaligned, state-Federal program for the American Lobster fishery will continue (see Section 3.1 for a discussion of these difficulties). These difficulties result in management impacts for the LCMA 2 fishery that are similar in nature to those described under the LMCA OCC No Action alternative, however, because this fishery has eight times as many potential qualifiers from at least four states, management issues become even more complicated under No Action.

For example, because it is a relatively large and geographically diverse fishery, participation in the LCMA 2 is very sensitive to changing regulatory conditions within the American Lobster fishery at large. For example, Federal permit data shows that the number of lobster fishers electing to fish in the LCMA 2 declined by 23% over the 8-year period from 2000-2007 (Table 3.6). While there could be many reasons for this overall decline, the most likely explanation is that fishers shifted their effort within all of the LCMAs once the Most Restrictive Rule was implemented and, in the case of Massachusetts, permit holders were required to designate only one LCMA on their permit. Under Alternative 1-No Action, because all 3200+ Federal permit holders for American Lobster would continue to have the regulatory freedom to elect LCMA2 on their Federal permit applications, this greater sensitivity to changing regulatory conditions within the American Lobster fishery overall will continue.

Analytic tools to quantitatively predict the impacts from this inability to align the state and Federal programs are unavailable; however, based on "best professional judgment," we believe that the potential impacts to management of the American Lobster fishery can be qualitatively described, as follows:

- Because under No Action, participation in the Federal fishery remains broadly defined to a universe of 3200+ permit holders, it will remain difficult to measure, and thus manage, fishing effort with this fishery. Under Alternative 1, anywhere from 431 (2007 data) to over 3,000 Federal permits (based on

[104] It is possible that an ITT program at the state level could proceed in the absence of a complementary Federal program. This is discussed in more detail in Section 4.4.

[105] For example, NMFS didn't implement the recommended vessel upgrade restrictions of Amendment 3 and added OCC max size and v-notch restrictions despite those restrictions not being part of the Commission's OCC plan.

total Federal permits) could be fishing up to 800 traps per permit –meaning that managers would have to assume that anywhere from 345,000 traps (431 permits x 800 traps) to 2,400,000 traps (3,200 permits x 800 traps) could be fished in any given year. While it is unlikely that all 3,200+ permit holders would designate the LCMA 2 on their Federal permit, managers face the difficult challenge under No Action of understanding the level of real participation in the fishery and this makes it difficult to respond with any precision to problems facing the resource.

- Because under Alternative 1-No Action, any Federal permit holder could fish up to 800 traps in Federal waters of the OCC, effort control within the fishery will largely depend, by default, on the effective state enforcement of the Most Restrictive Rule. It is unclear whether and how affected states would enforce the Most Restrictive Rule, especially in situations where an individual receives a zero allocation on the state permit, or has been altogether disqualified under a state's OCC limited access program.

Administrative Impacts

Similar to the impacts for the Outer Cape LCMA described in Section 4.2, under Alternative 1-No Action, the administrative and enforcement burden to affected state and Federal jurisdictions would potentially increase as circumstances surrounding the disconnects between state/Federal management of the dual permit holder continue unaddressed.

A dual permit holder is a fisher who possesses both a state and Federal lobster permit. Administratively, NMFS and the states of Massachusetts, Rhode Island, and Connecticut currently operate under a joint State-Federal Trap Tag Memorandum of Understanding (MOU), whereby these states are authorized, under normal circumstances, to issue trap tags to all dual permit holders residing in those states. Under Alternative 1, No Action, it would be possible for a dual permit holder to not be qualified by one of these states, but still request that the LCMA 2 be included on the state-issued coastal/EEZ trap tag because under the current Federal program anyone can elect and receive an allocation of up to 800 traps. It is also possible that the states involved may refuse to issue trap tags with the LCMA 2 designation.[106]

The dual permit holder thus could be legally prohibited by Massachusetts, Rhode Island, or Connecticut from fishing in the LCMA 2 under state law and at the same time legally request his Federal trap tags from NMFS directly. If NMFS does authorize the issuance of EEZ trap tags as described in this scenario, as a policy matter, NMFS has notified the appropriate LCMA 2 state regulatory agency of the Federal action. In situations like this, some states have regulatory authority to notify the Federal permit holder not to acquire or fish with the NMFS authorized tags, subject to loss of state fishing and/or landing privileges. It is unclear, however, whether the potentially affected state jurisdictions have evaluated their state regulations to determine if the legal authority exists to be able to effectively administer and monitor tag issuance to completely prevent non-qualified vessels to set traps in LCMA 2.

Enforcement Impacts

Based on a potential need to address the receipt of Federally authorized LCMA 2 EEZ tags by a state resident contrary to existing state law and Addendum XII, administration and enforcement of the OCC lobster fishery would likely become more onerous for state marine fisheries and law enforcement and Federal management and law enforcement staff under Alternative 1-No Action. The greater the level of disconnect between Federal and state management programs for the American Lobster fishery, the greater

[106] The ISFMP, in Section 4.5 of Addendum XII, clearly supports this position and includes, as a compliance requirement, that "States will enact rules making it unlawful for any permit holder to order, possess or fish with trap tags designated for an LCMA not specifically authorized by a state in compliance with Plan amendments or addenda."

the burden on Federal and state enforcement programs, since the need for dockside and on-the-water confirmations of where and how many traps have been set by whom will proportionately increase. Clearly, the establishment of a central trap database, as discussed in greater detail in Section 4.2-Administrative Impacts, would be critical to mitigate confusion and ensure all regulatory agencies have up-to-date and accurate information on state and Federal participants authorized and/or electing to fish in LCMA 2.

Biological and Physical Impacts

The following section discusses the potential indirect biological and physical impacts to lobster, protected species, by-catch fish and bait fish from the LCMA 2-No Action alternative. Potential impacts would occur from the degree to which management measures under the status quo might lead to a change the number of traps in the water or their geographic location, including their concentration in any one area, which could affect the amount of effort (harvesting) within the fishery. Potential physical impacts relate primarily to the impacts that the placement of lobster traps on the ocean bottom could have on habitat.

Under No Action, all 3200+ Federal permit holders could elect the LCMA 2 and would be authorized to fish up to 800 traps each in Federal waters. Nonetheless, little change in terms of actual traps fished under this alternative is anticipated. In fact, as indicated in Table 4.3, above, though nearly 345,000 traps could be authorized under the status quo, approximately 123,000 were actually fished in 2007. NMFS does not anticipate a significant change in the amount of effort under No Action from what was identified for 2007. Given this, NMFS believes that the potential biological and physical impacts on lobster, protected species, by-catch fish and bait fish, discussed more fully below, will be negligible or minor.

Lobster

Biological Impacts

MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

As stated above, the LCMA 2 is a large fishery with multi-state jurisdictions. The potential inconsistencies in trap tag administration (discussed under *Administrative Impacts)* have the potential to increase the number of traps set in Federal waters of the LCMA 2 to some small, but unquantifiable degree.

Any increase in effort within the American Lobster fishery will add population pressure to lobster stocks. The biological stock area where this would be of most concern is Southern New England (SNE). Since the LCMA 2 is entirely within the SNE stock complex, any potential for increased effort is a concern. Under Alternative 1-No Action, anywhere from 431 (based upon 2007 data) to over 3,200 Federal permit holders (based upon total Federal permits) could be fishing up to 800 traps per permit – meaning that managers would have to assume that anywhere from 345,000 to 2,400,000 traps could be fished in any given year.

Physical Impacts

MINOR, ADVERSE, LONG-TERM, INDIRECT PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

While there have been few studies on the effect of lobster traps on the ocean floor, available information suggests trap gear, including the lobster traps used in the commercial lobster fishery, tend to have limited

long-term adverse impacts on the seafloor habitat, particularly when compared with mobile fishing gears such as trawls and dredges. Impacts on the sea floor vary based on the composition of the substrate that the traps come to rest on. Frequent hauling in areas of dense vegetation are more likely to result in some damage, however, the impacts are likely to be minor and of short duration. The scientific evaluation of lobster and traps on attached epibenthic megafauna (sponges, soft corals, tube worms) showed no negative effect on the abundance of attached megafauna (Eno et al., 2001). When traps were dragged over the bottom they left tracks, but commercial trap gear appeared to have no negative effect on the abundance of attached benthic epifauna.

Protected Species

MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED AS A RESULT OF THE SMALL (UNQUANTIFIABLE) INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 1-NO ACTION.

As discussed in Section 3.5, several endangered species are susceptible to entanglement in lobster fishing gear. Many protected species exhibit feeding behavior that increases their susceptibility to entanglements. The potential inconsistencies in trap tag administration (discussed above) have the potential to increase the number of traps set in Federal waters of the LCMA 2 to some small, but unquantifiable degree and this could, in turn, increase the exposure of protected species to additional vertical lines in the water.

As noted previously, over 95% of lobsters are harvested from lobster traps. Lobster traps may be set singly, each having its own surface line and buoy, or traps may be fished in trawls, normally of two to six traps per trawl in inshore areas, where multiple traps are linked together by groundlines, with surface lines and buoys or high flyers usually at the first and last traps of the trap trawl (Sainsbury, 1971).

Though nearly 345,000 traps could be authorized under the status quo, approximately 123,000 were actually fished in 2007. While the difference between the number of traps authorized and the number of traps actually fished does represent the amount of latent effort within the fishery—effort that, were it activated, would represent additional vertical lines in the water—NMFS does not anticipate that the level of effort under No Action will increase substantially beyond current practice. Though it is acknowledged that any additional trap gear set in the LCMA 2 does increase the risk of entanglement for protected species, NMFS believes that any increase in effort is likely to be small and associated impacts on this resource would be minor-to-negligible.

By-Catch Fish

MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO BY-CATCH FISH SPECIES WOULD BE EXPECTED AS A RESULT OF THE SMALL (UNQUANTIFIABLE) INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 1-NO ACTION.

The term “bycatch” refers to the unintentional landing and discarding of animals not specifically targeted by fishing vessels. While, in general, the traps used in commercial lobster fisheries are among the more selective types of fishing gear, the most common types of by-catch in lobster traps are juvenile lobsters and crabs. Even though lobster by-catch landed in traps are likely to be discarded with lower mortality rates than those landed with other gear types such as trawls and dredges (Davis 2002), the SNE lobster stock is a stock of concern based on the recently released 2009 American lobster stock assessment (reference). Even if discard mortality rates (the percentage of discarded animals that die) associated with animals caught in traps are low, there is likely to be a small be unquantifiable increase in by-catch mortality of lobsters if fishing effort does increase in the Federal waters of LCMA 2. Nonetheless,

because the potential increase in the amount of trap gear fished in LCMA 2 is small, NMFS believes that the indirect impact of such an increase on by-catch species will be minor.

Bait Fish

MINOR, ADVERSE, LONG-TERM, INDIRECT, IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED AS A RESULT OF THE SMALL (UNQUANTIFIABLE) INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 1- NO-ACTION.

Bait is used in lobster traps to attract lobsters into the trap, and is an important component of the lobster fishery. It has been estimated that 50-60,000 tons of bait are used in the U.S. lobster fishery annually. The species used as bait in lobster traps varies by geographic location, and price is a major factor when selecting lobster bait. Often, lobstermen have specific preferences for their preferred bait, but Atlantic herring is the major species used by volume. In Maine, herring comprises nearly 90% of the bait used, with fish such as menhaden, alewives, and redfish making up the remaining 10%.

In addition to herring, species such as skates are frequently used in lobster traps as bait, especially south of Cape Cod in LCMA 2, and in the offshore lobster fishery. Landings of skate, for human consumption and bait needs, have remained relatively steady in recent years, averaging approximately 15,000 tons a year since 2001. Lobstermen also make use of fish frames, the body and skeleton that remain after the edible portion of meat is removed. The type of fish frames used as bait varies considerably by season and geographic location, but generally includes redfish, flatfish, and other groundfish species. Generally, fresh fish is the preferred bait over frozen fish, but when supplies of fresh bait are low, frozen fish, mainly frozen herring, is a frequent substitute for fresh bait.

As noted previously, it is possible under Alternative 1-No Action that the number of traps fished in LCMA 2 may increase by some small but unquantifiable amount. Under this option, anywhere from 431 (based upon 2007 data) to over 3200 Federal permit holders (based upon total Federal permits) could be fishing up to 800 traps per permit – meaning that managers would have to assume that anywhere from 345,000 to 2,400,000 traps could be fished in any given year.

If trap fishing effort does increase, there would be a proportionate increase in the use of lobster bait. In LCMA 2 a variety of bait is used, including herring, skates, and fish frames. However, it is NMFS opinion that, given the size of the U.S. lobster bait market (estimated at 50-60,000 tons), any potential adverse impacts associated with increased bait demand under Alternative 1 would be minor and of short duration.

4.3.2 Alternative 2 – Commission Alternative (Preferred Alternative)

Under this alternative, four significant impacts to the Federal American Lobster fishery would occur:

1. The number of Federal permit holders would be capped in accordance with qualification criteria approved by the Commission under Addenda VII and XII. To fish within LCMA 2, permit holders would have to first qualify for an allocation, eliminating the practice of simply "electing," or "checking off" the LCMA on their annual permit applications;
2. The total number of traps allocated would be capped at a level based on the historical fishing practices of those fishers who are determined to qualify for the LCMA 2. This trap cap will establish a new limit for fishing effort within this LCMA.

3. Fisheries management information in the LCMA 2 would become more accurate. More accurate information on the number of participants and trap fishing effort will result from accurately accounting for who is fishing in the LCMA OCC (through step 1, "qualification") and how many traps are being used (through step 2, "allocation").
4. The development of a joint state-Federal Individual Transferable Trap (ITT) Program in the LCMA 2 becomes possible. Completion of the qualification and trap allocation steps, and the resultant ability to accurately identify participants and their individual trap allocations, creates a baseline of information, without which an ITT program cannot occur.

Regulatory Impacts

This section addresses potential regulatory impacts associated with Alternative 2-Commission Alternative. Potential regulatory impacts would be from the degree to which the proposed measures are compatible with the ASMFC-passed measures under Addendum XII, currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

MAJOR, BENEFICIAL, LONG-TERM, DIRECT, REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

Compatibility with ASMFC-Approved Measures

On balance, NMFS believes Alternative 2 would implement management measures for the American Lobster fishery that are substantially identical to those already passed by the Commission and, as such, would be compatible with ASMFC-approved measures.[107] As a result, inconsistencies between state-Federal lobster management (see Section 3.1), while perhaps not entirely eliminated, would become more manageable due, in part, to the more accurate accounting of fishing effort within the LCMA under Alternative 2.

Management Impacts

In terms of management of the American Lobster fishery, major, long-term, beneficial, direct impacts are expected under Alternative 2. Under this alternative, the ambiguity between what is true "on paper" versus what is actually occurring (the "dual reality" discussed in Section 3.3.1) is substantially reduced. As a result, managers will have a better understanding of who is fishing and how many traps are being used and this will allow them to better manage the overall level of effort in the fishery along with the overall protection of the resource.

Further, the potential disconnects between the state and Federal management of dual permit holders will likewise be substantially reduced. Because state and Federal identification of qualified fishers and allocated traps will "match up," no longer will there be a potential, for example, for a dual permit holder to be legally prohibited from fishing in LCMA2 under state law while technically still being legally authorized to fish in Federal waters of LCMA2. Effective coordination and consistent measures would prevent the issuance of trap tags to Federal lobster vessels that did not qualify under a Federal qualification/allocation process based on the criteria specified in the ISFMP.

[107] Some inconsistencies may continue to occur that could potentially cause disconnects on a limited permit holder level – e.g., such as where states and/or NMFS have interpreted a provision of Addendum VII similarly, but not identically – but NMFS believes that a Coordinating Committee as referenced in the ISFMP, as well as applicable procedures specified in Addendum XII will likely keep these disconnects at an acceptable and manageable level for the majority of Federal permit holders.

Similarly, Alternative 2 will also substantially reduce the "inflated" numbers of allocated pots that occurs under Alternative 1-No Action. As shown in Table 4.3, Under Alternative 1, anywhere from 345,000 traps (431 permits x 800 traps) to 2,400,000 traps (3,200 permits x 800 traps) could be fished in any given year. Under Alternative 2, that number drops to approximately 123,000 traps. NMFS believes that the ability to more accurately account for fishing effort in the LCMA 2 is of particular concern, given its location within the SNE biological stock unit are, where concern over the status lobster resource is high (see Section 3.4). More accurate information might allow managers to more easily and precisely respond to threats to the resource in the SNE area.

Enforcement Impacts

Alternative 2 is expected to have beneficial impacts in terms of program enforcement, due simply to the fact that most of the regulatory disconnects discussed above in 4.1 will be significantly reduced or largely eliminated for the majority of Federal permit holders. In particular, because the state-Federal management of dual permit holders and their allocations will no longer be poorly aligned, the need for more state and Federal on-the-water enforcement to confirm the number of traps being placed in LCMA 2 would be reduced under Alternative 2 compared to Alternative 1. Under draft Alternative 2, Table 4.3 indicates 207 Federal permit holders would qualify in LCMA 2, compared with from 431 up to 3000+ vessels that would be authorized to select LCMA 2 on an annual basis under Alternative 1. In addition to a more manageable number of qualified participants, NMFS's assumption that a central multi-jurisdictional trap database would also be available, would further ensure that state and Federal managers, and law enforcement agents, would be able to easily verify qualification and trap allocation information, further reducing the administrative aspects of enforcement coordination in this geographically more diverse LCMA.

Biological and Physical Impacts

Potential impacts on biological and physical resources would be from the degree to which management measures would alter the number of traps in the water or their geographic location, including their concentration in any one area. Indirect biological impacts relate to the amount of effort (harvesting) within the fishery. Indirect physical impacts relate primarily to the impacts that the placement of lobster traps have on the ocean bottom.

Fishing effort under Alternative 2-Commission Alternative is expected to decrease to a small degree, largely as a result reductions in latent effort, and this will result in minor biological benefits to lobster, protected species, bait fish and by-catch species, discussed below.

Lobster

Biological Impacts

MINOR, BENEFICIAL, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

For lobsters, the number of traps fished under this option would be capped at historical levels and the amount of latent effort would be reduced relative to the status quo. As a result, some beneficial biological impacts for the SNE lobster stock would be expected—important given that the most recent lobster stock assessment for this area showed decreased abundance and recruitment as well as continued high fishing mortality (See Section 1.1.1).

Relative to the status quo, Alternative 2 would result in a significant decrease in both the number of permit holders qualifying for an allocation and the number of total traps allocated (66% and 52%, respectively) for the LCMA2 lobster fishery (Table 4.3). Although the number of traps *actually* fished has varied little over the recent time period, the 104 permit holders that would not qualify under Alternative 2's limited access program represents the amount of latent effort that exists under current regulatory practice. It is acknowledged that if these permit holders fished for lobsters, the states in theory would apply the Most Restrictive Rule and some of this potential for increased effort would be avoided. Nonetheless, NMFS believes that a coordinated state-Federal program under Alternative 2 would align the accounting of "true" fishing effort across state-Federal jurisdictions and allow Federal resource managers to more effectively reduce or even eliminate this potential for increased effort.

Physical Impacts

MINOR, BENEFICIAL, LONG-TERM, INDIRECT PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

Under Alternative 2, the total number of authorized traps would decrease from 345,000 to 126,000 traps. Based on this, minor, long-term, beneficial, indirect impacts to lobster habitat would be expected.

While there have been few studies on the effect of lobster traps on the ocean floor, available information suggests trap gear, including the lobster traps used in the commercial lobster fishery, tend to have limited long-term adverse impacts on the seafloor habitat, particularly when compared with mobile fishing gears such as trawls and dredges.

Impacts on the sea floor vary based on the composition of the substrate that the traps come to rest on. Frequent hauling in areas of dense vegetation are more likely to result in some damage, however, the impacts are likely to be minor and of short duration. The scientific evaluation of lobster and traps on attached epibenthic megafauna (sponges, soft corals, tube worms) showed no negative effect on the abundance of attached megafauna (Eno et al., 2001). When traps were dragged over the bottom they left tracks, but commercial trap gear appeared to have no negative effect on the abundance of attached benthic epifauna.

Protected Species

MINOR, BENEFICIAL, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED ALTERNATIVE 2-COMMISSION ALTERNATIVE.

As stated above, because the number of traps fished under Alternative 2 would be capped at historical levels and the amount of latent effort within the fishery would be reduced relative to the status quo, NMFS believes that some beneficial biological impacts to protected species will occur as a result of the potential for fewer vertical lines in the water from lobster trap gear.

Further, improved management and enforcement under a more coordinated Federal-state program for lobster will also contribute to stronger protection for protected species. Because inconsistencies in program administration (described above) will be reduced under Alternative 2, Federal resource managers will be able to more effectively restrict trap fishing access to those vessels qualified to fish in the LCMA 2 and better coordinate the multi-jurisdictional enforcement requirements that are needed, both dockside and at-sea, to administer the lobster fishery management program.

As noted previously, over 95% of lobsters are harvested from lobster traps. Lobster traps may be set singly, each having its own surface line and buoy, or traps may be fished in trawls, normally of two to six

traps per trawl in inshore areas, where multiple traps are linked together by groundlines, with surface lines and buoys or high flyers usually at the first and last traps of the trap trawl (Sainsbury, 1971). Several endangered species are susceptible to entanglement in fishing gear. Many protected species exhibit feeding behavior that increases their susceptibility to entanglements. While foraging, all body parts are at risk of entanglement. (see Section 3.5-Protected Resources for further details).

As shown in Table 4.3, under Alternative 2, the number of potential traps fished shrinks from 345,000 under the status quo to 126,000. In fact, since current Federal regulations allow any of the 3200+ permit holders to elect the LCMA 2 and receive an 800 trap allocation, the amount of trap reduction under this alternative is potentially far greater (126,000 versus 2.4 million traps). While NMFS acknowledges that even under Alternative 1 the likelihood of an increase in trap effort in LCMA 2 would be minor, NMFS believes a coordinated set of state-Federal measures would facilitate more effective administrative and enforcement oversight than under Alternative 1.

It is NMFS opinion that trap fishing effort will be constrained and the risk of entanglement of endangered species is likely to be reduced under draft Alternative 2 by some small but unquantifiable degree due to implementation of a cooperative state-Federal LCMA 2-specific limited access program. Therefore, minor, long-term, beneficial, indirect biological impacts to protected species would be expected Alternative 2-Commission Alternative.

By-Catch Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO BY-CATCH FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

As stated above, because the number of traps fished under Alternative 2 would be capped at historical levels and the amount of latent effort within the fishery would be reduced relative to the status quo, NMFS believes that some beneficial biological impacts to by-catch species will occur as result of minor potential reductions in effort (see Protected Resources discussion, above).

As noted previously, lobster and crabs are the primary by-catch species in lobster trap gear. While by-catch mortality in trap gear is acknowledged to be low, especially in comparison with mobile gear fisheries, if trap effort is constrained there is likely to be some minor, but unquantifiable level of benefit to the SNE lobster resource. On balance, therefore, NMFS believes that complementary state-Federal regulations would more effectively cap and prevent any potential increase in trap fishing effort and this would result in minor, long-term, beneficial, indirect impacts to by-catch species.

Bait Fish Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

As stated above, because the number of traps fished under Alternative 2 would be capped at historical levels and the amount of latent effort within the fishery would be reduced relative to the status quo, NMFS believes that some beneficial biological impacts to bait fish species will occur as result of minor potential reductions in effort (see Protected Resources discussion, above).

Further, improved management and enforcement under a more coordinated Federal-state program for lobster will also contribute to capping demand for bait fish as a result. Because inconsistencies in program administration (described above) will be reduced under Alternative 2, Federal resource managers

will be able to more effectively restrict trap fishing access to those vessels qualified to fish in the LCMA 2 and better coordinate the multi-jurisdictional enforcement requirements that are needed, both dockside and at-sea, to administer the lobster fishery management program.

4.3.3 Alternative 3 – Qualify Only

Under Alternative 3-Qualify Only, the following significant impacts to the Federal American Lobster fishery in LCMA2 would occur:

1. The number of Federal permit holders would be capped in accordance with qualification criteria approved by the Commission under Addendum XII. To fish within LCMA 2, permit holders would have to first qualify for an allocation, eliminating the practice of simply "electing," or "checking off" the LCMA on their annual permit applications;
2. Accounting for who is fishing in LCMA2 would become more accurate as a result of the qualification process (i.e., step 1). A more accurate accounting of the number of traps being fished in LCMA 2 will not occur under this option, however, because the allocation criteria approved by the Commission under Addendum XII will not be applied and since qualifying vessels will not be capped at their historical trap levels, the potential for increased effort due to activation of latent traps is possible.

Regulatory Impacts

This section addresses potential regulatory impacts associated with Alternative 3-Qualify Only. Potential regulatory impacts would be from the degree to which the proposed measures are compatible with the ASMFC-passed measures under Addendum XII, currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

ALTERNATIVE 3–QUALIFY-ONLY HAS BOTH MINOR, BENEFICIAL, LONG-TERM, DIRECT AND MODERATE, ADVERSE, LONG-TERM DIRECT REGULATORY IMPACTS.

Alternative 3 is meant to address the potential dilemma faced by NMFS of how to effectively implement measures that will complement state actions establishing a limited access program in LCMA 2, when those states apply the ISFMP criteria that determine trap allocations to qualified fishers inconsistently. To address this, Alternative 3 considers the benefits of maintaining the current Federal uniform allocation of 800 traps in LCMA 2. As such, this option offers a compromise between absolute consistency with the Commission-approved limited access program and the realization that consistency in all its aspects may not be possible.

Compatibility with ASMFC-Approved Measures

In terms of qualifying fishers for an allocation within LCMA2, Alternative 3 would implement qualification measures for the American Lobster fishery that that are substantially identical to those already passed by the Commission and, as such, would be compatible with ASMFC-approved measures. While some inconsistencies may continue that could potentially cause disconnects on a limited permit holder level–e.g., such where states and/or NMFS have interpreted a provision of Addendum VII, that defined the Area 2 limited entry program, similarly, but not identically – NMFS believes that Addendum

VII's Coordinating Committee[108], as well as the advent of Addendum XII will likely keep these disconnects at an acceptable and manageable level. Further, because this alternative seeks only to align state/Federal qualification decisions (unlike the Commission alternative above that seeks to align both the qualification and allocation decisions), the potential for disparate state/Federal decisions is lessened.

With regard to trap allocations, however, major differences exist between the potential number of traps fished under the Qualify-Only alternative versus the potential number of traps under ASMFC-approved measures that would be implemented under state lobster fishery management programs—166,000 versus nearly 126,000, respectively (Table 4.3). This difference in the allocation of traps will allow some of the potential disconnects described under No Action to remain (though to a lesser extent), particularly with regard to dual permit holders who may receive a trap allocation for their state LCMA 2 permit that is lower than what would be authorized for under the Federal permit. Again, NMFS believes that effective state administration of tag issuance under the Most Restrictive Rule will help mitigate the adverse effects of these inconsistencies and help guide permit holders. It is not known, however, how effectively the states involved would enforce the more restrictive trap limits.

Management Impacts

Similar to the No Action alternative, because Alternative 3 does not align with the states allocation process, this program approach may be viewed as complicating future lobster fishery management. When trap allocations between state and Federal programs do not line up with each other, it is both difficult for resource managers to track and coordinate fishing effort and confusing for the permit holders who are being handed one set of requirements by the states and a different set of requirements by NMFS. For the LCMA 2, within which lies the SNE lobster stock area, the 40,000 trap difference between allocations under Alternative 3 and No Action is a concern: the states would manage this area under ASMFC-approved measures that would allocated approximately 126,000 traps for the LCMA 2, while the NMFS would manage this area under a separate program for trap allocation that would allow up to 166,000 traps. Application by the states of the Most Restrictive Rule may help mitigate the adverse effects of these inconsistencies and help guide permit holders, but it is unknown how effectively the states involved will enforce the more restrictive trap limits.

Administrative Impacts

The administrative impacts of Alternative 3 are similar to Alternative 1. The trap tag allocation differences between this option and what would be authorized under state programs would result in the need for greater coordination among the regulatory agencies to verify compliance across jurisdictions and as well as with any lower trap limits required under the Most Restrictive Rule.

It is NMFS opinion that the establishment of a central trap database, as discussed in greater detail in Section 4.1-Database Issues, would be critical to mitigate confusion and ensure all regulatory agencies have up to date and accurate information on state and Federal participants authorized and/or electing to fish in LCMA 2.

Enforcement Impacts

Under Alternative 3, the enforcement burdens of an unaligned state-Federal management program for American lobster in the LCMA 2 will be substantially reduced, but not eliminated. Since trap allocations will remain unaligned, as discussed above, the need for more state and Federal on-the-water enforcement

[108] The role of the Coordinating Committee is to "…facilitate communication and coordination, which is expected to result in more consistent decisions amongst the decision making entities." Section 4.1.1.1, Addendum VII (November 2005).

to confirm the number of traps being placed in LCMA 2 would remain under this option. More specifically, under this option, 207 Federal permit holders would each qualify for an 800 trap allocation in the LCMA 2, while under Alternative 1-No Action, anywhere from 431 to 3200+ could fish up to 800 traps each. This 40,000 trap allocation difference would require additional enforcement coordination by all affected jurisdictions in order to ensure that vessels did not exceed the more restrictive trap limit authorized under the state program. Additionally, if vessels with a lower state trap allocation subsequently petition NMFS for their full complement of 800 trap tags, increased enforcement efforts would be necessary to ensure vessels are not exceeding the more restrictive trap limit required under the Most Restrictive Rule.

Biological and Physical Impacts

Potential impacts on biological and physical resources would be from the degree to which management measures would alter the number of traps in the water or their geographic location, including their concentration in any one area. Indirect biological impacts relate to the amount of effort (harvesting) within the fishery. Indirect physical impacts relate primarily to the impacts that the placement of lobster traps have on the ocean bottom.

Compared to Alternative 1, No Action, fishing effort under Alternative 3-Qualify Only is expected to decrease to a small degree, largely as a result reductions in latent effort, and this will result in minor biological benefits to lobster, protected species, bait fish and by-catch species, discussed below.

As previously stated, when evaluating the potential impacts of the proposed management changes to the Federal American Lobster fishery on biological and physical resources, the focus of the analysis is fundamentally on the change in the number of traps being fished (though ultimately changes in the number of participants can also cause impacts, discussed further below). In shifting from the status quo (where any permit holder can elect to fish the area) to an LCMA 2-specific limited-access trap fishery under Alternative 3-Qualify Only, a significant decrease in the number of permit holders qualifying for an allocation and the number of total traps allocated would occur (54% for both). Since the participants are qualified and traps are allocated based on historical effort, little real change is expected under this option in terms of additional traps being fished relative to the status quo. Nonetheless, it is important to recognize that under Alternative 3 there will be up to a 40,000-trap difference (approximate) between the number of traps allocated and the number of traps fished (Table 4.3) and this difference would represent potential latent effort within the fishery. Because this amount of latent effort is substantially less than what exists under the status quo, NMFS believes that Alternative 3 would result in minor benefits to the resources discussed below.

Lobster

Biological Impacts

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT *AND* MINOR ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

Overall, the potential impacts on American Lobster resources are marginally more beneficial under this option relative to Alternative 1-No Action. The number of traps fished under Alternative 3 would be lower than Alternative 1, since Alternative 1 continues to allow all Federal permit holders to fish up to 800 traps and allows all Federal permit holders open access to elect to fish in the OCC LCMA. Under Alternative 3, Federal measures would limit the total number of vessels that may fish up to the Federal trap cap (800 traps) while Alternative 1 would not.

While NMFS does not believe that there is the same possibility under this option for increased fishing effort as there is under Alternative 1 (albeit small there, as well), there is the trap difference (Table 4.3) between the number of traps allocated versus the number fished (based on trap tags purchased) noted earlier in this section, and this represents potential latent effort that could potentially be activated within the fishery should this option be chosen. As has been noted previously, any potential increase in mortality on the SNE stock is a concern, given that the most recent lobster stock assessment for this area showed decreased abundance and recruitment as well as continued high fishing mortality (see Section 1.1.1).

Physical Impacts

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT *AND* MINOR ADVERSE, LONG-TERM, INDIRECT PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

As with biological impacts discussed above, potential impacts on habitat and benthic fauna are expected to be marginally more beneficial under this option compared to Alternative 1–No Action due to the reduction in latent effort relative to the No Action alternative. The number of traps fished under Alternative 3 would be lower than Alternative 1, since Alternative 1 continues to allow all Federal permit holders to fish up to 800 traps and allows all Federal permit holders open access to elect to fish in the OCC LCMA. Under Alternative 3, Federal measures would limit the total number of vessels that may fish up to the Federal trap cap (800 traps) while Alternative 1 would not. Nonetheless, it is important to note that under Alternative 3 there would be up to a 40,000-trap difference (approximate) between the number of traps allocated and the number of traps fished and that this difference would represent potential latent effort within the fishery. Should that latent effort be activated, the additional traps would have minor adverse effects on habitat resources.

While the likelihood is thus considered small, NMFS acknowledges the possibility of some small but unquantifiable increase in trap fishing effort under Alternative 3. Available information suggests trap gear, including the lobster traps used in the commercial lobster fishery, tend to have limited long-term adverse impacts on the seafloor habitat, particularly when compared with mobile fishing gears such as trawls and dredges. Frequent hauling in areas of dense vegetation, such as kelp beds and eelgrass, are more likely to result in some damage through rope entanglement or as traps are hauled up. However, even in areas of dense vegetation, the impacts are likely to be minor and of short duration.

Protected Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

As stated above, because the number of permit holders under Alternative 3 would be capped at historical levels and the amount of latent effort within the fishery would be reduced relative to the status quo, NMFS believes that some beneficial biological impacts to protected species will occur as a result of the potential for fewer vertical lines in the water from lobster trap gear.

As noted previously, over 95% of lobsters are harvested from lobster traps. Lobster traps may be set singly, each having its own surface line and buoy, or traps may be fished in trawls, normally of two to six traps per trawl in inshore areas, where multiple traps are linked together by groundlines, with surface lines and buoys or high flyers usually at the first and last traps of the trap trawl (Sainsbury, 1971). Several endangered species are susceptible to entanglement in fishing gear. Many protected species exhibit

feeding behavior that increases their susceptibility to entanglements. While foraging, all body parts are at risk of entanglement. (see Section 3.5-Protected Resources for further details).

As shown in Table 4.3, under Alternative 3, the number of potential traps fished shrinks from 345,000 under the status quo to 166,000. In fact, since current Federal regulations allow any of the 3200+ permit holders to elect the LCMA 2 and receive an 800 trap allocation, the amount of trap reduction under this alternative is potentially far greater (166,000 versus 2.4 million traps). By capping the number of participants and reducing latent effort in this way, NMFS believes that this alternative would have minor, long-term, beneficial, indirect biological impacts on protected species.

By-Catch Species

NEGLIGIBLE–TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO BY-CATCH FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

As stated above, because the number of traps fished under Alternative 3 would be capped at historical levels and the amount of latent effort within the fishery would be reduced relative to the status quo, NMFS believes that some beneficial biological impacts to by-catch species will occur as result of minor potential reductions in effort. Nonetheless, it is important to note that under Alternative 3 there would be up to a 40,000-trap difference (approximate) between the number of traps allocated and the number of traps fished and that this difference would represent potential latent effort within the fishery. Should that latent effort be activated, the additional traps would result in a minor adverse effect on by-catch fish.

Also, as noted previously, lobster and crabs are the primary by-catch species in lobster trap gear. While by-catch mortality in trap gear is acknowledged to be low, especially in comparison with mobile gear fisheries, if trap effort is constrained there is likely to be some minor, but unquantifiable level of benefit to the SNE lobster resource.

Bait Fish Species

NEGLIGIBLE-TO-MINOR, BENEFICAL, LONG-TERM, INDIRECT IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

Impacts on bait fish species under Alternative 3 are largely analogous to those identified for by-catch species above. Because the number of traps fished under this would be capped at historical levels and the amount of latent effort within the fishery would be reduced relative to the status quo, NMFS believes that some beneficial biological impacts to bait fish species will occur as result of minor potential reductions in effort. Nonetheless, it is important to note that under Alternative 3 there would be up to a 40,000-trap difference (approximate) between the number of traps allocated and the number of traps fished and that this difference would represent potential latent effort within the fishery. In the unlikely event trap fishing effort does increase in the LCMA 2 under this alternative, a minor increase in the demand for bait fish species would be expected. Based on the total demand for bait fish in the U.S. lobster trap fishery, NMFS believes that any impact on bait demand under Alternative 3 would be negligible.

4.4 Inter-Transferable Trap Alternatives

The establishment of an Individual Transferable Trap (ITT) program is the last step in a three-step process that necessarily begins with qualifying permit holders into an LCMA (step 1), followed by allocating the number of traps that a qualified permit holder can fish within that LCMA (step 2). Once these two steps have been completed, an ITT program would allow lobster fishers to sell, or "transfer," partial trap allocations to one another. Under the current Federal program, lobster fishers who want to sell trap fishing rights assigned to a lobster permit must sell their entire trap allocation (and thus get out of the fishery completely). By allowing participants to buy and sell partial trap allocations separate from the Federal lobster permit, an ITT program would establish fishing privileges for U.S. lobster fishers heretofore unseen in Federal lobster management.

To date, a number of ITT programs have been approved through the Commission process within certain LCMAs, beginning with the LCMA OCC in 2002, followed with the LCMA 3 in 2003 and, finally, with the LCMA 2 in 2005 (see also Section 2.0). For any ITT program, a central objective is to provide permit holders with opportunities to enhance their own business efficiency or respond to inadequate trap allocation by obtaining additional allocation from other fishers who may want to scale down their own business or leave the fishery altogether. Because the total number of traps that can be fished within an LCMA will have already been determined (through steps 1 and 2, above), ITT programs are not about effort control or about affecting the number of lobsters in the water (although measures to reduce effort are incorporated into the ITT program to a limited degree, discussed below). Rather, ITT programs are about affecting the behavior of the people who fish for lobster; in particular, they are about giving the people who fish for lobster economic options (through opportunities to buy and sell partial trap allocations) that are not available to them under existing Federal lobster management. Ultimately, therefore, the primary purpose of an ITT program is to improve the overall economic efficiency of the lobster industry[109] (ASMFC 2002b).

The following discussion analyzes the potential impacts from several ITT program alternatives. Except for *Alternative 3-LCMA 3 Only*, each of the ITT program alternatives presented would apply to LCMAs 2, 3 and the OCC for the American Lobster fishery. Further, common to each of the alternatives (except No Action) are management provisions that would: 1) mitigate against the potential activation of "latent effort" and 2) require a database tracking system to manage the inter-jurisdictional complexities of trap transfers. These two issues—latent effort under ITT and the need for a database tracking system—are discussed in turn, below.

Latent effort under ITT: Latent effort is potential effort. In the lobster fishery, it would represent the number of traps that could be fished, but that are not actually being fished. For example, if a fisher with an 800 trap allocation decides to fish only 500 traps, the remaining 300 traps represent latent effort. Concern about the potential activation of latent effort increases under an ITT program because the more latent effort that exists, the more potential that a spike in fishing effort will occur when those traps not being fished can be transferred (i.e., sold) once ITT is "turned on." Under these circumstances, lobster fishers could maximize their income by transferring "latent" traps to other fishers who would use these traps more actively, thereby increasing the overall level of fishing effort. Though steps 1 and 2 (whereby fishers are qualified to fish within an LCMA and receive trap allocations based on fishing history) attempt

[109] To date, a number of state-level trap transfer programs have been implemented within certain LCMAs, beginning with the OCC LCMA in 2002, and LCMA 2 in 2005.The OCC LCMA program was proposed in Addendum III in February 2002, followed by LCMA 3 program in Addendum IV in December 2003 and finally the LCMA 2 in Addendum VII in November 2005. Transferability taxes are proposed in Addendum III (for the OCC LCMA), Addenda IV and V (for LCMA 3), Addendum IX (for LCMA 2), and Addendum XII. Addendum VII does not establish a transferability program so much as it suggests that the states establish such a program at some point in the future (see Addendum VII, Section 4.2.1.3, November 2005).

to "cap" latent effort, some amount likely remains because many lobster fishers fish less than their maximum allocation.

Recognizing this potential, the Commission added a number of measures to its ITT program to balance against the activation of latent effort, as follows.

- *"Conservation tax."* A conservation tax debits each trap transfer by some percentage of traps. The effect is a reduction of total allocated traps (which would include latent trap effort), that in the long term would reduce the number of traps actually being placed in the water. All of the ITT program alternatives suggest a conservation tax of between 10-20%.

- *Trap caps.* Trap caps are another universal Commission check against the activation of latent effort. Each Commission ITT program establishes a maximum trap number above which no vessel may fish regardless of its willingness and/or ability to purchase latent traps. All transferability programs place a maximum trap limit on vessels in their respective LCMAs.

- *Debit of seller's trap allocation following a sale.* Another measure to balance against effort increase is the Commission's decision to debit the seller's trap allocation in all lobster management areas after a sale. As stated in Addendum VII and Addendum XII (Appendices 2 and 3, respectively), a single lobster vessel operating as a single business shall be considered to have a single indivisible history regardless of the number of LCMAs fished or different LCMA trap allocations received. In other words, because of the differing criteria used in the various LCMA Limited Access Programs, a single fishing business might be allocated exponentially more traps than the vessel ever fished if that vessel were allowed to treat LCMA allocations as being independent and separately divisible. If that vessel were allowed to transfer traps in one area without it affecting the trap allocations in another area, new effort would be spawned.[110] Accordingly, the Commission mandated that all seller trap allocations be reduced upon the sale in one area. Further, the Commission specifically addressed the need to avoid unwanted shifts of effort into the LCMA 1 fishery, which under the proposed ITT measures could be the only LCMA remaining without a limited access program.[111] In accordance with Commission language approved under Addendum XII, therefore, Alternative 2 would require that any Federal permit holder who sells a partial trap allocation will no longer be authorized to elect to fish traps in LCMA 1; transfers of a "full lobster business" would not make the seller ineligible to fish with traps in LCMA 1.

- *Prohibition against monopolies.* Prohibit the development of monopolies by limiting the number of traps that can be transferred to a concentrated group of individuals.

- *Prohibition against leasing.* Finally, the Commission sought to prevent leasing of traps. Trap leasing could activate latent effort in the same way that unchecked transferability could activate latent effort. Specifically, an individual could lease the remainder of his or her unused traps for a fee, thus activating that lobster fisher's latent effort. In fact, leasing could

[110] This situation is similar to the paradigm that is commonly referred to as the "Pregnant Boat Syndrome." The "Pregnant Boat Syndrome" is where a single dually permitted fishing business sells off either its federal or state permit to someone else. Under such a scenario, the new permit holder fishes the maximum traps allowed under the transferred permit (e.g., 800 traps) and the original permit holder fishes the maximum number of traps under the retained permit (e.g., 800 traps). Accordingly, a single dually permitted vessel fishing 800 traps maximum has now spawned double the effort (800 traps under each permit). The Pregnant Boat Syndrome is analogous to the trap scenario here in that more traps would be transferred and activated than were ever originally fished.

[111] See Addendum XII, Section 4.4.

create a transferability loop hole insofar as leasing would allow traps to be, in essence, transferred without having to pay a conservation tax.[112]

Request for Public Comment #1

Trap Cap for LCMA 3 under ITT

The ITT alternatives evaluated in this DEIS include a trap cap for LCMA 3, which is reflective of the trap cap approved by the Commission for this management area under Addendum XIV (see Appendix 5).

While NMFS seeks public comment on any and all issues relevant to this DEIS analysis, the agency also requests, in particular, public comment on the LCMA 3 trap cap provision as proposed under Federal lobster management herein.

Database Tracking System: NMFS believes that the establishment of a non-Federally managed database system is a pre-requisite to the approval of any Federal ITT program for the American Lobster fishery. This database would be necessary to allow resource managers to track trap transfers across jurisdictions (e.g., state-to-state, or any transfer involving a dual permit holder); without it, the management of LCMA-wide ITT programs would become overly burdensome and potentially chaotic.

The following conditions would apply as a pre-requisite to any Federal approval of an ITT program for the American Lobster fishery:

- All jurisdictions would have access to this database, in accommodation with state confidentiality requirements;
- Continual funding must be guaranteed (i.e., long-term funding must be allocated to ensure ongoing operational support);
- Dedicated staff is on call to answer questions regarding the database.

Request for Public Comment - #2

Database Tracking System

NMFS believes that a database tracking system that will allow resource managers to track and monitor trap transfers across Federal and state jurisdictions should be centrally developed and maintained. The source of its ongoing support and management should be considered in public forums, including public comments on this EIS.

While NMFS seeks public comment on any and all issues relevant to this DEIS analysis, the agency also is asking in particular for public comment on the database issue in general and on the pre-requisite conditions described above.

[112] The Commission also disfavored leasing because it believed that leasing would be a new practice out of character with the way the lobster fishery has traditionally been prosecuted.

The potential regulatory, biological, economic, and social impacts of the proposed alternatives for a Federal ITT program for American Lobster are discussed more fully below.

4.4.1 ITT Alternative 1 – No Action

Table 4.4 - Comparison of ITT-No Action in Combination with Different LAP Alternatives

		ITT No Action w/LAP 1- No Action	ITT No Action w/LAP 2 - Commission Alt	ITT No Action w/LAP 3 – Qualify Only
Qualified Permit Holders	Federal Program	Up to 3200 A3 – N/A	26 – OCC 207 – A2 137 – A3	26 – OCC 207 – A2 137 – A3
	State Program	170 – OCC* 431 – A2* N/A – A3	26 – OCC 207 – A2 N/A – A3	26 – OCC 207 – A2 N/A – A3
Allocated Traps	Federal Program	Up to 2.5 mil N/A – A3	Initially: 13053 – OCC 125791 – A2 208458 – A3 Unknown thereafter	Initially: 20800 – OCC 165600 – A2 208458 – A3 Unknown thereafter
	State Program	13600 – OCC 344800 – A2 N/A – A3	Initially: 13053 – OCC 125791 – A2 N/A – A3 Unknown thereafter	Initially: 20800 – OCC 165600 – A2 N/A – A3 Unknown thereafter

* Based on 2007 Federal data.

Regulatory Impacts

Potential regulatory impacts would be from the degree to which the management measures are compatible with the ASMFC-passed measures under the ISFMP, components of which are currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

MODERATE-TO-MAJOR, ADVERSE, LONG-TERM, DIRECT REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

Under this alternative, no Federal ITT program would be implemented. State-level ITT programs, currently in LCMA 3 and OCC, would continue. At the Federal level, up to 3200+ Federal permit holders (depending on whether a Federal LAP program is in place) would maintain their existing allocation of up to 800 traps each. Under this scenario (which represents the status quo), only the transfer of a fisher's lobster permit and its associated entire Federal trap allocation would be allowed; partial Federal trap allocation transfers would remain prohibited.

Key to understanding the potential regulatory impacts under the No Action ITT alternative is that ITT programs could or would occur at the state level, regardless of their absence at the Federal level. Various

states would thus manage their lobster fishery subject to their own history-based determinations of who qualifies for how many traps (in accordance with the Commission-approved measures), while at the Federal level, up to 3200+ Federal permit holders could "transfer" a fishing vessel with a Federal lobster permit (or a valid Federal lobster permit that is currently in CPH[113]), its associated fishing history and all traps associated with the Federal lobster permit. As a result, under this alternative, significant differences (or "disconnects") between the administering of state and Federal lobster industry management programs are expected. Though under any combination of ITT and limited access programs, NMFS believes that some amount of disconnect will exist between the number of traps the states allocate to the fishery overall versus what will be allocated under a Federal program—because of the disparity in how the states administer their individual programs (discussed above)—under ITT No Action, this disconnect is potentially the greatest, as Table 4.4 illustrates.

Compatibility with ASMFC-Approved Measures

Alternative 1-No Action would deviate substantially from measures outlined in the Commission's ISFMP and associated state regulations establishing ITT programs; as such, by definition, Alternative 1-No Action rejects the proposed measures to implement compatible regulations. As with the No Action-LAP alternatives, No Action-ITT would facilitate a growing divergence between Federal-state management of the American Lobster fishery. The regulatory impacts of this on management, administration, and enforcement are in many ways parallel to those described under the LAP alternatives analysis: Federal and state management objectives would differ substantially and coordination and unified management of a shared but unaligned program would become increasingly difficult. In the case of No Action under ITT, however, the severity of these impacts are more pronounced as a result of the compounding effects that multiple transfers within state waters might have in the absence of a compatible Federal ITT program. With each state transfer of a partial trap allocation under a state ITT program, the disconnect between what the Federal program has authorized for an individual trap allocation and what the state has authorized will expand; this disparity will become even greater as the states apply the 10% conservation tax per transfer, as approved under the Commission measures.

As a result of these differences between Federal and state management programs, management, administrative and enforcement objectives would become more difficult to achieve, as described below:

Management Impacts

Under Alternative 1-No Action, the difficulties in managing a shared, but unaligned, state-Federal program for the American Lobster fishery will become more pronounced for the reasons described above. Analytic tools to quantitatively predict the impacts from this inability to align the programs are unavailable; however, based on "best professional judgment," we believe that the potential impacts to management of the American Lobster fishery can be qualitatively described, as follows:

- The American Lobster fishery is a joint state-Federal resource and the need for cooperative and coordinated management is reflected in the Atlantic Coastal Act and the Commission's ISFMP Charter. Because it rejects proposed measures to implement regulations that are compatible with the Commission states, Alternative 1-No Action could be viewed as a refutation of the cooperative principles upon which lobster management is based. On the other hand, it should be noted that nothing in the Atlantic Coastal Act or ISFMP Charter obligates the Federal government

[113] Confirmation of Permit History. A confirmation of permit history is required when a vessel that has been issued a limited access permit has sunk, been destroyed, or been sold to another person without its permit history and a new vessel has not been purchased. **Possession of a confirmation of permit history will allow the applicant to maintain permit eligibility without owning a vessel. An application for a confirmation of permit history must be received by the Regional Administrator no later than 30 days prior to the end of the first full fishing year in which a vessel's permit cannot be issued.**

to rote adherence to every aspect of the Commission's Lobster Plan, and there have been past occasions where NMFS rejected a Plan recommendation or added a measure that was not recommended.

- Where state and Federal programs grow increasingly out-of-sync with each other in terms of management objectives and basic accounting of who is qualified to fish how many traps, NMFS believes that joint management of the American Lobster resource under Alternative 1 would become unwieldy. Further, NMFS has commented in the past that "disconnects" such as those described above could lead to jurisdictional chaos in the LCMAs.[114]

- Because it would not allow the transfer partial allocations of traps within Federal waters of any LCMAs, Commission states may believe that Alternative 1-No Action would frustrate the effectiveness of such programs at the state level.

Request for Public Comment - #3

Approval of the No-Action Alternative for ITT

While NMFS seeks public comment on any and all issues relevant to this DEIS analysis, the agency is also requesting in particular that the public comment on the potential impacts of inter-jurisdictional management of the American Lobster fishery should a Federal ITT program not be implemented.

Administrative Impacts

Because of the potential for both the number of qualified fishers and traps allocated to be substantially out-of-sync between Federal and state management programs under ITT Alternative 1, the administrative burden on affected state and Federal jurisdictions is expected to increase under this option. Under the various LAP alternatives described in Section 4.2-OCC and Section 4.3-LCMA 2, there will be disconnects between what state and Federal programs have authorized in terms of who qualifies to fish how many traps. There may or may not be, for example, a cap on the potential number of Federal permit holders, ranging from a low of 26 in the OCC LCMA under LAP Alternative 2-Commission and LAP Alternative 3-Qualify Only, to no cap or a high of 3200+ Federal permit holders under LAP Alternative 1-No Action (Table 4.2) who would still be authorized by NMFS to elect to fish with traps in the OCC on their Federal permit. A similar situation would occur in LCMA 2, where access would vary depending on the LAP alternative, ranging from a high of 3200+ Federal permit holders under LAP Alternative 1-No Action, to a low of 207 Federal permit holders under LAP Alternative 2-Commission and LAP Alternative 3-Qualify Only, who would continue to be authorized by NMFS to fish with traps in LCMA 2 (Table 4.3).

In addition to the disconnects over the cap on participants, there would be a state-Federal disconnect on the number of traps "authorized." For both LCMA 2 and OCC, Federal permit holders would still be authorized to fish up to 800 traps under LAP Alternative 1 and 3-Qualify Only, in conflict with the ISFMP and state regulations. Even under LAP Alternative 2, where state and Federal measures would be compatible with the ISFMP, consistency would only continue as long as affected states freeze state-

[114] Letter from Patricia A. Kurkul, Northeast Regional Administrator, NMFS to John V. O'Shea, Executive Director, ASMFC. April 23, 2007. Attached as Appendix 12 (NMFS 2007b).

assigned trap allocations. If states implement the Commission's recommended conservation tax on transfers, for either whole businesses or partial trap transfers, or attempt to implement a state-only ITT program, inconsistent state-Federal trap allocations would result.

Due to the potential qualification and allocation conflicts noted above and in Sections 4.1 and 4.2, the administrative burden would increase for the Federal government and for all states with a joint State-Federal Trap Tag Memorandum of Understanding (MOU) under ITT Alternative 1-No Action. As noted above, the status quo Federal measures proposed in ITT Alternative 1-No Action would not recognize partial trap transfers or conservation tax reductions that may occur under a state-only ITT program.

States may refuse to issue tags to state 'non-qualified" Federal lobstermen or a dual permit holder that has a lower state trap allocation. As discussed in more detail in Section 2.1-Administrative Impacts, the affected dual permit holder, who is legally prohibited by his state from fishing in the LCMA OCC or LCMA 2 under state law, may subsequently be authorized to fish the Federal waters of the relevant LCMA by NMFS if the state/Federal trap allocations are not compatible.

Enforcement Impacts

Similar to the administrative impacts described above, enforcement of the lobster trap fisheries in the LCMAs would likely become more onerous for state marine fisheries and law enforcement and Federal management and law enforcement staff as the number of qualified fishers and traps allocated become substantially out-of-sync across jurisdictions under ITT Alternative 1. As a result, some unknown level of increased coordination and additional time required to verify permit/trap tag status for individual fishers will likely be necessary. In addition, inter-jurisdictional regulations that are increasingly complicated and confusing for the regulated industry, such as would likely would result under Alternative 1-No Action, may facilitate an increase in fisheries violations and additional fishing effort on the resource.

More specifically, dockside and on-the water enforcement may need to increase to confirm traps in the water conform to the most restrictive measures in place. State enforcement officers, working dockside and on the water, would likely be most familiar with the state and Commission ISFMP, and would be most likely to effectively enforce the state regulations. In contrast, NMFS OLE officers, working primarily dockside, would likely be most familiar with the Federal lobster regulations and may not be as familiar with the state regulations or the ISFMP that may differ from Federal regulations. The U.S. Coast Guard (USCG) would be the agency responsible for at-sea enforcement of lobster regulations in the EEZ. With enforcement and oversight responsibilities over broad geographic areas, the USCG would likely be most familiar with the Federal lobster regulations and may not be as familiar with the more restrictive state lobster regulations.

Finally, a state jurisdiction may or may not be able to effectively enforce a lower state trap limit. If one state is more effective at enforcement, it is possible some unknown number of Federal permit holders may forfeit their state coastal license and relocate to a state that may not aggressively administer and enforce the limited access and trap allocation restrictions. Given the different set of measures that would be in effect under state and Federal regulations, and the complex logistics of issuing trap tags for up to seven areas, it may be possible for vessels to elect and to acquire trap tags authorizing access to fish with traps in the LAP LCMAs unless there is aggressive administrative oversight by all affected regulatory agencies.

Biological and Physical Impacts

Potential impacts on biological and physical resources would occur from the degree to which management measures might alter the number of traps in the water or their geographic location, including their concentration in any one area. Indirect biological impacts relate to the amount of effort (harvesting)

within the fishery. Indirect physical impacts relate primarily to the impacts that the placement of lobster traps have on the ocean bottom. Indirect impacts relate to the potential effect on other species (by-catch or bait fish) from changes in level of effort, as well as the potential impacts that lobster gear (such as buoy lines) have on other species, such as marine mammals.

Because of the potential for both the number of qualified fishers and traps allocated to be substantially out-of-sync between Federal and state management programs, the potential activation of latent effort becomes an important issue under Alternative 1-No Action, particularly where the dual permit holder (someone with both a Federal and state permit) is concerned. Any scenario that results in differences between the numbers of traps a state allocates to fishers versus the number of traps allocated under the Federal program expands potential latent effort. Because, under this option, there is a greater potential for the activation of latent effort, minor biological impacts across the spectrum of lobster-related resources under Alternative 1-No Action for ITT are possible, discussed in more detail below.

Lobster

Biological Impacts

MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

Indirect impacts on the American Lobster population under Alternative 1 would vary depending on which LAP alternative is in place under a Federal program (see Sections 4.1 and 4.2 for discussion of LAP alternatives). While some amount of disconnect between the number of fishers qualified and the number of traps allocated across state and Federal jurisdictions is expected under any of the LAP programs considered earlier, under ITT-No Action combined with LAP-No Action, that disconnect is the greatest and, thus, the potential for increased effort is greatest under this scenario. In this event, dual permit holders would have greater incentive to sell partial or full trap allocations under a state ITT program, while continuing to be authorized to fish up to their full allocation at the Federal level, activating an unknown amount of latent effort within the fishery. When other LAP alternatives are combined with ITT-No Action, the number of qualified fishers and allocated traps is substantially reduced relative to above and, thus, the potential for added effort, while still there, is substantially reduced.

Any increase in effort within the American Lobster fishery will add population pressure to lobster stocks. The biological stock area where this would be of most concern is Southern New England (SNE). For the LCMA 2, which lies entirely within the SNE stock complex, any potential for increased effort is a particular concern. Under Alternative 1-No Action, anywhere from 431 (based upon 2007 data) to over 3,200 Federal permit holders (based upon total Federal permits) could potentially be fishing up to 800 traps per permit – meaning that managers would have to assume that anywhere from 345,000 to 2,400,000 traps could fish in any given year.

Physical Impacts

MINOR, ADVERSE, LONG-TERM, INDIRECT PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

In terms of physical impacts, minor, long-term, adverse, direct impacts to lobster habitat would occur under ITT Alternative 1-No Action as a result of any additional lobster gear that would accompany any increase in lobster fishing effort. While there have been few studies on the effect of lobster traps on the ocean floor, available information suggests trap gear, including the lobster traps used in the commercial lobster fishery, tend to have limited long term adverse impacts on the seafloor habitat, particularly when

compared with mobile fishing gears such as trawls and dredges. When traps were dragged over the bottom they left tracks, but commercial trap gear appeared to have no negative effect on the abundance of attached benthic epifauna. (Eno et al., 2001). An increase in trap fishing effort may also result in a small increase in lost trap gear. Gear could be lost due to weather, gear conflicts with mobile fishing gear, or due to retaliation for setting traps in this highly territorial fishery. However, to mitigate impacts, Federal lobster regulations do mandate a biodegradable ghost panel in the outer parlor of the trap to allow lobsters and forage species to escape ghost gear.

Protected Species

MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED AS A RESULT OF A POSSIBLE INCREASE IN FISHING EFFORT UNDER ALTERNATIVE 1-NO ACTION.

As stated above, the potential for increased fishing effort in terms of numbers of traps fished in the American Lobster fishery under Alternative 1-No Action varies depending on which Federal LAP program would be in place. Any amount of added traps in the water, however, means added associated gear, including vertical lines that increase the risk of entanglement for protected species.

As stated earlier, while some amount of disconnect between the number of fishers qualified and the number of traps allocated across state and Federal jurisdictions is expected under any of the LAP programs considered earlier, under ITT-No Action combined with LAP-No Action, that disconnect is the greatest and, thus, the potential for increased effort is greatest. It is under this scenario that the potential for increased vertical lines in the water is therefore also the greatest, and the protected species population is sensitive to the threat of entanglement. (See Sec 3.5 of this DEIS for discussion regarding impacts to protected species from entanglement in fishing gear). When other LAP alternatives are combined with ITT-No Action, however, the potential for added effort, while still there, is substantially reduced and, in those circumstances, NMFS believes the potential impacts to protected species from increased threat of entanglement are likely to be minor.

By-Catch Fish

MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO BY-CATCH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

As stated above, the potential for increased fishing effort in terms of numbers of traps fished in the American Lobster fishery under Alternative 1-No Action varies depending on which Federal LAP program would be in place. Any amount of added traps in the water, however, means that there will be a proportionate increase in the amount of by-catch within the fishery.

As has been noted, the potential for increase effort is greatest under ITT-No Action when combined with a LAP- No Action alternative. While the extent to which latent effort will be triggered is unknown, given that the potential for significant increases in effort is greatest under this scenario, NMFS believes that moderate increases in by-catch are possible. Nonetheless, NMFS believes that this increase will not be significant enough to adversely affect population levels for those species and thus its impact will be minor.

When other LAP alternatives are combined with ITT-No Action, the potential for added effort, while still there, is substantially reduced and, in those circumstances, NMFS believes the potential impacts to by-catch species from increased fishing effort in the American Lobster fishery will be minor-to-negligible.

Bait Fish

MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

As stated above, the potential for increased fishing effort in terms of numbers of traps fished in the American Lobster fishery under Alternative 1-No Action varies depending on which Federal LAP program would be in place. Any amount of added traps in the water, however, means that demand will proportionately increase for any bait fish species used by the fishery.

Bait, including herring, skates, and fish frames, is used in lobster traps to attract lobsters and it is an important component of the lobster fishery (see also Section 3.4.2). As has been noted, the potential for increase effort is greatest under ITT-No Action when combined with a LAP- No Action alternative. While the extent to which latent effort will be triggered is unknown, given that the potential for significant increases in effort is greatest under this scenario, NMFS believes that moderate increases in demand for bait fish is possible. Nonetheless, NMFS believes that this increased demand will not be significant enough to adversely affect population levels for those species and thus its impact will be minor.

When other LAP alternatives are combined with ITT-No Action, the potential for added effort, while still there, is substantially reduced and, in those circumstances, NMFS believes the potential impacts to bait fish species from increased demand will be minor-to-negligible.

4.4.2 Alternative 2-Commission Alternative

Under this alternative, an ITT program would be administered in Federal waters for the American Lobster fishery and, as such, Federal permit holders would be allowed to transact both whole and partial trap transfers within the Federal fishery. This option assumes that both steps 1 (qualify fishers) and 2 (allocate traps) have taken place in accordance with Commission-approved measures (as described in Sections 4.2 and 4.3). For purposes of this analysis, it is further assumed that Commission states will also be implementing ITT programs within state waters for the American Lobster fishery.

Latent Effort: Because Alternative 2 would result in coordinated state and Federal ITT programs, the divergence in lobster management programs across jurisdictions, as described under ITT-No Action, would be largely diminished (though some disconnects would remain, discussed further below). At both the state and Federal levels, fishers would be qualified and traps would be allocated based on historic fishing practices, in accordance with Commission-approved criteria, and the gap between Federal and state numbers would narrow substantially. As a result, the potential for latent effort to be activated under an ITT program shrinks significantly under this option.

Potential for Effort Shift into LCMA 1: Addendum XII (Section 4.3.3) of the Commission ISFMP states that any permit holder who transfers a partial or full trap allocation from any LCMA will have all other LCMA-specific trap allocations reduced/debited by the same amount. This requirement was instated so as to avoid a "pregnant boat" scenario that would result in increased effort in the fishery overall.[115] Addendum XII also addresses the effect of transferring ITT traps on LCMAs without an individual trap allocation, like LCMA 1. Section 4.4 of Addendum XII specifies, as outlined in Table 4.5 of this DEIS, that the seller of any LAP/ITT traps be prohibited from electing to fish with traps in LCMA 1.

[115] See also footnote 110 for discussion of "pregnant boat syndrome."

Table 4.5
The Effect of Permit & Trap Allocation Transferability
on LCMAs without History-Based Allocations

Seller Current Trap cap or Allocation:	Transfers:	Seller Trap Allocation:	Assume 10 % Transfer Tax*:	Buyer Trap Allocation:
800 LCMA 1 Trap cap – not an allocation)		Ineligible to fish in LCMA 1		
400 LCMA 2		200 LCMA 2		
1200 LCMA 3 Allocation	200 LCMA 3	1000 LCMA 3	20	180 LCMA 3

Regulatory Impacts

Potential regulatory impacts would be from the degree to which the management measures are compatible with the ASMFC-passed measures under the ISFMP, components of which are currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

MODERATE, BENEFICIAL, LONG-TERM, DIRECT REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 2- COMMISSION ALTERNATIVE.

As stated above, Alternative 2 would substantially reduce the divergence in lobster management programs across jurisdictions described under ITT-No Action, though some disconnects are expected to remain (discussed below). At both the state and Federal levels, fishers would be qualified and traps would be allocated based on historic fishing practices, in accordance with Commission-approved criteria, and the gap between Federal and state numbers would narrow substantially.

Compatibility with ASMFC-Approved Measures

Alternative 2-Commission Alternative would approve Federal lobster management measures that are largely identical to those approved by the Commission; as a result, this alternative would allow for a substantially (though not entirely) unified state-Federal ITT Program. Lobster permit and/or trap transfers under both state and Federal programs would be largely consistent with the ISFMP and fishing effort for qualified fishers would be capped at historic trap levels across all jurisdictions (except for LCMA 1), in accordance with Commission-approved ISFMP criteria. Nonetheless, NMFS believes that potentially inconsistent administration of ITT programs across jurisdictions, discussed below, could frustrate efforts to implement a unified state-Federal ITT program and that joint management, administration, and enforcement of the lobster fishery across state/Federal jurisdictions could remain difficult under this option. These issues are discussed in greater detail below.

Potential Inconsistencies in State Implementation: Alternative 2 would implement ITT management measures for the American Lobster fishery that are intended to be fully compatible with ASMFC-approved measures. Nonetheless, NMFS believes that some disconnects will still likely occur - most notably on dually held state and Federal permits. As a preliminary matter, the Federal and state governments are sovereign and independent. This means that no matter how the states and NMFS

cooperate, each have to make their own separate and independent decisions on permit holder applications according to their separate and independent laws. As stated earlier in Chapter 4, it is unlikely that NMFS will be able to follow its own federal laws and regulations and independently be able to duplicate the various state qualification and allocation decisions that the states have made under state laws and regulations. While NMFS expects much higher consistency under this Commission Alternative than the No Action Alternative, there will nevertheless likely be some permit holders who have qualified under one entity's program, but not another's, and some number of dual permit holders who have been allocated more traps under one permit than the other permit. NMFS believes, however, that several measures passed under the ISFMP could result in certain inconsistencies in how states administer ITT across LCMAs, which could in turn frustrate efforts to implement a unified state-Federal ITT program, as follows.

- *Medical Appeals*

  Under any qualification and allocation process there are provisions allowing fishers to appeal an outcome. The most common uses of appeals are medical (e.g., lengthy incapacitation during the proposed qualifying period) and military (e.g., unable to work when on a military tour of duty). If multiple (state) jurisdictions apply different standards to their review of applicant appeals (because of lack of specificity in the ISFMP or other unspecified reasons), lobstermen, though they have similar trap fishing histories, may ultimately receive different trap allocations or one may be qualified for continued access rights while another is denied. Addendum XII responds to this concern by combining the use of the Most Restrictive Rule with a requirement that all transfers, full or partial, be approved by every involved jurisdiction (state(s) and/or NMFS) before the transfer is finalized (see Addendum XII, Sections 4.2 and 4.3.3.5, respectively). In effect, if the state and Federal final qualification decision and/or final individual trap allocation determination varies, dual permit holders are bound to abide by the more restrictive final determination.

- *Restricted vs. Full Participation in ITT transfers*

  Based on NMFS's review of the ISFMP addenda, for the LCMA OCC, "No new participants will be permitted to partake in the OC lobster fishery without receiving trap tags through a transfer from those fishing within the established total trap cap" (Addendum III Section 2.1.7.3-*Annual Trap Transfer Period and Passive Reductions*). NMFS believes that it is not clear from this language whether the Commission intended to restrict transfers and participation only to those previously qualified or allow all 3200+ Federal permit holders to participate if they legitimately acquired a trap allocation (trap tags) through a transfer from a qualified OCC participant.

  Also unclear is how the language from Addendum III, above, would relate to the language used in other Addenda for LCMAs 2 and 3 regarding who may participate in an ITT program. For LCMA 2, the language is clear in its intent: "(n)othing shall prevent a holder of a federal permit without a pot allocation from acquiring pots from an allocation holder once a transferability program is accepted and implemented" (Addendum VII Section 4.1.1.1(iv)-*Qualification for Area 2 Permits*). For LCMA 3, Addendum IV states the following: "(t)he purchase of qualified Area 3 traps, by and individual with a Federal lobster permit, regardless of fishing history in Area 3, will automatically qualify the purchaser to fish that number of qualified Area 3 traps within LCMA 3, once trap tags are issued (Section 4.2.11-*Qualification*)."

- *Annual Trap Transfer Application Deadline*

  Under Addendum XII all trap transfer applications are to be completed and submitted to the primary state agency by October 30th of each year, while Addendum XIV specifies the trap transfer deadline for the OCC will be November 30th.

- *Minimum Number of Transferable Traps per Transaction*

  For the LCMA OCC, the Commission-approved addenda provide no specific reference to a minimum number of traps per transfer, while for other LCMAs, approved language provides clearer guidance. For example, Addendum XIII states that fishers with OCC trap allocations may transfer some or all of their allocation to other lobstermen in 50 trap increments (Section 4.1.5). For LCMA 3, Addendum IV states: "….a transfer must be comprised of a minimum of 50 traps" (Section 4.2.1-Minimum Transfer).

- *Permits with a < 50-Trap Allocation*

  For the LCMA OCC, Addendum XIII (Section 4.1.5-*Transfer Programs*) specifies that any seller with less than 50 traps shall have the remaining trap allocation and the permit retired. In contrast, Addendum XII (Section 4.3) allows all transferable traps to be sold and the lobster permit, with a zero trap allocation, would be retained by the seller for possible future acquisition of additional transferable traps.

  Permanent retirement of a Federal lobster permit has broad impacts, since there is only one Federal lobster permit and each of the seven LCMAs represent a category under the one permit. In addition, Federal permit holders are frequently authorized to fish in multiple LCMAs. A requirement to "retire" or eliminate the Federal lobster permit when "all" transferable traps associated with one transferable trap allocation in one LCMA are sold would potentially eliminate access and fishing rights that are still valid in other LCMAs.

- *Choose and Use - Federal permit holders required to elect all qualified LCMAs on their permit even LCMAs with a zero trap allocation*

  Addendum III (Section 2.1.3.4-*Choose and Use Provision*) states: "Once qualified for historic participation in Area 3, a federal permit holder requesting an Area 3 designation is required to permanently designate Area 3 on his/her federal permit. Federal permit holders have a one-time opportunity to drop the Area 3 designation. In addition, when an Area 3 permit is sold or transferred, permanent designation can be reconsidered, which allows the new owner the decision of whether they wish to designate Area 3 or not on his/her federal permit." The ISFMP has no similar "Choose-and-Use" requirement for any of the other LCMAs.

- *Trap Haul-Out Period*

  Addendum XIII of the ISFMP specifies that there be a lobster trap haul-out period for the LCMA OCC: "Fishermen shall be required to remove all lobster traps from waters of the OCC LCMA during January 15th through March 15th. It shall be unlawful for any fisherman to fish, set, or abandon any lobster traps in the OCC LCMA during this seasonal closure." (Section 4.1.6-*Trap Haul-out Period*) The ISFMP-specified trap haul-out provision is primarily intended to facilitate monitoring and enforcement of the LCMA OCC limited entry program and verify that individual lobstermen are in compliance with their assigned trap allocations. As OCC lobstermen return their traps to shore, each trap can be easily checked for a valid trap tag, and OCC LCMA lobster permits can also be verified. However, the ISFMP only specifies the trap haul-out provision for the OCC LCMA; no other LCMAs have a similar requirement.

Request for Public Comment - #4

Potential Inconsistencies in ITT Implementation Across Jurisdictions

While NMFS seeks public comment on any and all issues relevant to this DEIS analysis, the agency also requests, in particular, public comment on the following topics, discussed above:

- Medical Appeals
- ITT participation (i.e., all permit holders or only "qualified" permit holders)
- Minimum Traps Per Transfer
- Annual Transfer Deadlines
- Permanent Loss of Federal Permit with <50 Traps
- Trap Haul-Out Requirements

While NMFS seeks public comment on any and all issues relevant to this DEIS analysis, the agency also is asking in particular for public comment on the medical appeals provisions discussed above.

Management Impacts

Under ITT Alternative 2, management of a shared state-Federal program for the American Lobster fishery across all LCMAs will be substantially improved. As stated earlier, the divergence in lobster management programs across jurisdictions, as described under ITT-No Action, would be largely diminished under this option. At both the state and Federal levels, fishers would be qualified and traps would be allocated based on historic fishing practices, in accordance with Commission-approved criteria, and the gap between Federal and state numbers (i.e., who qualifies for how many traps) would narrow substantially.

Nonetheless, NMFS believes that issues associated with separate state and Federal decision-making together with the disparity in addenda language, described above, could result in qualification and trap allocation numbers across state and Federal management programs that over time will diverge to some extent and that problems with the effective coordination of these programs could thus remain. In particular, NMFS believes that some of the state-specific and/or LCMA-specific management measures passed under the Commission language (identified above) will make coordination across jurisdictions difficult.

Administrative Impacts

In many ways, the administrative burden to state and Federal jurisdictions would decrease under Alternative 2-Commission Alternative, as Federal measures cap participation and cap individual trap allocations for dual permit holders consistent with the ISFMP. Federal measures proposed in ITT Alternative 2 would recognize partial trap transfers, and conservation tax reductions that may occur in OCC, LCMA 2, and LCMA 3. It is presumed the states and the Federal Government would review and approve transfers under a structured process to ensure consistency (see database tracking system discussion, Section 4.1). States would be more likely to continue to issue tags to Federal dual permit holders under the Trap Tag MOU, and all jurisdictions would implement compatible conservation tax

reduction under a structured program. Consistent state/Federal administration would also reduce the potential for any incentive to relocate fishing operations.

Nonetheless, because some disconnects will likely continue (as identified above), administrative challenges will remain under this option. For example, language found under Addendum XIII, Section 4.1.5, for the LCMA OCC requires that any seller under an ITT program with less than 50 traps remaining shall have those traps and his/her permit retired, while Addendum XII allows permits to be maintained with a zero trap allocation. Permanent retirement of a Federal lobster permit has broad implications, since that permit can hold fishing privileges in more than one LCMA. A requirement to "retire" or eliminate the Federal lobster permit as specified under the Commission language would potentially eliminate access and fishing rights that are still valid in other LCMAs.

Despite some specific challenges, such as described above, NMFS believes that the number and severity of potential qualification, allocation, and other conflicts would likely be limited and that the administrative burden would decrease for the Federal government and for all states (relative to No Action) with a joint State-Federal Trap Tag Memorandum Of Understanding (MOU) under ITT Alternative 2.

Enforcement Impacts

Alternative 2 is expected to have beneficial impacts in terms of program enforcement, due simply to the fact that the universe of lobster fishers and their fishing activities in Federal and state waters will be better defined and tracked under an joint state/Federal ITT program. Though NMFS believes some "disconnects" between state/Federal program management will remain, a better-aligned program (relative to No Action) will reduce the need for more on-the-water enforcement to confirm who is fishing how many traps and where.

Further, under Addendum XII (Section 4.3.3.5) all ITT transfers, full or partial, must be approved by every involved jurisdiction (state(s) and/or NMFS) before the transfer is finalized. In effect, if the state and Federal final qualification decision and/or final individual trap allocation determination does vary, dual permit holders are bound to abide by the more restrictive final determination and can be effectively identified through a central database, which NMFS assumes will be operational under any Federally approved ITT program.

Biological and Physical Impacts

Potential impacts on biological and physical resources would be from the degree to which management measures would alter the number of traps in the water or their geographic location, including their concentration in any one area. Direct biological impacts relate to the amount of effort (harvesting) within the fishery. Indirect physical impacts relate primarily to the impacts that the placement of lobster traps have on the ocean bottom. Indirect impacts relate to the potential affect on other species (by-catch or bait fish) from changes in level of effort, as well as the potential impacts that lobster gear (such as buoy lines) have on other species, such as marine mammals.

Under ITT Alternative 2, there will be a benefit to biological and physical lobster resources as a result of the more effective coordination and synchronization of management and enforcement and for the proposed conservation "tax" feature that is common among the ITT LCMAs that over time will reduce the number of traps in the water. Given this, NMFS believes in general that any short-term adverse impacts on biological and physical American Lobster resources from the proposed ITT management measures (for example, as a result of an increase in the activation of latent effort) will be minor-to-negligible. These issues are discussed in relation to specific resource areas, below.

Lobster

Biological Impacts

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT *AND* MINOR, ADVERSE, SHORT-TERM, INDIRECT BIOLOGICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

More effective coordination between state and Federal jurisdictions and the implementation of relatively uniform management measures would facilitate effective administration and enforcement within the lobster fishery. Regulatory inconsistencies such as described under Alternative 1-No Action would also be significantly reduced. Together, these improvements are expected to substantially reduce the potential for increased trap effort for the lobster fishery.

Further, while some latent effort remains under this option, NMFS believes that the potential short-term increase in number of traps actually fished will be off-set over time by the implementation of a conservation "tax," which under Alternative 2 ranges from 10-20% of the number of traps sold with each transfer.

Physical Impacts

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT *AND* MINOR, ADVERSE, SHORT-TERM, INDIRECT PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

As stated above, more effective coordination between jurisdictions and uniform measures would facilitate effective administration and enforcement and thereby significantly reduce the likelihood of state-Federal regulatory inconsistencies that might result in an increase in trap effort. Any potential increase in traps from latent effort would be minor and mitigated by other ITT provisions such as the conservation tax, most restrictive rule, the trap cap, and prohibition against leasing. With compatible state and Federal measures, there is also likely to be less gear in the water over time and therefore less likelihood of "ghost traps" or lost trap gear. Gear could be lost due to weather, gear conflicts with mobile fishing gear, or due to retaliation for setting traps in this highly territorial fishery. As noted previously, Federal lobster regulations do mandate a biodegradable ghost panel in the outer parlor of the trap to allow lobsters and forage species to escape ghost gear.

Protected Species

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT AND MINOR, ADVERSE, SHORT-TERM, INDIRECT BIOLOGICAL AND PHYSICAL IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

A number of measures under Alternative 2-Commission Alternative will contribute to an overall beneficial impact on protected species. As stated above, more effective coordination between state and Federal jurisdictions and the implementation of relatively uniform management measures would facilitate effective administration and enforcement within the lobster fishery. Regulatory inconsistencies such as described under Alternative 1-No Action would also be significantly reduced. Together, these improvements are expected to substantially reduce the potential for increased trap effort within the lobster fishery. Though some latent effort is expected to remain under this option, NMFS believes that the potential short-term increase in number of traps actually fished will be off-set over time by the

implementation of a conservation "tax," which under Alternative 2 ranges from 10-20% of the number of traps sold with each transfer.

At the same time, NMFS recognizes that under an ITT program, it could be possible for a trap allocation to be sold to a fisher who fishes a smaller number of traps (i.e., someone who has historically fished strings of, say, 20 traps could sell to someone who could split those strings into smaller increments) and in this way, vertical lines could be added to the water. By the same token, however, the reverse is also possible. In general, NMFS believes that there is no reason to expect that fishers will change how they have historically fished their gear; thus, on balance, we do not anticipate that an ITT program will measurably increase the number of vertical lines and thereby add to the threat of entanglement for protected species.

Finally, the OCC Trap Haul-Out provisions under Alternative 2 (see discussion above) would also seasonally reduce the amount of vertical lines in the water, at least within the LCMA OCC. Under these provisions, the ISFMP and Massachusetts state regulations specify that there be a lobster trap haul-out period on the LCMA OCC: "Fishermen shall be required to remove all lobster traps from waters of the LCMA OCC during January 15th through March 15th. It shall be unlawful for any fisherman to fish, set, or abandon any lobster traps in the OCC LCMA during this seasonal closure." Compatible regulations would reduce the likelihood of inshore trap fishing effort shifting to the Federal waters of the OCC to avoid compliance. Gear removal during this period would decrease the risk of entanglement.

By-Catch Fish

MINOR, BENEFICIAL, LONG-TERM, INDIRECT AND NEGLIGIBLE, ADVERSE, SHORT-TERM, INDIRECT IMPACTS TO BY-CATCH FISH WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

More effective coordination and uniform measures across jurisdictions and uniform measures would facilitate effective administration and enforcement and thereby significantly reduce the likelihood of state-Federal regulatory inconsistencies that might result in an increase in trap effort. However, as noted previously, the discard mortality rates (the percentage of discarded animals that die) associated with animals caught in traps is low, particularly when compared against the mortality rates linked with mobile fishing gears such as trawls and dredges. In addition, if traps are lost, Federal lobster regulations mandate a biodegradable ghost panel to allow lobsters and forage species to escape ghost gear. The number of animals that die after being caught and discarded in the American lobster fishery appears small compared to actual lobster landings.

Bait Fish

MINOR, BENEFICIAL, LONG-TERM, INDIRECT AND NEGLIGIBLE, ADVERSE, SHORT-TERM, INDIRECT IMPACTS TO BAIT FISH WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

More effective coordination and uniform measures across jurisdictions, and uniform measures would facilitate effective administration and enforcement and thereby significantly reduce the likelihood of state-Federal regulatory inconsistencies that might result in an increase in trap effort as was noted in ITT Alternative 1. It is likely that if trap fishing effort does decrease over time, there would be a proportionate decrease in the use of lobster bait. This decrease in the demand would likely to have a minor, long-term, beneficial, indirect impact on bait fish species.

4.4.3 ITT Alternative 3-Transferability for LCMA 3 Only

Under this alternative, a Federal ITT program would be administered within the LCMA 3 only and as such would be administered primarily by NMFS. State-level ITT programs, currently in LCMAs 2 and OCC, would continue. In addition, the following measures would be approved:

- LCMA 3 qualifiers (i.e., those qualified to fish in the LCMA 3 under a limited access fishery) may *sell* traps either through a "partial trap transfer" or the sale of a "complete lobster business," as defined in Addendum XII (See Appendix 3, Section 4.3).

- The *buyer* of either a LCMA 3 partial trap transfer or a complete lobster business would be subject to a conservation tax and maximum trap cap for LCMA 3 as specified in Addendum XIV.
- For *buyers*, a conservation tax of 20% would be assessed for each partial transfer of traps in LCMA 3, and a conservation tax of 10% would be assessed for the sale of a complete lobster business.
- Allocations per vessel will be capped at 2000 traps.[116]
- NMFS is proposing to allow all 3200+ Federal permit holders be eligible to participate in the ITT trap transfer program, regardless of prior fishing history in the LCMA, as specified in Addendum IV.
- NMFS is proposing to establish a 50 trap increment as the minimum number of individual transferable traps that may be transferred in any partial trap allocation, as specified in Addendum IV.
- Leasing of traps is prohibited.
- NMFS is proposing to complement Addendum XII that would allow Federal permit holders to retain a qualified LCMA specific lobster permit with a zero trap allocation associated with it.

- Finally, this alternative also includes details of an anti-trust provision that seeks to prevent the consolidation of effort by prohibiting businesses from owning more than five (5) LCMA 3 permits, although any business owning more than five (5) permits before December 2003 is exempt from this prohibition.

Alternative 3 attempts to respond to a finding that the inability to entirely eliminate the "disconnects" between state and Federal LAP and ITT programs under any of the other alternatives considered in the EIS would result in unacceptable impacts, either on the regulatory setting or on resources for American Lobster. Since steps 1 (qualify) and 2 (allocate) have already occurred in the LCMA 3 (under prior Federal rulemaking), a Federal ITT program confined to this management area would allow some partial trap transfers to occur within the Federal fishery under an already unified state/Federal management program. As such, this alternative is meant to reflect a compromise between absolute consistency with the Commission's ISFMP and the complete absence of any Federal ITT program.

Regulatory Impacts

Potential regulatory impacts would be from the degree to which the management measures are compatible with the ASMFC-passed measures under the ISFMP, components of which are currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal

[116] This is consistent with Commission-approved measures under Addendum XIV, passed May 5, 2009 (ASMFC 2009d).

management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

MODERATE, ADVERSE, LONG-TERM, DIRECT, REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 3-TRANSFERABILITY FOR LCMA 3 ONLY.

From a Federal-only perspective, without compatible state-Federal ITT management measures across all LCMAs to allow the transfer of traps to occur for Federal permit holders, an unaligned multi-jurisdictional Federal-state program would increase the potential risk for ongoing administrative confusion; with this, enforcement burdens would also increase.

Overall, the impacts from Federal implementation of ITT Alternative 3 would be similar to the impacts described in Section 4.4.1-ITT Alternative 1. The one difference is that Area 3 participants would, under Federal measures and the Commission's plan, be allowed to sell and/or purchase LCMA 3 transferable traps under ITT Alternative 3. However, lack of a unified ITT program across all affected LCMAs would adversely affect Federal permit holders, state, and Federal jurisdictions (see ITT Alternative 1).

Compatibility with ASMFC-Approved Measures

Alternative 3 would not implement ITT management measures for the American Lobster fishery in the LCMA OCC or LCMA 2 and would implement ISFMP recommended measures for LCMA 3. The need for consistency across all jurisdictions is discussed in greater detail in the Qualify-Only Alternatives for the LCMA OCC and LCMA 2 programs in Section 2.1 and 2.2. As discussed ITT Alternative 1-No Action, one could expect the risk of state/Federal incongruence to become multiplied with each passing limited access step, particularly given that the transferability step is not a single occurrence, but something that a permit holder might do every year. In LCMA 3, however, NMFS has already accomplished steps 1 (qualification) and 2 (allocation). Unlike in the LCMAs 2 and the OCC, where qualification and allocation have yet to occur, NMFS has already coordinated with the involved states to reach uniformly recognized allocation decisions for the LCMA 3. In other words, in LCMA 3, the states and NMFS could begin transferability working off the same numbers, thus greatly decreasing the threat of regulatory dysfunction that might occur were permit holders allowed to transfer allocations that the states and NMFS set differently.

Management Impacts

Under ITT Alternative 3 management impacts would be similar to the impacts described in Section 4.4.1-ITT Alternative 1.

Administrative Impacts

Under ITT Alternative 3 administrative impacts would be similar to the impacts described in Section 4.4.1-ITT Alternative 1.

Enforcement Impacts

Under ITT Alternative 3 enforcement impacts in the LCMA OCC and LCMA 2 would be similar to the impacts described in Section 4.4.1-ITT Alternative 1.

Biological and Physical Impacts

Potential impacts on biological and physical resources would be from the degree to which management measures would alter the number of traps in the water or their geographic location, including their concentration in any one area. Indirect biological impacts relate to the amount of effort (harvesting) within the fishery. Indirect physical impacts relate primarily to the impacts that the placement of lobster traps have on the ocean bottom. Indirect impacts on other species (by-catch or bait fish) relate to changes in level of effort, as well as the potential impacts that lobster gear (such as buoy lines) have on other species, such as marine mammals.

The potential biological and physical impacts on lobster resources from Alternative 3 would fall in between those described under ITT Alternative 1 and ITT Alternative 2. In general, while there is a potential for an increase in fishing effort as described in ITT Alternative 1, NMFS believes that the short-term adverse impacts on biological and physical American Lobster resources would be negligible-to-minor.

Lobster

Biological Impacts

MINOR, ADVERSE, SHORT–TERM, INDIRECT, IMPACTS ON BIOLOGICAL RESOURCES WOULD BE EXPECTED UNDER ALTERNATIVE 3-ITT IN LCMA 3 ONLY.

Under ITT Alternative 3, indirect biological impacts to the lobster resource would be similar to the impacts described in Section 4.4.1-ITT Alternative 1.

Physical Impacts

MINOR, ADVERSE, SHORT–TERM, INDIRECT, IMPACTS ON PHYSICAL RESOURCES WOULD BE EXPECTED UNDER ALTERNATIVE 3-ITT IN LCMA 3 ONLY.

Under ITT Alternative 3, indirect physical impacts to the lobster resource would be similar to the impacts described in Section 4.4.1-ITT Alternative 1.

Protected Species

MINOR, ADVERSE, SHORT–TERM, INDIRECT BIOLOGICAL IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED AS A RESULT OF A POSSIBLE SMALL INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 3-ITT IN LCMA 3-ONLY.

Under ITT Alternative 3 indirect impacts on protected species would be similar to those described in Section 4.4.1-ITT Alternative 1.

By-Catch Fish

MINOR, ADVERSE, SHORT–TERM, INDIRECT IMPACTS TO BY-CATCH FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3-ITT IN LCMA 3-ONLY.

Under ITT Alternative 3 indirect impacts to by-catch fish species would be similar to the impacts described in Section 4.4.1-ITT Alternative 1.

Bait Fish

MINOR, ADVERSE, SHORT–TERM, INDIRECT IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3-ITT IN LCMA 3-ONLY.

Under ITT Alternative 3 indirect impacts to bait fish would be similar to the impacts described in Section 4.4.1-ITT Alternative 1.

4.4.4 Alternative 4-Optional ITT Program

Under this alternative, all qualified permit holders would have the "option" of participating in a Federal ITT program, subject to their adherence to a number of management requirements designed to address the potential "disconnects" described under ITT Alternative 2-Commission Alternative. Permit holders would not be obligated to take part in the transferability program, but could choose to if they so desired. Steps 1 (qualify) and 2 (allocate) are presumed to have occurred in accordance with Commission-approved measures for each affected LCMA.

Adherence to the following management measures would be mandatory:

- To the extent a lobster fisher has dual permits, (i.e., both a federal and state permit), with different state and federal trap allocations, the permit holder must agree that the more restrictive allocation shall govern and become the official Federal individual transferable trap allocation in the specified LCMA(s).
- The application deadline for a Federal permit holder to request participation in the transfer of a partial trap allocation will be due by a certain date every year, and, as discussed in greater detail in ITT Alternative 2-Regulatory Impacts, NMFS is proposing October 30th. The states and NMFS shall have some period of time after the due date to approve or deny the applications, e.g., 60 days. Upon approval by all affected regulatory agencies, the transferred traps may be fished at the start of the next fishing year.[117]
- Transfers may occur between sellers who have qualified into the LCMA in which the transfer is taking place and any Federal lobster permit holder, *or* transfers may only occur between buyers and sellers who have qualified into the LCMA in which the transfer is taking place. Further, transfers can only involve Federally allocated traps that have been allocated into the LCMA.[118]
- To the extent that a transferred trap had a history within multiple LCMAs and thus is part of a multi-LCMA allocation, the purchaser of that trap would have to pick between the allocated areas and designate a single LCMA in which to fish that trap (see Addendum XII-Section 4.3.3.3.).
- A seller's trap allocation in other LCMAs shall be debited by the number of traps transferred (see Addendum XII-Section 4.3.3.4. and 4.4).

[117] NMFS believes establishment of a consistent annual trap transfer application deadline across all participating LCMAs would improve administrative operations. Since a dual permit holder may reside in a state with an annual license renewal deadline early in the calendar year, selection of the earlier date, October 30th, allows all jurisdictions sufficient time to ensure all trap transfers are approved prior to issuance of the next year's state and Federal lobster licenses. In addition, selection of October 30th as the application deadline also provides adequate time to ensure all jurisdictions are in agreement prior to issuance of the next fishing year's trap tags to dual permit holders in states with Trap Tag MOUs. Also, standardization of the application deadline across all LCMAs would enhance participant awareness of the regulations throughout the range of the resource and facilitate effective outreach and compliance with the regulations.

[118] For dual permit holders, the federally allocated traps would likely also be part of a state allocation. NMFS recognizes this fact and transfer of such traps would remain permissible. Transfer of state-only traps to Federal permit holders, however, would not be allowed.

- The buyer(s) of transferred traps shall be subject to a conservation tax, determined based on the applicable LCMA specific percentage of at least 10%, so that at the completion of the sale, traps transferred shall be debited from the buyer's new allocation as appropriate to account for the conservation tax. The tax applies only to trap allocations in LCMAs with a transfer tax program. (see Addendum XII Section 4.3.2.).
- The appropriate conservation tax will be applied based upon the buyer's LCMA selection (See Addendum XII Section 4.3.2).
- Traps shall be transferred in 50-trap-minimum increments, effective across all participating LCMAs.
- In accordance with Addendum XII, Federal permit holders shall be allowed to retain a qualified LCMA-specific lobster permit with a zero trap allocation.
- In accordance with Addendum XIII (Section 4.1.6-*Trap Haul-out Period*), all Federal permit holders qualified to fish in the OCC shall be required to remove all lobster traps from waters of the LCMA OCC during January 15th through March 15th. It shall be unlawful for any fisherman to fish, set, or abandon any lobster traps in the OCC LCMA during this seasonal closure.[119]
- A seller may no longer be authorized to fish with traps in LCMA 1, after any LCMA "partial" transferable trap allocation transfer has been made (see Addendum XII Section 4.4.)

This ITT alternative attempts to balance the industry's need for flexibility with the managers' need to ensure that joint state-Federal management of the lobster resource is consistent across jurisdictions and the program can be effectively tracked and managed.

When the LCMA 2, 3 and OCC Limited Access Programs were being developed, industry voiced concerns that the programs might cause some hardship for certain individuals who were allocated lower trap numbers. Industry reasoned that transferability would mitigate these hardships because it would allow participants to build their trap numbers up through partial trap allocation purchases. Managers, however, voiced caution: consistent decision-making was imperative and the potential for inconsistency appeared great, given the multiple steps in LCMA programs (i.e., first qualifying, then allocating, and finally transferring) and the multiple jurisdictions involved. Management of dual permit holders with differing state and Federal transferable trap allocations was thought to be problem enough, but keeping track of those differing allocations after successive transfers was thought to invite chaos. Alternative 4-Optional ITT is designed to alleviate both sets of concerns.

This alternative should both provide industry some flexibility to make business decisions and provide managers with some assurances that a transferability program will not undermine the goals of the Lobster ISFMP. Under this option, dual permit holders with differential trap allocations would not be obliged to forfeit their higher trap allocation, but they would not be able to participate in the transferability program if they chose to retain it.[120] If they chose to take part in the transferability program, this alternative would synchronize the dual permit holder's allocations, thus greatly facilitating tracking of the transferred traps. The additional parameters, including the prohibition on inter-LCMA transfers, are designed to allow transferability to take place in such a way that is manageable.

[119] Even though the trap haul-out provision would only apply to Federal permit holders electing to fish in the LCMA OCC, Federal implementation would adversely impact a limited number of Federal permit holders that elect to fish with traps in more than one LCMA. Under this provision all Federal permit holders electing to fish in the LCMA OCC, would not be authorized to fish with traps in any other LCMA(s) during this time period.

[120] This may be a distinction without a difference insofar as state and federal regulations mandate that dual permit holders must abide by the more restrictive of competing lobster measures. In other words, the dual permit holder might retain that higher allocation, but would nevertheless be restricted from fishing with the excess traps. The federal regulations specifying this principle are set forth at 50 CFR 697.3.

Regulatory Impacts

Potential regulatory impacts would be from the degree to which the management measures are compatible with the ASMFC-passed measures under the ISFMP, components of which are currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

MODERATE-TO-MAJOR, BENEFICIAL, LONG–TERM, DIRECT, REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 4-OPTIONAL ITT PROGRAM.

Alternative 4-Optional ITT is designed to mitigate against the previously described problem of compounding allocation disconnects with subsequent trap transfers. Potential regulatory impacts under Alternative 4-Optional ITT depend on the number of permit holders participating in the program. For example, to the extent that eligible permit holders participate, then the program would look similar to that described in Section 4.4.1-ITT Alternative 2 (Commission Alternative), but with a notable exception: all disparate dual permit holder allocations would be leveled at the start of Alternative 4's optional program. That is, whereas differing initial state and federal allocations would continue and potentially compound in the Commission Alternative, this initial difference would be eliminated under the optional program. Under this alternative, a dual permit holder's state and federal allocations would be made even and start from the same point. Alternatively, if a permit holder choses not to participate in the optional ITT program, they would not be required to do so. Partial trap allocations would not be transferred, and the problems associated with differing state/Federal trap allocations would thus be minimized and contained.

If a majority of those eligible chose not to participate in the optional ITT program, potential regulatory impacts would be similar to those described in Section 4.4.1-ITT Alternative 1, combined with LAP Alternative 2.

The lack of a unified ITT program may appear to complicate administration and enforcement because permit holders may believe that they retain greater access to management areas and higher Federal trap allocations if they "opt out" of the ITT program proposed under this alternative. Addendum XII and federal regulations mandate, however, that dual permit holders abide by the more restrictive of competing lobster measures. The dual permit holder thus might retain a higher Federal allocation, but nevertheless would be restricted from fishing with the excess traps. (Federal regulations specifying this principle are set forth at 50 CFR 697.3.)

Further, this alternative presumes that a centralized database, as specified in Addendum XII, is operational and that affected jurisdictions would have the ability to monitor all state and Federal participants, which would in turn result in more effective administration and compliance.

Compatibility with ASMFC-Approved Measures

Alternative 4 would implement ITT management measures for the American Lobster fishery in OCC LCMA, LCMA 2, and for LCMA 3 under the conditions specified above for those that voluntarily choose to participate in an LCMA-specific ITT program (See also ITT Alternative 2 discussion above.)

However, ITT Alternative 4 is only partially compatible with the ISFMP in that it allows Federal permit holders to "opt-in" to the ITT program, and it would not be a mandatory requirement for all permit holders to participate in the ITT programs as specified in the ISFMP. Depending on the LAP alternatives used (Section 4.1 and 4.2), it is likely that a number of Federal permit holders, ranging from a limited number of "qualified" participants under LAP Alternative 3-Qualify Only to potential involvement of all

3200+ Federal permit holders under LAP Alternative 1-No Action, would choose not to participate. The specific number that chose to participate is impossible to predict with any degree of precision and might ultimately depend on the alternatives chosen in Sections 4.1 and 4.2 of this document.

Management, Administrative, and Enforcement Impacts

Potential management, administrative, and enforcement impacts under Alternative 4-Optional ITT depend on the number of permit holders participating in the program as immediately described above. Again, the optional program should minimize many of the management, administrative and enforcement impacts as compared to Alternative 1 (No Action) and Alternative 2 (Commission ITT) because this alternative mitigates the problems that would compound if differential trap allocations were transferred.

If a majority of those eligible chose not to participate in the optional ITT program, potential management, administrative, and enforcement impacts would be similar to those described in Section 4.4.1-ITT Alternative 1, combined with LAP Alternative 2.

Biological and Physical Impacts

Potential impacts on biological and physical resources would be from the degree to which management measures would alter the number of traps in the water or their geographic location, including their concentration in any one area. Indirect biological impacts relate to the amount of effort (harvesting) within the fishery. Indirect physical impacts relate primarily to the impacts that the placement of lobster traps have on the ocean bottom. Indirect impacts also relate to the potential effect on other species (by-catch or bait fish) from changes in level of effort, as well as the potential impacts that lobster gear (such as buoy lines) have on other species, such as marine mammals.

The potential biological and physical impacts on lobster resources from Alternative 4 would fall in between those described under ITT Alternative 1 and ITT Alternative 2. While there would be some number of Federal permit holders who would choose to participate in an ISFMP-compatible ITT program, there would be some who may choose not to participate. Though there is the potential for an increase in fishing effort, as described in ITT Alternative 1, NMFS believes that the short-term adverse impacts on biological and physical American Lobster resources would be minor and longer term impacts would be negligible.

Lobster

Biological Impacts

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT AND MINOR, ADVERSE, SHORT-TERM, INDIRECT IMPACTS ON BIOLOGICAL RESOURCES WOULD BE EXPECTED UNDER ALTERNATIVE 4-OPTIONAL ITT PROGRAM.

Potential biological impacts on lobster under Alternative 4-Optional ITT depend on the number of permit holders participating in the program. If a majority of those eligible participate, the potential impacts would be similar to those described in Section 4.4.1-ITT Alternative 2. While there remains some potential for short-term adverse impacts on lobster resources as a result of the activation of latent effort under ITT, the amount of latent effort that would exist under this option is significantly less than what would be possible under the ITT No Action alternative.

If a majority of those eligible chose not to participate in the optional ITT program, potential biological impacts on lobster would be similar to those described in Section 4.4.1-ITT Alternative 1, combined with LAP Alternative 2.

Physical Impacts

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT AND MINOR, ADVERSE, SHORT-TERM, INDIRECT IMPACTS ON PHYSICAL RESOURCES WOULD BE EXPECTED UNDER ALTERNATIVE 4-OPTIONAL ITT PROGRAM.

Potential impacts on lobster habitat under Alternative 4-Optional ITT depend on the number of permit holders participating in the program. If a majority of those eligible participate, the potential impacts would be similar to those described in Section 4.4.1-ITT Alternative 2.

If a majority of those eligible chose not to participate in the optional ITT program, potential impacts on lobster habitat would be similar to those described in Section 4.4.1-ITT Alternative 1, combined with LAP Alternative 2.

Protected Species

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT BIOLOGICAL AND MINOR, ADVERSE, SHORT-TERM, INDIRECT IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED AS A RESULT OF A POSSIBLE SMALL INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 4-OPTIONAL ITT PROGRAM.

Potential impacts on protected species under Alternative 4-Optional ITT depend on the number of permit holders participating in the program. If a majority of those eligible participate, the potential impacts would be similar to those described in Section 4.4.1-ITT Alternative 2.

If a majority of those eligible chose not to participate in the optional ITT program, potential impacts on protected species would be similar to those described in Section 4.4.1-ITT Alternative 1, combined with LAP Alternative 2.

Though there is the potential for an increase in fishing effort because of an unquantifiable activation of latent effort, as described in ITT Alternative 1, NMFS believes that the short-term adverse impacts on protected resources would be minor and offset over time by trap reductions built in to this option through a “conservation tax.”

By-Catch Fish and Bait Fish Species

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT AND NEGLIGIBLE, ADVERSE, SHORT-TERM, INDIRECT IMPACTS ON BY-CATCH FISH AND BAIT FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 4-OPTIONAL ITT PROGRAM.

Potential impacts on by-catch and bait fish species under Alternative 4-Optional ITT depend on the number of permit holders participating in the program. If a majority of those eligible participate, the potential impacts would be similar to those described in Section 4.4.1-ITT Alternative 2.

If a majority of those eligible chose not to participate in the optional ITT program, potential impacts on by-catch and bait fish species would be similar to those described in Section 4.4.1-ITT Alternative 1, combined with LAP Alternative 2.

4.5 Economic Impacts

The analysis provided below examines the potential economic impacts of the proposed limited access and ITT measures on the affected fishing industry.

In general, the analysis provides two important conclusions. First, with regard to the proposed limited access programs, no economic impact is expected under any of the alternatives (except No Action), given that no change to historical fishing practices would result. Second, under the ITT program alternatives, there are important economic efficiencies to be realized for industry participants (see 4.5.3, below), which, once in place, the LAP programs will facilitate. For the ITT programs, given that the choice to buy or sell traps is up to the individual fisher, NMFS cannot predict in real numbers what the economic impact will be on the fishing communities. What it can predict is that the impact lies in the providing of the choice itself to buy or sell traps: under an ITT program, fishers will be able to make their own business decisions about whether to scale up or scale down, based on their own perceived goals.

4.5.1 LCMA OCC LAP Alternatives

Alternative 1 – No Action

NEGLIGIBLE-TO-MINOR, ADVERSE, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

The Commonwealth of Massachusetts implemented a limited entry and trap allocation for anyone holding either a Massachusetts state permit or a dual MA/Federal permit for the OCC during 2002. However, while the state's action would not allow any Massachusetts vessels not already qualified for limited access to the OCC LCMA to fish in the area, under this alternative, the EEZ portion of the OCC area would remain open to Federally permitted lobster vessels from any other state to set up to 800 traps in the area. The likelihood that any such vessel would choose to fish in the OCC area is uncertain. Available data indicate that only 170 vessels selected the LCMA OCC on their permit application during 2007 and of those only 38 (26 of which were from MA) actually purchased trap tags for the area (see Table 4.2). Whether any of the 12 vessels from states other than Massachusetts actually fished traps in the LCMA OCC is not known. Nevertheless, if a shift in effort were to occur under this alternative the most likely economic impact would be a dilution in profitability for current and future participants. At least part of the lobster catch in the LCMA OCC is attributable to migrating lobsters between inshore and offshore areas. Increasing the number of participating vessels and traps fished in the area may result in higher landings overall, but unless landings linearly increase with traps fished, landings, and average gross stock per vessel would be more likely to go down.

Alternative 2 – Commission Alternative (Preferred Alternative)

MINOR, BENEFICIAL, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

With adoption of Addendum XII, the ASMFC accepted the Massachusetts plan as the Commission alternative for managing limited access and trap allocations in the LCMA OCC. This alternative would implement complementary Federal regulations that would similarly limit access and allocate traps based on the Massachusetts state plan. Since this alternative would leave current qualifiers and trap allocations unchanged from present levels, no economic impacts attributable to Federal action would be expected. Over the longer term, increased certainty over eligibility to fish and the number of traps that may be

fished in the area may increase the effectiveness, timeliness, and transactions costs associated with managing the OCC lobster trap fishery.

Alternative 3 – Qualify Only

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

This alternative would adopt the Commission-approved measures for qualifying fishers into the LCMA OCC, but would allow all Federal qualifiers to fish up to the 800 trap cap. Although the number of qualifiers would be the same as that of Alternative 2, this alternative would result is some probable increase in the number of traps fished in the area. Because of the Most Restrictive Rule, the economic impact of this alternative is unlikely to differ from Alternative 2, at least for dual permitted vessels from Massachusetts. However, should vessels from other states qualify for limited access, differences among OCC vessels would be likely to occur. The economic implications of this alternative are likely to be negligible since the numbers of vessel participating in the OCC lobster trap fishery or on the number of traps fished are likely to differ little from that of Alternative 2.

4.5.2 LCMA 2 LAP Alternatives

Alternative 1 - No Action

MINOR, ADVERSE, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

The template for limited access qualification and making trap allocations among states that have permitted vessels that fish in LCMA 2 was established under Addendums VII and XII. Although there were some differences across states in the manner in which these Addenda were actually implemented, states have already determined which vessels qualified for limited access to LCMA 2 and have made initial trap allocations. Alternative 1 would not affect action already undertaken by the states, but would leave the EEZ portion of LCMA 2 an open access area. The economic impact of any expansion of effort that may be associated with open access are uncertain, but it may be expected to have an adverse impact on profitability of current and future LCMA 2 participants. In the near term, catch rates are unlikely to increase linearly with increased traps, so an increase in traps fished would have the effect of diluting the profitability for all lobster trap businesses. In the longer term the potential for increased removals would compromise rebuilding objectives leading to the need to implement more stringent management measures in the future. This externality would spread the economic costs of open access to the portion of the lobster fishing businesses that are subject to limited access programs implemented by the states.

While leaving the area open access would allow for the potential for a substantial increase in traps fished in the area, the extent to which this potential would be realized is uncertain. Available data suggest a gap between stated intentions on a permit application and the purchase of trap tags. During 2007 a total of 431 permit holders elected LCMA 2, but less than half of these vessels actually purchased trap tags. In fact, the sum of all purchased trap tags under this alternative was still less than the total number of traps allocated under the Commission alternative (see Table 4.3). For this reason, the economic impact of leaving LCMA 2 open access may not be particularly large.

Alternative 2 – Commission Alternative (Preferred Alternative)

MINOR, BENEFICIAL, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

This alternative would implement the qualification and trap allocations already implemented by the states. Based on preliminary analysis, a total of 207 permits would qualify for limited access to LCMA 2, with a total allocation of 125,791 traps. Note that Massachusetts qualified an additional 77 permit holders based on qualification standards. However, based on the trap allocation regression formula used by the State, these vessels would receive zero trap allocations. In the absence of an ITT these vessels would be unable to obtain any traps and would be prevented from participating in the LCMA 2 lobster trap fishery. For qualifying permit holders this alternative would assure that the externalities associated with leaving LCMA 2 open to any federal permit holder would not occur. This would assure that the total number of traps that could be fished in LCMA 2 would be capped and would set the stage for an ITT program that allow vessels greater flexibility to scale fishing business activities to prevailing economic conditions. This alternative would further promote consistency between State/Federal management and would improve the likely effectiveness of any broodstock management measures should they become necessary.

Alternative 3 – Qualify Only

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

This alternative would qualify the same number of limited access permit holders that have already been deemed qualified by the states. However, the potential number of traps that may be fished would be limited by the maximum of 800 traps instead of the qualifying traps as determined by the states. This alternative would qualify up to 165,600 traps although recent data suggest that far fewer traps may actually be fished (133,600, see Table 4.3). This alternative would have at least a short-term positive impact on vessels that would not otherwise have received an allocation of 800 traps based on the state's allocation formula, particularly vessels whose production per trap may be below average.[121]

The economic impact of allowing a larger number of traps to be fished in LCMA 2 is uncertain. While some vessels may be able to increase the number of traps fished under this alternative, it is unlikely that all vessels would actually do so since available data indicate that even when vessels were able to fish up to 800 traps, many did not. Nevertheless, the potential for increased effort would remain and the inconsistency between state and federal management actions would also persist. If this alternative were selected and all permit holders could fish up to 800 traps, an ITT program would not be necessary since everyone could fish up to the maximum cap of 800 traps (i.e., there would be no "buyers and sellers" because everyone can already fish up to the maximum allowed). However, in addition to promoting economic efficiency the anticipated trap reductions that would occur through the tax on transfers would not be realized.

4.5.3 ITT Program Alternatives

An ITT would allow individual lobster fishers the flexibility to adjust their business plans up or down by purchasing/selling traps to another qualified lobster trap fishing business. Four alternatives are being considered, including taking no action. The alternatives that would implement an ITT are based on the

[121] That is, predictions based on a regression equation tend to be more reliable the closer to the mean of the data used to estimate the regression. Using the regression equation, for any given level of production, a vessel with above average production per trap would receive a higher trap allocation than what may have actually been used while the converse would be true for a vessel with below average catch per trap.

premise that any allocation of traps would associated with a single entity. These alternatives also have several other characteristics in common. Trap transfers may only take place within an individual LCMA. That is, traps allocated to a particular LCMA may not be transferred to any other LCMA. Each alternative includes an accounting of debit and credits to an entity's trap allocation and each alternative includes a conservation tax on each transfer such that the total traps transferred are debited from the seller's allocation and the number of traps credited to the buyer is reduced by the tax. Leasing of traps would be prohibited and each alternative includes a cap on the maximum number of traps that any one entity could acquire.

In general an ITT program may be expected to provide individual lobster businesses the flexibility to scale their business up or down according to individual business plans. Since qualification of trap allocations were partially based on levels of participation during the qualification period, many vessels may receive allocations that do not reflect desired business planning, with some entities receiving higher while others receive lower allocations. Transferability makes it possible for these trades to take place, thereby increasing economic efficiency on the use of traps in the lobster fishery. Traps may be expected to be traded from less economically efficient vessels to more efficient ones. That is, the buyer may be expected to be more profitable either because it has a lower cost structure than the seller or, is more technically efficient, or both. The conservation tax provides a mechanism to offset the potential transfer of either latent or less efficient traps from one entity to another more technically efficient one.

Though trap caps appear in the Commission alternative as a means to prevent monopoly power, NMFS believes that they are not so much an economic issue as perhaps an effort by Commission members to address social impact concerns with regard to ITT and the potential concentration of industry participation amongst a few industry players. Monopoly or market power comes from the ability to achieve a non-transient increase in the market price by withholding supply. Given the fact that the overwhelming majority of lobster landings come from LCMA 1 and the large amount of imported lobster from Canada, the ability to exert enough control of the total supply of lobsters is not likely to emerge.

Alternative 1 – No Action

MODERATE, ADVERSE, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

Under No Action, no Federal ITT program would be implemented. The Commonwealth of Massachusetts has already implemented an ITT program for the LCMA OCC. This program would be unaffected, but would only apply to individuals that qualified and were issued trap tags by the Commonwealth. Assuming the Commission alternative for qualification and trap allocation were selected, any qualifying vessel from a state other than Massachusetts would be unable to take advantage of the economic flexibility that an ITT would offer. Similarly, since ITT programs have yet to be implemented for either LCMA 2 or 3 by the states, any qualifying vessel would be constrained by its initial allocation of traps and would be unable to take advantage of the economic opportunities that an ITT program would provide.

Alternative 2 – Commission Alternative

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

In addition to the measures common to all ITT alternatives, this alternative would include elements unique to each LCMA. The OCC ITT calls for a cap of 800 traps, a 10% conservation tax, and a requirement to remove all traps from the water from January 1 to March 30. This alternative would leave the design of an ITT for LCMA 2 up to each state with the provision to implement a 10% conservation

tax and a cap of 800 traps. The LCMA 3 ITT would implement different conservation tax for transfers at different ownership levels, would cap ownership at 2,200 traps, and would limit ownership to a maximum of five LCMA 3 permitted vessels.

The particular ITT design elements for each LCMA are tailored to the economic objectives among LCMA participants. As such they may be expected to have higher positive economic benefit compared to other ITT alternatives from the perspective of fishery participants. However, administering and monitoring three different ITT programs for EEZ permit holders would be the most costly among all considered ITT alternatives. Further complicating administration of an ITT under the Commission alternative is the fact that the creation of an ITT program within an LCMA is left up to each state to develop. This creates considerable uncertainty over the timing of implementation and the manner in which provisions of an ITT program across states may differ.

Alternative 3 – LCMA 3 Only

MINOR, ADVERSE, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 3-LCMA 3-ONLY.

This alternative would implement an ITT program in LCMA 3 only, with provisions that are simplified from that of the Commission alternative. Specifically, all transfers would be subject to a uniform 10% tax regardless of how many traps either the seller or buyer possessed. This alternative would preserve the essential economic benefits that would come with an ITT, but would do so on a smaller scale and at a lower administrative cost. Finally, this alternative would not affect dual permit holders from Massachusetts fishing in the LCMA OCC, since the state has already implemented an ITT program

Alternative 4 – Optional ITT Program

MODERATE-TO-MAJOR, BENEFICIAL, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 4-OPTIONAL ITT PROGRAM.

This alternative preserves many of the features that would generate positive economic benefits similar to that of the Commission's ITT alternative. The economic benefits of this alternative may be even greater than that of the Commission alternative since this alternative is designed to better sync, or link up, Federal/state requirements for dual permit holders. Some reduction in realized economic benefits may result under this alternative since trades would not be immediately effective. However, this provision is likely to result in some programmatic cost savings since trap tags would only need to be reissued during the fishing year and would facilitate a full accounting of trap allocations at only one time each year. Any potential loss in economic flexibility may be more than offset by the potential to expand the opportunity to have an ITT program.

Finally, under this alternative, it is unlikely that traps caps would be necessary to avoid the accumulation of market power. As was mentioned above, NMFS believes that trap caps are not so much an economic issue as perhaps an effort on the part of the Commission to achieve some social objectives with regard to ITT and the concentration of industry participation amongst a few industry players. Monopoly or market power comes from the ability to achieve a non-transient increase in the market price by withholding supply. Given the fact that the overwhelming majority of lobster landings come from LCMA 1 and the large amount of imported lobster from Canada, the ability to exert enough control of the total supply of lobsters is not likely to emerge.

4.6 Social Impacts

The social impact analysis provided below examines the potential social and cultural impacts of the proposed limited access and ITT measures on the affected fishing communities identified earlier in Chapter 3.

4.6.1 Background

Under NEPA, Section 40 CFR 1508.14, "[if] economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all these effects on the human environment." For this analysis, the social environment is defined to include the basic attributes and resources associated with the human environment, including demographic data at the local, county and state levels, such as population, ethnicity, education, age and other broad cultural indicators, as identified in Chapter 3. The communities evaluated include those identified in Table 3.12.

In addition, EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that Federal agencies' actions substantially affecting human health or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin. The provisions of EO 12898 require that no groups of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the adverse environmental consequences resulting from industrial, municipal, and commercial operations; or the execution of Federal, state, tribal, and local programs and policies. Consideration of environmental justice concerns includes race, ethnicity, and the poverty status of populations in the vicinity where a Project would occur. The demographic data presented in Section 3.3, Table 3.12 is used to consider consistency with the intent of EO 12898. NMFS notes that the data presented, while best available, does not have strong resolution to identify in a quantitative manner potential impacts under EO 12898. Qualitatively, however, NMFS does not believe that the proposed limited access and ITT measures will result in groups of people or socioeconomic groups bearing a disproportionate share of the adverse environmental consequences, primarily for two reasons: 1) because (as has been stated throughout the DEIS) future participation within the lobster fishery under the proposed measures will be based on historic fishing practice (i.e., anyone who can show a defined history of fishing for lobster will still be able to fish under the new measures) and, 2) the data that is available, while limited in resolution, supports this finding.

4.6.2 Methodology

NMFS guidance recommends that the following factors be addressed in the social impact analysis:

- The size and demographic characteristics of the fishery-related work force residing in the area;
- The attitudes, beliefs, and values of fishermen, fishery-related workers, and other stakeholders;
- The social structure and organization of the affected community, including effects on the ability of jurisdictions to provide support and services to families and communities;
- Life-style, health, and safety impacts, as well as non-consumptive and recreational uses of marine resources; and
- The historical dependence on and participation in the fishery, reflected in structural changes in fishing practices, income distribution, and rights.

The approach taken for this EIS is consistent with this guidance.

LCMA OCC Alternatives Analysis

Table 4.6 - LCMA OCC Comparison of # Elected vs # Qualified by MA County - 2007

2007				
	# elected	% of Total	# Qualified	% of Total
Barnstable	60	50%	23	88%
Bristol	21	18%	0	0%
Dukes	1	1%	0	0%
Essex	22	18%	0	0%
Hampshire	0	0%	1	4%
Middlesex	2	2%	0	0%
Nantucket	2	2%	1	4%
Norfolk	6	5%	1	4%
Plymouth	5	4%	0	0%
Suffolk	0	0%	0	0%
Worcester	0	0%	0	0%
Total	**119**	100%	**26**	100%

Chart 4.1 - LCMA OCC Comparison of # Elected vs # Qualified by MA County - 2007

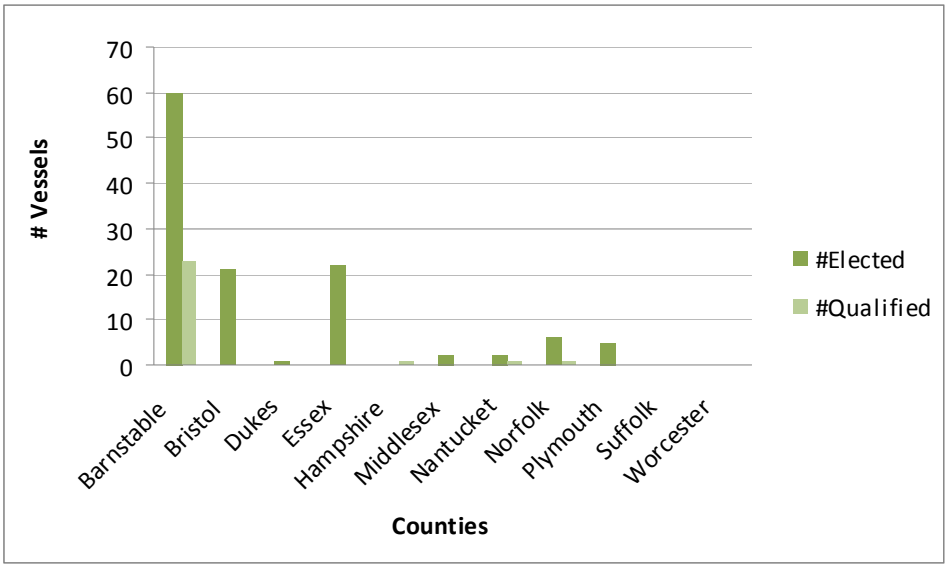


Table 4.6, above, compares the number of vessels electing to fish under the status quo to the number of vessels qualified under a limited-access program for the LCMA OCC by Massachusetts County (2007

data). Important to consider is that, because these vessels were qualified based on prior fishing history (see discussion in Chapters 2 & 4, above), the effect of moving from the status quo (those "electing" to fish) to a limited-access program is primarily one of more accurate accounting. While the results thus show that for some counties there has been a significant drop "on paper" in the number of vessels with access to the federal fishery under the proposed limited-access measures, the impact on those who historically have actually been fishing for lobster is neutral in that their access to the fishery will remain unchanged.

That said, based on the results from Table 4.6, total participation for Massachusetts in the Federal LCMA OCC fishery drops from 119 vessels, largely based in Barnstable, Bristol, and Essex Counties, to 26 vessels, all (with the exception of 3) based in Barnstable County. As a percentage of the total, Bristol and Essex counties drop from 18% each down to zero percent, while Barnstable County expands from 50% to 88%.

NMFS has identified OCC LAP Alternative 2-Commission Alternative as the Preferred Alternative in this DEIS. Potential impacts on the social environment were not a determinative factor in choosing Alternative 2 as the Preferred Alternative for the reasons that follow. Because all of the alternatives considered for the LCMA OCC limited-access program will have a neutral impact on those historically participating in the fishery, NMFS believes that the social impact (based on the parameters outlined in Table 3.12) will be neutral. At the same time, NMFS recognizes the possibility that there may be fishers who want to fish in the area, but have no history, and who will therefore be denied future access under a Limited Access program (unless they participate through an ITT program, should one be implemented). Nonetheless, for those fishers who have historically fished the area, increased certainty over eligibility to fish and the number of traps that may be fished may increase the effectiveness, timeliness, and transactions costs associated with managing the LCMA OCC lobster trap fishery, resulting in an improved economic environment that will also have social benefits for the affected communities. On balance, therefore, NMFS concludes that the social impacts will be ***neutral***, with the potential for some beneficial impacts as a result of improved economic conditions.

LCMA 2 Alternatives Analysis

Table 4.7 - LCMA 2 Comparison of # Elected vs # Qualified by MA County - 2007

2007				
	# Elected	% of Total	# Qualified	% of Total
Barnstable	32	18%	4	6%
Bristol	52	30%	28	40%
Dukes	25	14%	24	34%
Essex	30	17%	0	0%
Hampshire	0	0%	0	0%
Middlesex	2	1%	0	0%
Nantucket	2	1%	1	1%
Norfolk	7	4%	3	4%
Plymouth	24	14%	10	14%
Suffolk	2	1%	0	0%
Worcester	0	0%	0	0%
Total	**176**	100%	**70**	100%

Chart 4.2 - LCMA 2 Comparison of # Elected vs # Qualified by MA County - 2007

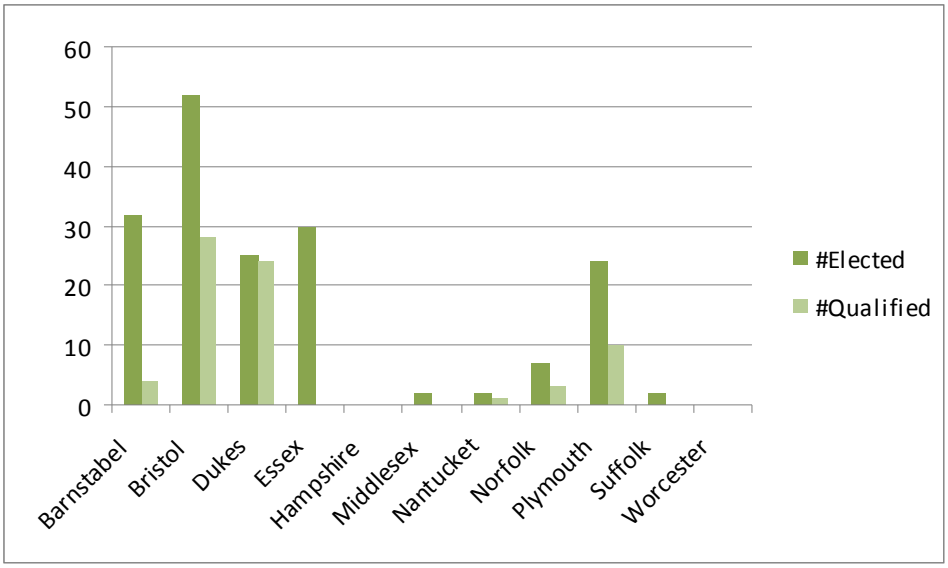


Table 4.7, above, compares the number of vessels electing to fish under the status quo to the number of vessels qualified under a limited-access program for the LCMA 2 by Massachusetts County (2007 data). As discussed under the LCMA OCC analysis, above, while the results show that for some counties there has been a significant change "on paper" in the number of vessels with access to the federal fishery, the impact on those who historically have been fishing for lobster is **neutral** in that their access to the fishery under the proposed limited-access measures will remain unchanged.

Based on the results from Table 4.7, total participation for Massachusetts in the Federal LCMA 2 fishery drops from 176 vessels--largely based in Barnstable, Bristol, Dukes, Essex and Plymouth Counties--to 70 vessels--primarily based in Bristol and Dukes Counties. As a percentage of the total, Barnstable County drops from 18 to 6 percent, while Dukes County increases from 14 to 34 percent. The number of vessels for Plymouth County as a percentage of the total remains unchanged when comparing status quo to a limited-access program.

Table 4.8 - LCMA 2 Comparison of # Elected vs # Qualified by RI County - 2007

2007				
	# Elected	% of Total	# Qualified	% of Total
Bristol	5	3%	5	4%
Kent	9	5%	7	5%
Newport	40	24%	33*	25%
Providence	3	2%	1	1%
Washington	110	65%	83	65%
outliers	2	1%	0	0%
Total	**169**	100%	**96**	100%

* One permit holder was qualified by Massachusetts.

Chart 4.3 - LCMA 2 Comparison of # Elected vs # Qualified by RI County - 2007

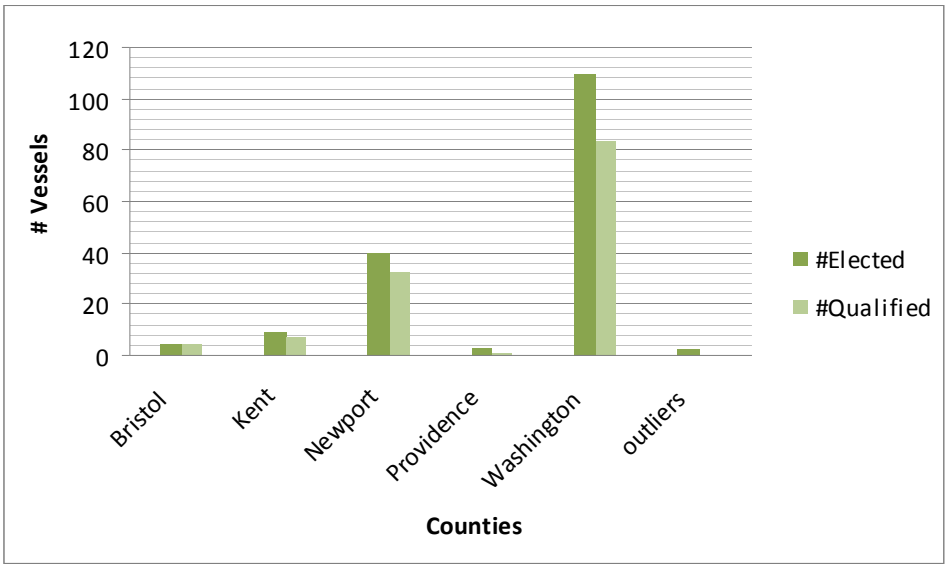


Table 4.8, above, compares the number of vessels electing to fish under the status quo to the number of vessels qualified under a limited-access program for the LCMA 2 by Rhode Island County (2007 data). As with Massachusetts (discussed above), the impact on those who historically have been fishing for lobster is neutral in that their access to the fishery under the proposed limited-access measures will remain unchanged.

Based on the results from Table 4.8, total participation for Rhode Island in the Federal LCMA 2 fishery drops from 169 vessels, largely based in Washington and Newport Counties, to 96 vessels, also largely based in Washington and Newport Counties. In fact, representation across all Rhode Island counties as a

percentage of the total remains relatively stable when shifting from the status quo to a limited-access program.

Table 4.9 - LCMA 2 Comparison of # Elected vs # Qualified by NY County - 2007

2007				
	# Elected	% of Total	# Qualified	% of Total
Bergen	0	0%	0	0%
Bronx	1	2%	0	0%
Essex	0	0%	0	0%
Kings	2	5%	0	0%
Nassau	1	2%	0	0%
Rockland	1	2%	0	0%
Suffolk	37	88%	3	100%
Westchester	0	0%	0	0%
Outliers	0	0%	0	0%
Total	**42**	100%	**3**	100%

Chart 4.4 - LCMA 2 Comparison of # Elected vs # Qualified by NY County – 2007

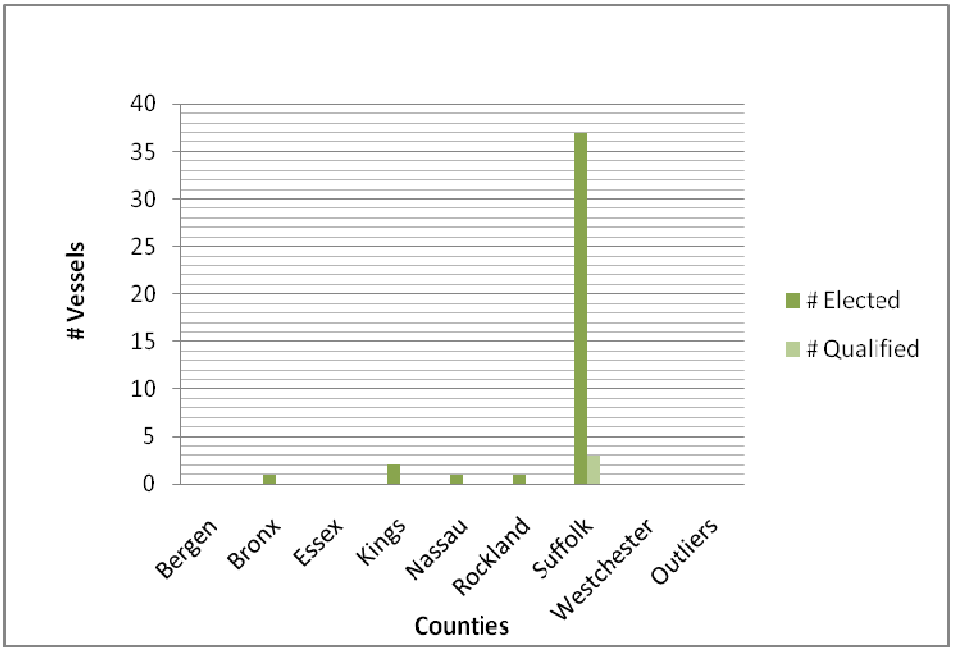


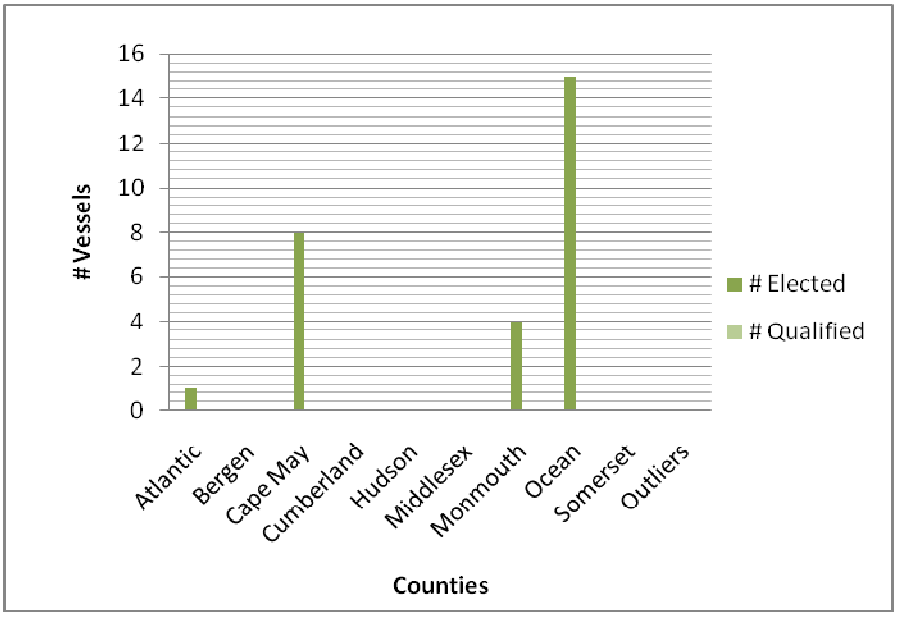
Table 4.9, above, compares the number of vessels electing to fish under the status quo to the number of vessels qualified under a limited-access program for the LCMA 2 by New York County (2007 data). As with the other states (discussed above), the impact on those who historically have been fishing for lobster is neutral in that their access to the fishery under the proposed limited-access measures will remain unchanged.

Based on the results from Table 4.9, total participation for New York in the Federal LCMA 2 fishery drops from 42 vessels, largely based in Suffolk County, to 3 vessels, all of which are located in Suffolk County.

Table 4.10 - LCMA 2 Comparison of # Elected vs # Qualified by NJ County - 2007

2007				
	# Elected	**% of Total**	**# Qualified**	**% of Total**
Atlantic	1	4%	0	0%
Bergen	0	0%	0	0%
Cape May	8	29%	0	0%
Cumberland	0	0%	0	0%
Hudson	0	0%	0	0%
Middlesex	0	0%	0	0%
Monmouth	4	14%	0	38%
Ocean	15	54%	0	63%
Somerset	0	0%	0	0%
Outliers	0	0%	0	0%
Total	**28**	100%	**0**	100%

Chart 4.5 - LCMA 2 Comparison of # Elected vs # Qualified by NJ County 2007



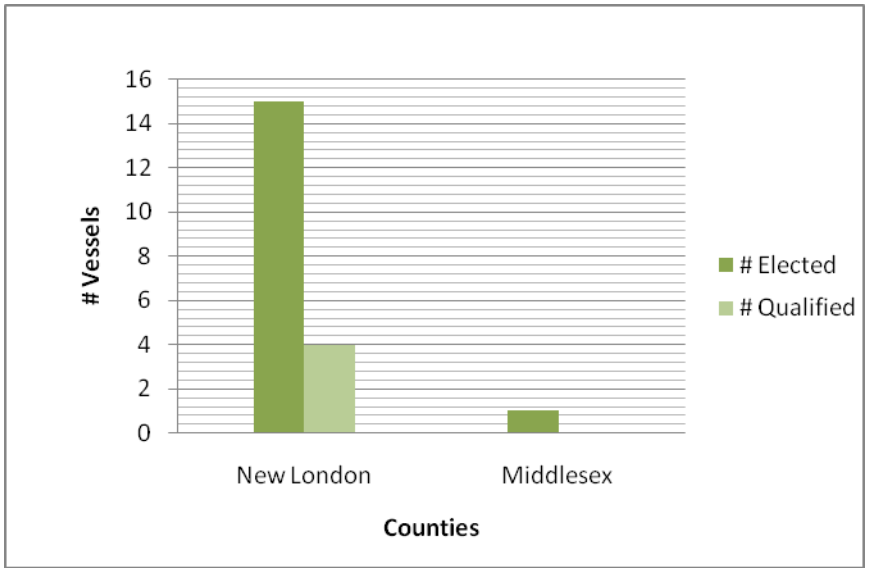
Connecticut and New Jersey

Relative to Massachusetts and Rhode Island, the states of Connecticut and New Jersey (as well as New York), do not have a strong presence in LCMA 2. For Connecticut, only 16 elected to fish in 2007 and under alternatives 2 and 3, only 4 would qualify. Again, as with the other states discussed above, the impact on fishers from Connecticut and New Jersey who historically have been fishing for lobster is neutral in that their access to the fishery under the proposed limited-access measures will remain unchanged.

Table 4.11 - Comparison of # Elected vs # Qualified by CT County - 2007

2007				
	# Elected	**% of Total**	**# Qualified**	**% of Total**
New London	15	94%	4	100%
Middlesex	1	6%	0	0%
Total	**16**	100%	**4**	100%

Chart 4.6 - Comparison of # Elected vs # Qualified by CT County - 2007



NMFS has identified LCMA 2 LAP Alternative 2-Commission Alternative as the Preferred Alternative in this DEIS. Potential impacts on the social environment were not a determinative factor in choosing Alternative 2 as the Preferred Alternative for the following reasons. As with the LCMA OCC analysis, above, all of the alternatives considered for the LCMA 2 limited-access program will have a neutral impact on those historically participating in the fishery. At the same time, NMFS recognizes the possibility that there may be fishers who want to fish in the area, but have no history, and who will therefore be denied future access under a Limited Access program (unless they participate through an ITT program, should one be implemented). Nonetheless, for those fishers who have historically fished the area, increased certainty over eligibility to fish and the number of traps that may be fished may increase the effectiveness, timeliness, and transactions costs associated with managing the LCMA 2 lobster trap fishery, resulting in an improved economic environment that will also have social benefits for the affected communities. On balance, therefore, NMFS concludes that the social impacts (based on the parameters outlined in Table 3.12) will be ***neutral***, with the potential for some beneficial impacts as a result of improved economic conditions.

ITT Alternatives Analysis

Those American Lobster permit holders who qualify under the proposed limited-access alternatives identified above represent the universe of "sellers" under an ITT program. Because "selling" or "buying" trap allocations is a discretionary action, it is unknown how many individuals would choose to participate in an ITT program and what that would mean in terms of altering the geographic representation for the fishery, as detailed above and in Chapter 3. Without knowing this, it is not possible to even speculate on what the impacts of an ITT program ultimately would be to the affected communities as measured by the demographic parameters outlined in Table 3.12.

What can be said, qualitatively, is that with an ITT program, economic flexibility for permit holders is greatly increased because it creates the opportunity for fishers to respond to inadequate trap allocation by obtaining additional allocation from other fishers who may want to scale down their own business or leave the fishery. In general, this added flexibility will have a positive impact on social "well-being," since, for example, those permit holders who want to retire or otherwise leave the fishery will have more opportunity (and fewer economic disincentives) to do so, while others who want to increase their participation in the fishery will also have more opportunities to do so. Without an ITT program, these options will not exist for permit holders and those individuals will be locked in to their permit allocations. Under these circumstances, and where Limited Access is in place, fishers will bear the restrictions that come with capping effort, while receiving none of the benefits that come with greater economic freedom to optimize their business.

Based on this, NMFS believes that the direct social impacts from Alternative 1, No Action, will be *major, long-term, and adverse*, while those associated with the proposed ITT alternatives would be *major, long-term, and beneficial.*

Chapter 5 – Cumulative Impacts

CUMULATIVE IMPACTS CHAPTER 5

5.0 Introduction

CEQ regulations implementing NEPA define cumulative impacts as the "impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." (40 CFR 1508.7) Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time within a geographic area. All of the alternatives evaluated in this DEIS (limited access programs in LCMAs OCC and 2 and an ITT program for LCMAs OCC, 2 and 3) are evaluated below for their potential to produce cumulative impacts on the biological and human environments.

This chapter describes the following key components relative to the potential cumulative impacts of the effort control management alternatives for American Lobster.

- Section 5.1 describes the geographic and temporal boundaries for the analysis;
- Section 5.2 describes the past, present, and reasonably foreseeable cumulative actions within these boundaries;
- Section 5.3 describes the potential cumulative impacts by issue and resource area, including impacts on the regulatory environment, lobster, protected species, bait fish and by-catch species, and the economic and social environment. Potential cumulative impacts are identified by evaluating the combined effect on these issues and resource areas of past, present, and future lobster-and non-lobster related actions within the appropriate geographic boundaries, defined below.

5.1 Geographic and Temporal Boundaries

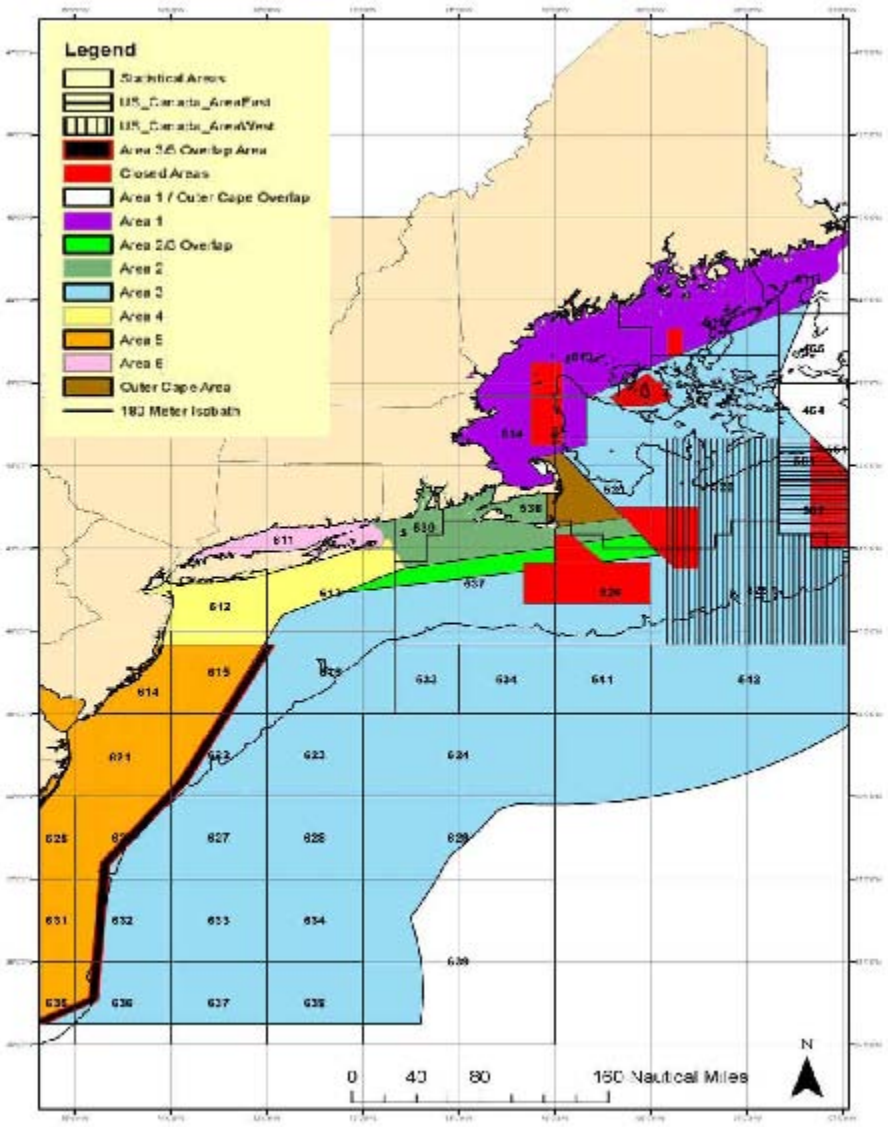
For purposes of this analysis, the geographic boundaries for biological resources encompass Federal waters of all American Lobster LCMAs from Maine to North Carolina. Geographic boundaries for the human environment encompass the affected fishing communities as identified in Ch 3 (Section 3.3). The time period considered for this analysis extends from 1997-- the year that Amendment 3 to the American Lobster ISFMP establishing the framework for area management was first established—to 2015 (approx 5 years into the future). This period was chosen because of the relatively high frequency with which the Commission's lobster management board adopts new addenda to the ISFMP; while new addenda are a virtual certainty, their details beyond a 5-year time horizon cannot be predicted and thus their effects on the biological and human environments associated with lobster management are unknown.

5.2 Past, Present, and Reasonably Foreseeable Cumulative Actions

Federal waters that comprise the American lobster fishery also support many other non-lobster related activities. Multiple Federal jurisdictions oversee these activities, the boundaries of which oftentimes overlap and cover a vast amount of the Outer Continental Shelf (OCS) area. The discussion below provides an analysis of the range of actions taking place within the geographic boundaries for this cumulative impact analysis and briefly identifies their cumulative impact on lobster-related resources. Quantitative information to characterize these impacts is not available; qualitative conclusions are provided, however, to the extent possible. For purposes of this analysis, the activities considered generally fall into the following broad categories: lobster fishery management actions; non-lobster fishery

management actions, and commercial and industrial development actions. These are discussed in turn, below.

Figure 5.1 - American Lobster Biological Stock Units and Management Areas



5.2.1 Lobster Fishery Management Actions:

Past and present Federal management actions for the American Lobster fishery were discussed in detail in Chapters 1 and 3 and are incorporated by reference here; please refer to those chapters for this background. Other reasonably foreseeable lobster-related management actions are as follows:

- *Proposed Limited Access Program for Area 1*: NMFS has begun evaluating the implementation of a Federal American lobster limited access program in the inshore Gulf of Maine (Area 1), as recommended by the Atlantic States Marine Fisheries Commission (Commission). The New

England states of Maine, Massachusetts and New Hampshire, and the Commission voiced concern that continued restrictions in other fisheries and in other lobster management areas may result in an effort shift into the Area 1 lobster trap fishery. The Commission, after public hearings in the New England states, approved Addendum XV to the American lobster Interstate Fisheries Management Plan in November 2009, that outlined criteria that would be used to qualify existing trap fishermen for continued access in Area 1. NMFS published a *Federal Register* Notice (74 FR 67) that established an Area 1 'control date' of January 2, 2009 in response to a prior Commission recommendation. This Federal rulemaking will evaluate Commission recommendations to restrict future trap fishing effort to qualified lobstermen based on proof of historic participation in the Area 1 trap fishery. This action was supported by the majority of the Area 1 industry.

Biologically, these actions have a positive cumulative impact on the American Lobster species; broodstock measures (such as those described above) combined with effort control measures (such as those evaluated in the EIS) are meant to increase the fishery population in the long term. At the same time, NMFS recognizes that the many lobster management measures that have been advanced through regulation have cumulatively placed tighter restrictions on the regulated industry and this has had short- and long-term adverse social and economic impacts that have been balanced against the need to protect the fishery population.

5.2.2 Non-Lobster Fishery Management Actions

Fishery Management Plans (FMPs) for Numerous Fisheries: Within the geographic boundaries for this analysis, numerous commercial fisheries share ocean space with the American Lobster fishery and are Federally regulated in accordance with individual FMPs targeted at species or categories of fish. The majority of these fisheries fall under the purview of either the New England or Mid-Atlantic Fishery Management Councils (NEFMC and MAFMC, respectively), or the Atlantic States Marine Fisheries Commission (ASMFC) which have developed FMPs to promote the long-term health and stability of the managed fisheries. These FMPs are as follows:

- NEFMC: NE Multispecies (large mesh/groundfish), Sea Scallop, Monkfish, Atlantic Herring, NE Multispecies (small mesh/whiting), Dogfish, Deep-sea Red Crab, Northeast Skate Complex, Atlantic Salmon.

- MAFMC: Atlantic Mackerel, Squid and Butterfish, Bluefish, Dogfish, Surfclam and Ocean Quahog, Summer flounder, Scup & Black Sea Bass, Tilefish, Monkfish.

- ASMFC: Atlantic Striped Bass, Summer Flounder, Scup, Black Sea Bass, Shad and River Herring, American Eel, Bluefish, Spiny Dogfish and Coastal Sharks, and Horseshoe Crab.

In addition, FMPs are in place for certain highly migratory species (HMS) that cover the same geographic area for this analysis. These HMSs include tuna, swordfish, sharks, and billfish.

The objectives of these plans vary, but generally seek to achieve the long-term sustainability of the fishery while meeting certain management goals for the commercial fishing industry. Since the 1980s, FMPs have largely applied management techniques such as geographic and seasonal fishery closures, catch limits and quotas, size and age limits, gear restrictions, and access controls to manage targeted species. More recently, "sector management" has been advanced as a new approach to managing the commercial fishing industry. This approach allows for a "self-selected" group of fishers to form a

"sector" and submit a binding operations plan for management of that sector's allocation of catch or effort within a given fishery (see more detailed discussion of Sector Management, below).

In general, the biological concerns for lobster raised by these FMPs are twofold. First, some of these management plans target predator and prey species for lobster, while others target bait and by-catch species and these ecological relationships need to be identified and reflected in the various plans. In theory, fluctuations in population for those species may indirectly affect (positively or negatively, depending) American Lobster. (Of course, the inverse of this is also true: fluctuations in the lobster population may indirectly affect predator/prey species.) Second, each of these management plans contain management restrictions that must be complied with by the regulated industry; for the dual permit holder who holds a lobster permit and who may feel "squeezed" or "shut out" of one of these other fisheries, there may be increased incentive to shift more effort onto the lobster fishery.

Marine Mammal Program: NMFS's Marine Mammal Program is dedicated to protecting whales, dolphins, porpoises, seals and sea lions from harm caused by human activities. The program carries out the mandates of the Marine Mammal Protection Act of 1972, namely to conserve healthy populations and to rebuild (or "recover") populations that are strategic. As discussed in previous chapters (see Chapter 3), marine mammals are relevant to the lobster fishery because of their susceptibility to entanglement from lobster trap gear, particularly vertical lines that link the bottom-tending trap to the surface line buoys.

Of the large whale species that occur within the geographic boundaries for this analysis, the North Atlantic right whale is the most endangered and has been listed as such under the Endangered Species Act (ESA) since the passage of that Act in 1970. Most recent estimates indicate that the North Atlantic right whale population is composed of approximately 345 individuals (Waring et al. 2009). During the late 1800s and early 1900s, right whales were heavily targeted by commercial whalers. Although right whales have been protected from commercial whaling worldwide since 1935, right whale stocks are still extremely depleted (59 FR 28793). Vessel collisions and entanglement in fishing gear are believed to have directly and significantly hindered the recovery of this species (NMFS 2005a, Watkins 1986). Population modeling exercises by NMFS indicate the loss of a single individual could have a negative effect on the survival of the species. As a result, NMFS has set a PBR value of zero for North Atlantic right whales. This means that the death of even one individual is above the acceptable limit and, should it occur, would be considered a long-term major adverse impact.

Atlantic Large Whale Take Reduction Plan (ALWTRP): Partly in response to the concerns described above, NMFS recently revised its Atlantic Large Whale Take Reduction Plan (ALWTRP). The ALWTRP is designed to protect three endangered species – the western North Atlantic stock of right whales, the Gulf of Maine stock of humpback whales, and the western North Atlantic stock of fin whales – from the risk of serious injury and death associated with entanglement in commercial gillnet and trap/pot gear (e.g. American lobster). Since implementation of the ALWTRP in 1997, the National Marine Fisheries Service (NMFS) has modified the plan on several occasions to address the risk of entanglement in commercial fishing gear. The most recent amendments, finalized in October 2007, expanded the scope of the plan to regulate additional fisheries, established new gear modification and marking requirements, and implemented a number of other regulatory changes (72 FR 57104, October 1, 2007; 73 FR 19171, April, 2008). Most of these modifications are now in effect. The estimated increase in annualized ALWTRP compliance costs for the lobster trap/pot fishery based on these modifications is $12,288,000 (NMFS, 2007). Vessels operating in Southern near-shore waters (LMCAs 4, 5 and a portion of 6) would account for 64 percent of compliance costs; vessels operating in Offshore waters (LCMAs 3, 2/3 Overlap, 3/5 Overlap) would account for 21 percent; those in Northern Inshore waters (states waters from Maine through Rhode Island) would account for 10 percent; and those in Northern near-shore waters (Federal waters of LCMAs 1, 2 and Outer Cape) would account for 6 percent.

In coordination with the ALWTRP, NMFS is also developing a vertical line strategy for additional reduction in vertical line entanglement risk. Whale distribution data is being used to help prioritize areas for implementation of future vertical line action(s). These data will be overlaid with the vertical line distribution data to look at the combined densities by area. The model is constructed to allow gear configurations to be manipulated and determine what impact reduction would have in vertical line densities. The intent of the co-occurrence analysis effort is to develop a model that can support the development of a vertical line strategy that will further minimize the risks of large-whale entanglement and associated serious injury and death. The anticipated timeframe for ALWTRP vertical line rule development and plan monitoring is as follows:

- Vertical line model development over the next year for all areas, to gather as much information as possible regarding the distribution and density of vertical line fishing gear. Time frame: Northeast and Southeast finalized by April 2010 and Mid-Atlantic by April 2011;

- Compile and analyze whale distribution and density data in a manner to overlay with fishing gear distribution and density data. Time frame: complete by February 2010 for the Northeast, and refined and completed for the Southeast by April 2010 and Mid-Atlantic by April 2011;

- Development of vertical line and whale distribution co-occurrence overlays. Time frame: by April 2010 for the Northeast and April 2011 for Mid- and South Atlantic;

- Develop and publish proposed rule to implement risk reduction from vertical lines. Time frame: by April 2013;

- Develop and publish final rule to implement risk reduction from vertical lines. Time frame: by April 2014;

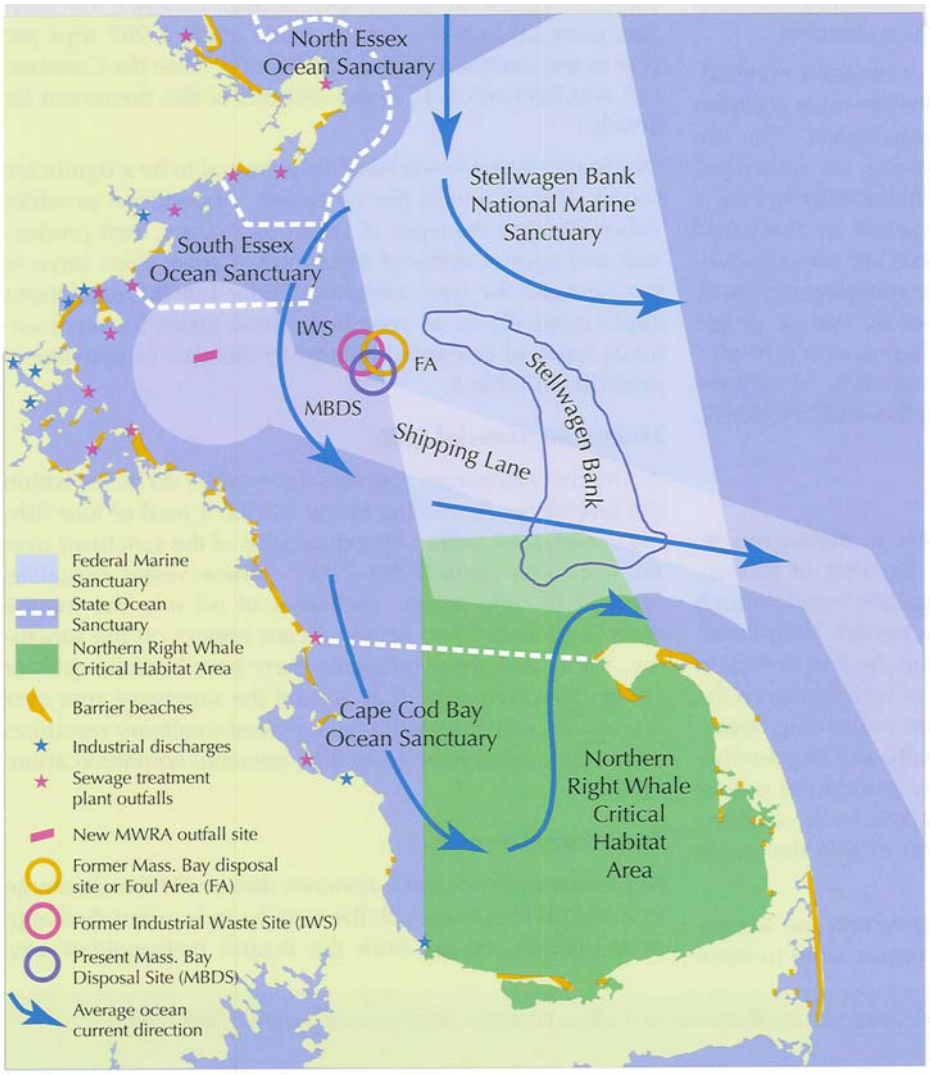
- Implement final rule to implement risk reduction from vertical lines. Time frame: by January 1, 2015;

- Develop an ALWTRP monitoring plan designed to track implementation of vertical line strategy, including risk reduction through implementation of this RPA. Time frame: Adopt plan by January, 2012, with annual interim reports beginning in July 2012.

Ship Strike Rule: In October, 2008, NMFS established regulations to implement speed restrictions of no more than 10 knots applying to all vessels 65 ft (19.8 m) or greater in overall length in certain locations and at certain times of the year along the east coast of the U.S. Atlantic seaboard. These regulations took effect in December, 2008, and are designed to reduce the likelihood of deaths and serious injuries to endangered North Atlantic right whales that result from collisions with ships.[122]

[122] (73 FR 60173, October 10, 2008)

Figure 5.2 - Locations of state and Federal Ocean Sanctuaries, the Cape Cod Right Whale Critical Habitat Area and the pattern of general ocean circulation of the area



Note: Also shows location of sewer outfalls, the MWRA outfall, industrial discharge sites and dumping/disposal sites within Massachusetts Bay. (source: MWRA, 2004)

Essential Fish Habitat (EFH) Program: Under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 et seq.), Congress mandated the identification of habitats essential to species managed under the MSA[123], along with measures to conserve and enhance this habitat. Under the MSA, Congress directs NMFS and the eight regional Fishery Management Councils (under the authority of the Secretary of Commerce) to describe and identify EFH in each fishery management plan

[123] It is important to note that, because the American Lobster Fishery is managed under the Atlantic Coastal Act and not the MSA, EFH requirements do not apply to lobster. Also, NMFS makes recommendations under the EFH provisions of the MSA not only with regard to commercial fishing activities, but on non-fishing activities, such as industrial development projects, etc, that could adversely EFH-protected habitat areas.

(FMP); minimize, to the extent practicable, the adverse effects of fishing on EFH; and identify other actions to encourage the conservation of EFH.

EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. Fishing activity and gear can directly affect EFH through reductions in density of both target and non-target species and through damage to geological structures (sediments, outcrops) and biological organisms (sponges, tube-dwellers). Indirect impacts result from removing keystone predators, altering nutrient cycles, decreasing primary productivity, and changing sediment characteristics and transport mechanisms.[124]

From a cumulative standpoint, it is difficult to measure to extent of impacts on fish habitat that are related to commercial fishing, but it is intuitive that fishing activity has caused short- and long-term, direct and indirect adverse impacts on EFH within U.S. commercial fishing waters. Recent, project-related studies support this: benthic surveys performed for the U.S. Coast Guard's analysis of the Massachusetts off-shore long project, *Neptune*, for example, revealed trawl scars in approximately 19 percent of the proposed port site and approximately 14 percent of the proposed pipeline route sampling sites (Neptune 2006).

5.2.3 Non-Fishing Related Commercial and Industrial Development Actions

Many marine-dependent, non-fishing related activities taking place in both coastal and off-shore waters can contribute to cumulative impacts on lobster-related resources. For this discussion, the activities identified further below are ones that have the potential to effect Federal lobster-related resources (i.e., potential impacts occur beyond the 3-mile limit). At the same time, it is important to consider the impact that coastal and near-shore-area non-fishing activities can have on lobsters and their habitat because lobsters spend a significant portion of their life-cycle in these areas.

Coastal areas in general attract construction and development activities, which in turn contribute to cumulative impacts on coastal resources, including fisheries, as a result of point source pollution, agricultural and urban runoff, land (roads, shoreline development, wetland loss) and water-based (beach nourishment, piers, jetties) coastal development, marine transportation (port maintenance, shipping, marinas), marine mining, dredging and disposal of dredged material and energy-related facilities, all of which are discussed in detail in Johnson et al. (2008). These activities can introduce pollutants (through point and non-point sources), cause changes in water quality (temperature, salinity, dissolved oxygen, suspended solids), modify the physical characteristics of a habitat or remove/replace the habitat altogether, all of which can result in adverse cumulative impacts (particularly near-shore) on the American Lobster and associated resources.

The majority of these activities are permitted by other Federal and state agencies that conduct examinations of potential biological, socioeconomic, and habitat impacts. The following discussion briefly identifies some of the other Federal agencies that exercise jurisdictional authority over coastal and off-shore areas that overlap lobster management areas.

Department of Interior (DOI)/Minerals Management Service (MMS)

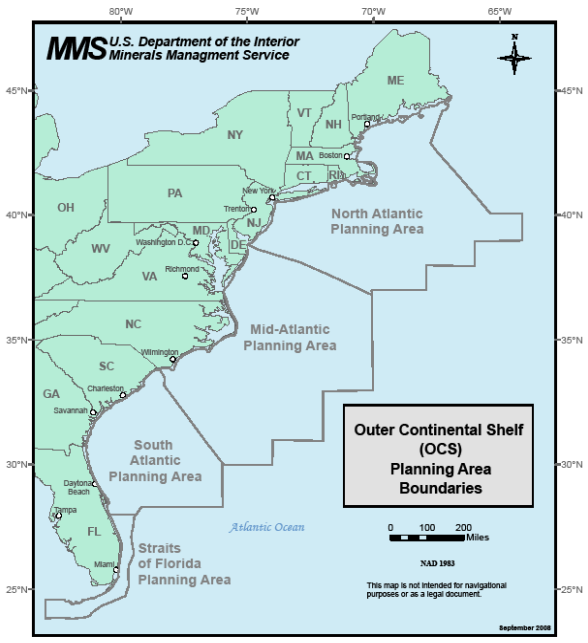
The DOI's MMS is responsible for the management of the more than 1.7 billion acres of submerged lands on the Outer Continental Shelf. In addition to overseeing mineral resource and renewable energy development, MMS is authorized under the Energy Policy Act of 2005 to issue leases, easements, or rights-of-way for other OCS project activities that make alternate use of existing OCS facilities for

[124] (Neptune FEIS, p. 3-47)

"energy-related purposes or for other authorized marine-related purposes," such as: research, education, recreation, and support for offshore operations and facilities. MMS is in the process of promulgating regulations that will allow it to implement these newly authorized programs. Further, MMS is currently evaluating two renewable energy projects proposed in the offshore area of the Eastern United States: Cape Wind, located in Nantucket Sound, Massachusetts (Figure 5.7); and the Long Island Offshore Wind Park, off Long Island, New York (Chart 5.6, see also Energy Projects discussion, below).

Figure 5. 3 - Minerals Management Service Outer Continental Shelf (OCS) Planning Area Boundaries

(Source: www.mms.gov)



Department of Transportation/Maritime Administration (MARAD) and the Department of Homeland Security/US Coast Guard (USCG)

Under the Deep Water Port Act of 2000, all deepwater ports must be licensed by the Secretary of Transportation (Secretary). The Secretary has delegated the responsibility for processing deepwater port applications to the USCG and MARAD. On June 18, 2003, the Secretary delegated authority to the Maritime Administrator of MARAD to issue, transfer, amend, or reinstate a license for the construction and operation of a deepwater port. Following environmental review by the US Coast Guard, MARAD has approved a number of off-shore lng projects, two of which—Neptune and Northeast Gateway—lie within the geographic boundaries of this cumulative impacts analysis (see also project discussion, below).

US Army Corps of Engineers (USACE)

The USACE also shares jurisdictional authority of OCS resources through its navigation program. The mission of the U.S. Army Corps of Engineers' navigation program is to ensure that water traffic can move safely, reliably and efficiently in and out of these ports and harbors with minimal impact upon the

environment. In partnership with local port authorities, the Corps spends nearly $1.5 billion annually on dredging and construction projects to maintain hundreds of ports and harbors nationwide.

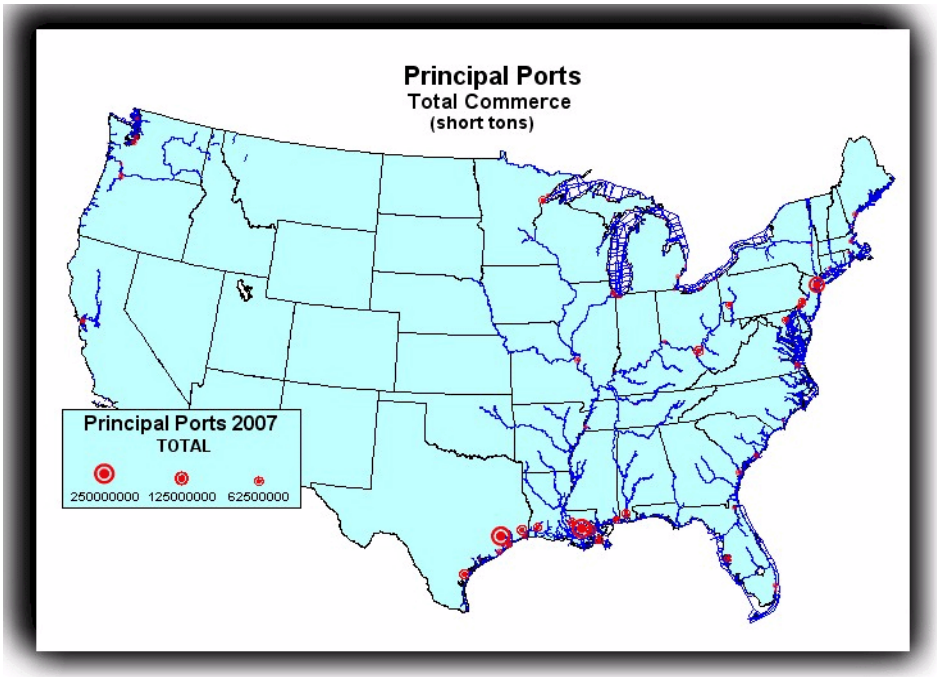
Project Activities

NMFS Role

In addition to guidelines mandated by the Magnuson Act, and the Fish and Wildlife Coordination Act, NMFS, the Councils and the other federal and state regulatory agencies review various projects through processes required by the Clean Water Act; Rivers and Harbors Act; and the Marine Protection, Research, and Sanctuaries Act for certain activities that are regulated by federal, state, and local authorities. Many of these projects requiring Federal approvals are also subject to the Federal review requirements under the National Environmental Policy Act (NEPA). The various statutory review requirements are meant to limit and often mitigate the impact of these projects. The jurisdiction of these authorities is in the "waters of the U.S." and ranges from inland riverine to marine habitats offshore in the EEZ. Some specific examples of these activities are provided below:

Port Projects: Throughout the Eastern seaboard of the United States there are large-to-smaller scale seaports, the operation of which could generate direct and indirect impacts on Federal Lobster-related resources. These ports provide an entryway for commerce and attract economic development that can result in increased vessel traffic, the need to conduct navigational dredging and disposal of dredged material, and the need to designate off-shore ocean disposal sites to accommodate that dredged material. These activities further generate concerns about water and sediment contamination from industrial chemical pollutants.

Figure 5.4 - Principal US Ports - Total Commerce (short tons)



Source: http://www.iwr.usace.army.mil/NDC/wcsc/totton.htm

Energy Projects: Federal off-shore areas are also increasingly being used as sites for energy projects, such as wind farms and lng, and related infrastructure, such as pipelines. These sites potentially compete

with the commercial lobster industry for space and can involve vessel transit restrictions that can prohibit commercial lobster fishing, such as exist adjacent to the sites for the *Neptune* and *Excelerate* off-shore lng facilities (discussed below). Further, laying of the associated pipelines raises concerns about the impact that their placement could have on lobster mobility and lobster habitat in general.

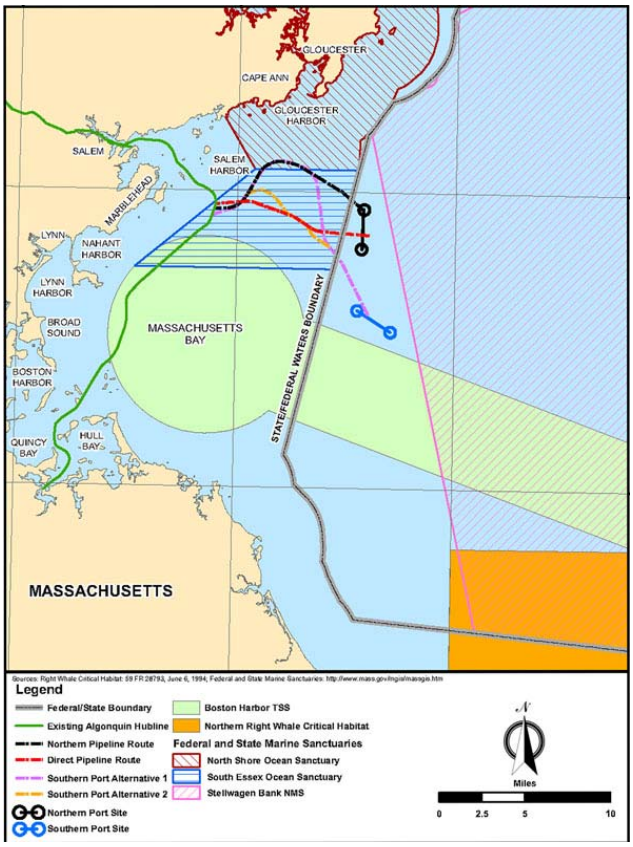
Neptune

On March 26, 2007, the Maritime Administration issued a Deepwater Port License to Suez LNG to build, own, and operate the "Neptune" LNG receiving and regasification facility, to be located in Massachusetts Bay, 10 miles south of Gloucester and 22 miles Northeast of Boston. The port is to be located in approximately 250 feet of water and would be capable of mooring up to two 140,000 cubic meter capacity LNG carriers by means of a submerged unloading buoy system. This facility also includes approximately 11 miles of 24-inch natural gas pipelines that will connect to the existing Algonquin HubLine (FR, Vol. 71, No. 212). On October 31, 2008, pipeline construction activities were completed for the 2008 calendar year. The second phase of construction was scheduled to end in September 2009.

Northeast Gateway

On May 14, 2007, the Maritime Administration issued a Deepwater Port License for Excelerate Energy to own, operate and construct the Northeast Gateway Deepwater Port, also to be located in Massachusetts Bay, approximately 13 miles south-southeast of the city of Gloucester, MA and in federal waters approximately 270-ti-290 feet in depth. This facility also includes approximately 16 miles of pipeline that, like Neptune, will also connect to the existing Algonquin HubLine. (FR, Vol. 71, No. 207) Construction on the Deepwater Port commenced on May 27, 2007. Northeast Gateway received its first LNG cargo through the port system in May of 2008 and continues its operations to date. On February 2, 2009, Excelerate confirmed a second delivery to the port to commission a newly-constructed Energy Bridge Regasification Vessel.

Figure 5.5 - Offshore LNG projects in Relation to Marine Protected Areas in Massachusetts Bay

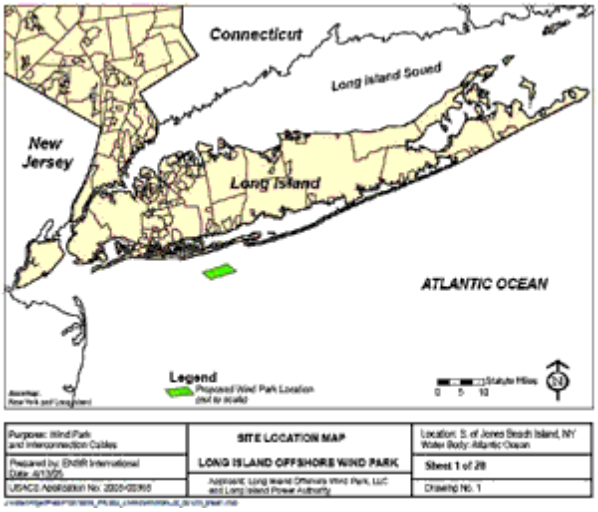


(Source: Neptune 2006)

Cape Wind

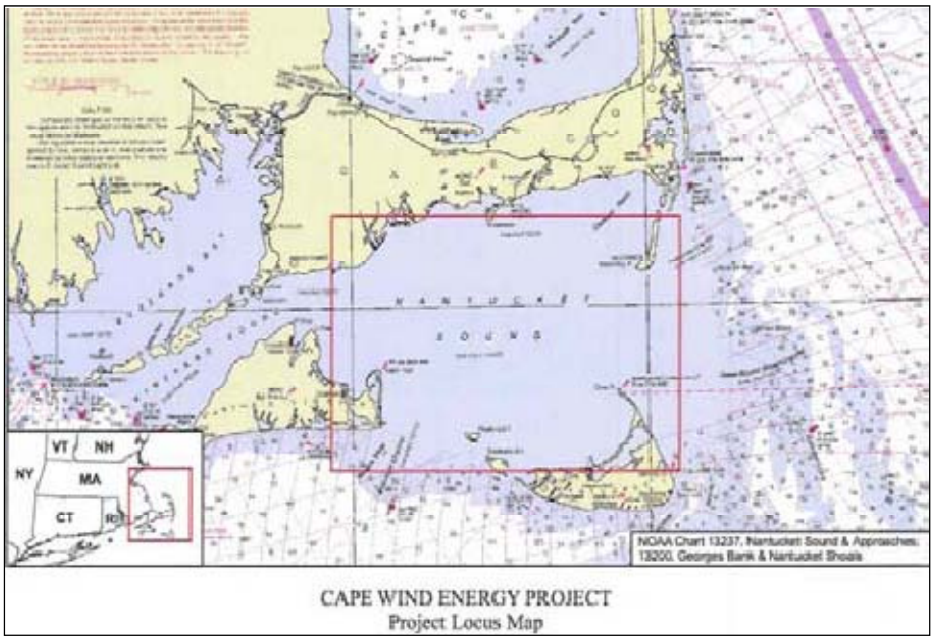
Cape Wind Associates (CWA) proposes to construct a wind farm on Horseshoe Shoal, located between Cape Cod and Nantucket Island in Nantucket Sound, Massachusetts. The CWA project would have 130 wind turbines located as close as 4.1 miles off the shore of Cape Cod in an area of approximately 24 square miles with the turbines being placed at a minimum of 1/3 of a mile apart. The turbines will be interconnected by cables, which will relay the energy to the shore-based power grid. If constructed, the turbines would preempt other bottom uses in an area similar to oil and natural gas leases. The potential impacts associated with the CWA offshore wind energy project include the construction, operation and removal of turbine platforms and transmission cables; thermal and vibration impacts; and changes to species assemblages within the area from the introduction of vertical structures.

Figure 5.6 - Long Island Offshore Wind Park (LIOWP) Site Location Map



(source: http://www.mms.gov/offshore/AlternativeEnergy)

Figure 5.7 - Cape Wind Energy Project Locus Map



(Source: Final EIS, Jan 2009)

Other Actions

Restoration Projects: Other regional projects that are restorative or beneficial in nature include estuarine wetland restoration; offshore artificial reef creation, which provides structure and habitat for many aquatic species; and eelgrass (*Zostera marina*) restoration, which provides habitat for, among other things, juvenile Atlantic cod. These types of projects improve habitats, including nursery habitats for several commercial groundfish species. Due to past and present adverse impacts from human activities on these types of habitat, restorative projects likely have slightly positive effects at the local level.

Stellwagen Bank: National Marine Sanctuaries are marine and coastal areas of special biological significance. The Stellwagen Bank National Marine Sanctuary (SBNMS) lies off the Massachusetts coast and supports active commercial and recreational fisheries. It also serves as a habitat for marine mammals, including endangered species of whales, and draws 1.5 million visitors a year, many of whom are whale watchers. The sanctuary abuts the Massachusetts Bay Disposal Site, which serves as a repository for material dredged from the harbors of Boston and nearby cities. It also lies near Boston's ocean outfall that discharges treated sewage effluent into Massachusetts Bay.

Figure 5. 8 - The Stellwagen Bank NMS Relative to Adjacent Land and Associated Geographic Places

(source: NMFS/NOS)

Commercial fishing with mobile gear, such as trawls and scallop dredges, together with fixed gear, such as bottom-tending gill nets and lobster pots, occurs extensively throughout the sanctuary. Commercial fishermen take species from four principal categories: groundfish, pelagics, other finfish and invertebrates. Stressors resulting from commercial fishing include alteration of habitat and biological communities, removal of biomass, disturbance of feeding whales, entanglement of marine mammals, discharges of pollutants and destruction of historic resources (NMS 2008).

For the 1996-2005 period, the total value of commercial landings from the sanctuary was 2.8% of the total landings value for all fisheries in New England. Lobster ranked 5th and 6th, respectively, among the top ten species landed and commercial fishing gear types used in the SBNMS[125] (NMS 2008).

Besides MMPA and ESA mandates, a number of existing regulations and plans designed to reduce the risk of marine mammal entanglement in the Northeast apply to, but are not specific to, the sanctuary. Regulations that are most applicable to marine mammal entanglement within the sanctuary are those pertaining to trap/pot fisheries and gillnet fisheries. Some examples are as follows:

- Federal lobster trap limits
- Lobster trap gear identification
- Lobster trap maximum size
- Trap/pot gear configuration
- Special restrictions on critical habitat areas
- Reconfiguration of anchored gillnet gear
- Multispecies sink gillnet regulation (aimed at rebuilding overfished groundfish stocks)
- Seasonal and rolling closure areas
- Gear stowage requirements

The ALWTRP addresses broad-based gear modifications and special management areas to reduce serious injury and mortality of right, humpback, and fin whales due to incidental interactions with commercial fisheries (NMS 2008).

Summary of Impacts

As stated earlier, though quantifying the cumulative impacts from the aforementioned activities on American Lobster resources is difficult, some general qualitative conclusions can be made based on the discussion above. First, among the more notable effects are the indicators of biological stress on lobster resources and the social/economic impacts on the regulated fishing community (discussed further below). In terms of biological stress, the 2009 Stock Assessment Report cited high fishing mortality (due to high exploitation rates), low recruitment, and declines in abundance for statistical Area 514, part of GOM, while SNE overall was cited for low recruitment and abundance.[126] The extent to which the various activities identified above have contributed to biological stress in combination with commercial lobster fishing cannot be stated with precision. What can be noted is that regulatory responsibility for many of the non-fishing related actions lie with multiple Federal and/or state agencies and those agencies have acquired over time various authority to evaluate and take appropriate environmental measures to protect affected resources. As said earlier, NMFS often plays a role in that effort through the regulatory consultation process. As a result, impacts on these resources, in general, are being addressed through these efforts and, when present and future lobster management related actions are factored into the analysis, the cumulative impacts on lobster resources as a result are considered to be positive (see Tables 5.1 & 5.2, below).

[125] Based on landed value (2005$) and volume (lbs), respectively.

[126] See Stock Assessment Report No. 09-01 (Supplement) of the Atlantic States Marine Fisheries Commission, *"American Lobster Stock Assessment Report for Peer Review,"* 2009, www.asmfc.org, (ASMFC 2009a).

Also more apparent is that efforts to manage and protect marine resources overall through existing regulatory processes that involve overlapping jurisdictional lines have become more of a challenge and this has resulted in recent initiatives by both the Federal government and some states to establish a more coordinated approach to marine resource management. On June 12, 2009, President Obama issued a Memorandum to Executive Departments ("National Policy for the Oceans, our Coasts, and the Great Lakes") establishing an Interagency Ocean Policy Task Force to be led by the President's Council on Environmental Quality. On December 14, 2009, the Task Force released its "Interim Framework for Effective Coastal and Marine Spatial Planning" (Interim Framework) for a 60-day public review and comment period. Under the Framework, coastal and marine spatial planning would be regional in scope, applying a comprehensive, integrated, ecosystem-based framework for the long-term conservation and use of the nation's resources. The Framework is to be developed cooperatively among Federal, state, tribal, local authorities, and regional governance structures, with substantial stakeholder and public input. With jurisdictional authorities now spread across 20 different agencies operating under 140 separate laws, the President has said he wants established "…a unifying framework under a clear national policy, including a comprehensive, ecosystem-based framework for the long-term conservation and use of our resources." This framework should be "…a comprehensive, integrated, ecosystem-based approach that addresses conservation, economic activity, user conflict, and sustainable use of ocean, coastal, and Great Lakes resources consistent with international law, including customary international law as reflected in the 1982 United Nations Convention on the Law of the Sea."[127]

President Obama's EO is relevant not just to lobster fishery management, but to fishery management and marine resource management in general, because it reflects a growing interest in spatial management of the oceans at both the Federal and state levels.

5.3 Cumulative Impacts on American Lobster-Related Resources by Resource Area

This section will evaluate issue and resource area impacts on American Lobster-related resources in relation to the past, present, and reasonably foreseeable actions discussed above.

Impact Category Definitions and Qualifiers: The following definitions and qualifiers are used in the narratives and tables of this analysis:

Biological Environment-

Positive – actions that increase stock/population size and/or provide added protection of the resource
Negative – actions that decrease stock/population size

Physical Environment-

Positive – actions that improve the quality or reduce disturbance of habitat
Negative – actions that degrade the quality or increase disturbance of habitat

Social Environment:

Positive – actions that increase revenue and well-being of fishermen and/or associated businesses
Negative – actions that decrease revenue and well-being of fishermen and/or associated businesses

Economic Environment:

[127] http://www.whitehouse.gov/administration/eop/ceq/initiatives/oceans/interim-framework (The White House Council on Environmental Quality 2009).

Positive – actions that increase revenue and well-being of fishermen and/or associated businesses
Negative – actions that decrease revenue and well-being of fishermen and/or associated businesses

General Qualifiers:

Low (as in "*low* positive" or "*low* negative"): to a lesser degree
High (as in "*high* positive" or "*high* negative"): to a substantial degree
Negligible: a degree of impact immeasurably small
Likely*:* based upon the anticipated action, the likely effect is based upon best professional judgment

Table 5.1, below, summarizes these potential cumulative impacts from the Limited Access LCMA OCC & LCMA2 Alternatives.

Table 5.1 - Cumulative Impacts on Lobster-Related Resources from LAP Program Alternatives

Resource/ Issue Area	Proposed Action & Alternatives	Past Actions	Current Background Activities	Future Actions	Cumulative Impacts
Regulatory Setting for American Lobster	Positive regulatory impacts would be expected under the proposed management measures and alternatives. Federal mgmt measures would be compatible with ASMFC-approved measures and inconsistencies between state and Federal lobster fishery management would be largely eliminated.	Since 1997, lobster management has evolved into an increasingly complex state/Federal regulatory environment. Individual states have advanced numerous management measures, some of which are out-of-sync with each other, while the Federal government has struggled to promote regulatory consistency between state and Federal management efforts through its own rule-making processes in response to Commission actions.	On-going disconnects between Federal-state management of lobster resource. FMPs for bait fish and by-catch species in effect, as are Marine Mammal protection measures.	Lobster broodstock measures; LCMA 1 Limited Access potential; potential management action for SNE lobster stock based on '09 assessment.	Positive
Biological/ Physical Resources					
Lobster	Proposed measures and alternatives would put a cap on fishing effort, and thus limit stress from these activities to historical levels.	Evidence of stresses on parts of the resource from low recruitment and abundance and the impact of commercial lobster fishing. Commercial and industrial development activities can contribute to degradation of physical habitat. Impacts on lobster resources from these actions are largely mitigated through Federal and state regulatory oversight.	Commercial lobster fishing activity continues to stress some areas within the fishery, most notably the SNE stock area. Increase in use of "sector management" approach to fisheries potentially raises incentive to shift effort into the lobster fishery. This will require monitoring by NMFS.	Broodstock measures will combine with effort control measures (should both be approved) to reduce stress on the resource; potential management action for SNE lobster stock based on '09 assessment.	Positive

Resource/ Issue Area	Proposed Action & Alternatives	Past Actions	Current Background Activities	Future Actions	Cumulative Impacts
Protected Resources	With effort capped and management disconnects reduced under proposed lobster management measures (except No Action), protection for protected resources is improved.	North Atlantic right whale stocks critically endangered. Vessel collisions and entanglement in fishing gear are believed to have directly and significantly hindered the recovery of this species. NMFS indicates that the loss of a single individual could have a negative effect on the survival of the species. NMFS Final Rule on Ship Strike Reduction Measures (73 FR 60173, October 10, 2008). Under this rule, which went into effect Dec, 2008, the on-going threat to North Atlantic right whales and other whale species in the region from ship strikes is expected to be significantly reduced.	NMFS's ALWTRP is designed to protect three endangered species – the western North Atlantic stock of right whales, the Gulf of Maine stock of humpback whales, and the western North Atlantic stock of fin whales – from the risk of serious injury and death associated with entanglement in commercial gillnet and trap/pot gear (e.g. American lobster).	MMPA vertical line final rule scheduled for 2014.	Likely Positive
By-Catch Species	For both Red Crab and Jonah Crab: status quo conditions would remain, resulting in neutral impact on these by-catch species.	Red Crab: Threat from overfishing and over-capitalization of the fishery led to development of an FMP for this fishery in 2005. Jonah Crab: Historically unregulated fishery; little is known about the status of the resource.	Red Crab: Existing FMP to manage the fishery. Jonah Crab: No Federal FMP exists for this resource.	ASMFC is reviewing status of resource and likely to further regulate the fishery.	Positive
Bait Fish Species	Atlantic Herring: under proposed LAP measures, status quo conditions would remain, resulting in neutral impact on these by-catch species.	Atlantic Herring: Resource is not overfished and overfishing is not occurring, although TAC volumes remain volatile.	Atlantic Herring: Resource is not overfished and overfishing is not occurring.	Stock is managed by NMFS & ASMFC. While future regulation is expected, it is not now known what those measures will be.	Positive
Economic Environment	No economic impacts are expected from LAP alternatives since participation is expected to reflect historical levels.	From 1998-2004, American Lobster was highest value fishery in NE Region and remains one of highest in the US today.	Profit margins for some lobster fishers are being squeezed as costs associated with lobster fishing are rising.	Economic uncertainty re costs/revenues associated with the lobster industry likely to continue.	Neutral

Resource/ Issue Area	Proposed Action & Alternatives	Past Actions	Current Background Activities	Future Actions	Cumulative Impacts
Social Environment	Proposed measures and alternatives would put a cap on fishing effort, and thus restrict participation in the short term to historical levels.	Regulation of the American lobster fishing industry, as well as other commercial fishing industries, has increased substantially over the past decade in response to biological concerns for fishery resources. Affected fishing communities have expressed concerns with the difficulties of preserving the cultural heritage associated with their ties to fishing as a way of life, which they believe are under growing threat from regulation and competition for other uses of coastal real estate.[128]	Effort control and broodstock programs in some LCMAs have limited fishing activities, concentrating participation among communities and capping future levels of participation. Within some fishing communities, cultural organizations maintain a strong presence in support of local efforts to address social concerns for fishers and their families and efforts to maintain cultural heritage.	On-going regulatory actions, unknown at this time, will cumulatively add to the regulatory requirements placed on the fishing industry.	Neutral-to-Positive

[128] http://www.nefsc.noaa.gov/read/socialsci/community_profiles/ (See also Appendix 10) (NEFSC 2008).

Table 5.2, below, summarizes the potential cumulative impacts from the ITT program Alternatives.

Table 5.2 - Cumulative Impacts on Lobster-Related Resources from ITT Program Alternatives

Resource/Issue Area	Proposed Action & Alternatives	Past Actions	Current Background Activities	Future Actions	Cumulative Impacts
Regulatory Setting for American Lobster	Positive regulatory impacts would be expected under the proposed management measures and alternatives. Federal mgmt measures would be compatible with ASMFC-approved measures and inconsistencies between state and Federal lobster fishery management would be largely eliminated.	Since 2000, lobster management has evolved into an increasingly complex state/Federal regulatory environment. Individual states have advanced numerous management measures, some of which are out-of-sync with each other, while the Federal government has struggled to promote regulatory consistency between state and Federal management efforts through its own rule-making processes in response to Commission actions.	On-going disconnects between Federal-state management of lobster resource. FMPs for bait fish and by-catch species in effect, as are Marine Mammal protection measures.	Lobster broodstock measures; LCMA 1 Limited Access potential; potential management action for SNE lobster stock based on '09 assessment.	Positive
Biological/Physical Resources					
Lobster	Proposed measures could cause minor negative impacts on lobster population if latent effort within the fishery is triggered. Moderate positive impacts are expected as a result of conservation measures built in to ITT provisions that will over time reduce the number of traps in the water.	Evidence of stresses on part of resource from low recruitment and abundance and due to fishing mortality Commercial and industrial development activities contribute to degradation of physical habitat. Impacts on lobster resources from these actions are largely mitigated through Federal and state regulatory oversight.	Commercial lobster fishing activity continues to stress some areas within the fishery, most notably the SNE stock area. Increase in use of "sector management" approach to fisheries potentially raises incentive to shift effort into the lobster fishery. This will require monitoring by NMFS.	Broodstock measures will combine with effort control measures (should both be approved) to reduce stress on the resource; potential management action for SNE lobster stock based on '09 assessment. Over time, benefits of "conservation tax" under ITT will reduce number of traps fished, thereby reducing effort.	Positive

Resource/Issue Area	Proposed Action & Alternatives	Past Actions	Current Background Activities	Future Actions	Cumulative Impacts
Protected Resources	Proposed conservation measures and alternatives would in the longer-term reduce the number of traps in the water, along with associated vertical lines that are a threat to endangered marine mammals and sea turtles.	North Atlantic right whale stocks critically endangered. Vessel collisions and entanglement in fishing gear are believed to have directly and significantly hindered the recovery of this species. NMFS indicates that the loss of a single individual could have a negative effect on the survival of the species. NMFS Final Rule on Ship Strike Reduction Measures (73 FR 60173, October 10, 2008). Under this rule, which went into effect Dec, 2008, the on-going threat to North Atlantic right whales and other whale species in the region from ship strikes is expected to be significantly reduced.	NMFS's ALWTRP is designed to protect three endangered species – the western North Atlantic stock of right whales, the Gulf of Maine stock of humpback whales, and the western North Atlantic stock of fin whales – from the risk of serious injury and death associated with entanglement in commercial gillnet and trap/pot gear (e.g. American lobster).	Over time, benefits of "conservation tax" under ITT will reduce number of traps fished, thereby reducing vertical lines in the water and thus the threat of entanglement.	Possible Short-term Negative & Probable Long-term Positive
By-Catch Species	For both Red Crab and Jonah Crab: under proposed LAP measures, status quo conditions would remain, resulting in neutral impact on these by-catch species. Under proposed ITT measures and alternatives, possible minor, short-term, negative impacts could occur should latent effort in lobster fishery be triggered; long-term effects from fewer traps in the water would be positive.	Red Crab: Threat from overfishing and over-capitalization of the fishery led to development of an FMP for this fishery in 2005. Jonah Crab: Historically unregulated fishery; little is know about the status of the resource.	Red Crab: Existing FMP to manage the fishery. Jonah Crab: No Federal FMP exists for this resource.	ASMFC is reviewing status of resource and likely to further regulate the fishery.	Positive
Bait Fish Species	Atlantic Herring: under proposed LAP measures, status quo conditions would remain, resulting in neutral impact on by-catch species. Under proposed ITT	Atlantic Herring: Resource is not overfished and overfishing is not occurring.	Atlantic Herring: Resource is not overfished and overfishing is not occurring.	Stock is being managed by NMFS & ASMFC. While future regulation is expected, it is not now known what those measures will	Positive

Resource/Issue Area	Proposed Action & Alternatives	Past Actions	Current Background Activities	Future Actions	Cumulative Impacts
	measures and alternatives, possible minor, negative impacts could occur should latent effort in lobster fishery be triggered; long-term effects from fewer traps in the water would be positive.			be.	
Economic Environment	Ability to "buy" and "sell" traps among qualified fishers with approved allocations leads to increased economic efficiencies within commercial lobster fishing industry overall.	From 1998-2004, American Lobster was highest value fishery in NE Region and remains one of highest in the US today.	Profit margins for some lobster fishers are being squeezed as costs associated with lobster fishing are rising.	Economic uncertainty re costs/revenues associated with the lobster industry likely to continue.	Positive
Social Environment	Longer term, conservation measures under ITT will reduce number of traps in water and, hence, have an impact on the amount of effort (i.e., participants) this fishery can support. "Efficiencies" promoted under ITT has a concurrent effect of maximizing economic returns and improving overall social welfare of those who participate.	Regulation of the American lobster fishing industry, and other commercial fishing industries, has increased over the past decade in response to concerns for fishery resources. Affected fishing communities have expressed concerns with difficulties of preserving cultural heritage associated with their ties to fishing as a way of life, which they believe is under growing threat from regulation and competition for other uses of coastal real estate.[129]	Effort control and broodstock programs in some LCMAs have limited fishing activities, concentrating participation among communities and capping future levels of participation. Within some fishing communities, cultural organizations maintain strong presence in support of local efforts to address social concerns for fishers and their families and efforts to maintain cultural heritage.	On-going regulatory actions, unknown at this time, will cumulatively add to the regulatory requirements placed on the fishing industry.	Positive

Regulatory Setting

Although lobster has always been regulated in modern times – indeed some of the first fishery regulations involved lobster[130] - the last ten 10 years have seen a flurry of regulatory activity and a sea change in the lobster regulatory setting. In contrast to just 10 years ago when the lobster fishery was managed by the New England Fishery Management Council principally using gauge restrictions, the fishery is now managed by the Commission, with seven separate management areas, each of which has separate and

[129] http://www.nefsc.noaa.gov/read/socialsci/community_profiles/ (See also Appendix 10) (NEFSC 2008).

[130] Lobster management began, arguably, in the late 19th century. In 1872, Maine passed a law prohibiting the taking of egg-bearing females. (Acheson - 1997) In 1874, Maine also passed one of the first gauge laws by prohibiting the catch of lobster less than 10 ½ inches (head to tail) from October 1st and April 1st. (Acheson/Knight - 2000 ?). In 1878, Connecticut enacted a closed season for egg-bearing lobsters. Her sister states, Massachusetts and Maine, promulgated similar regulations soon thereafter in 1880 and 1883, respectively. (FMP - 1978. p.71).

distinct (i.e., different) management measures. Further, access is limited to certain qualified individuals in both the state waters of LCMAs 2, 3, 4, 5, 6 and OCC, in the Federal waters of LCMAs 3, 4, and 5 and the Commission is considering limiting access to LCMA 1 (Chapters 1 and 3 discuss all these issues in detail).

At the same time, concerns have mounted about the growing inconsistencies in management of the lobster resource across LCMA jurisdictions and the difficulties that arise when trying to administer a shared Federal-state regulatory program that lacks uniformity. Addendum XII (which contains the ASMFC-approved measures that form the basis for this analysis) was largely a response to these concerns. To the extent that the management measures considered herein are compatible with the Commission-approved measures administered by the states and better uniformity across Federal-state jurisdictions is achieved, the cumulative effects on the regulatory setting for American Lobster noted above will be positive (see Tables 5.3a and 5.3b, below).

Table 5.3a - LAP Alternatives - Cumulative Impacts on Regulatory Setting

	Alt 1 - No Action	Alt 2 - Commission	Alt 3 – Qualify Only
LCMA OCC	Likely high negative	Likely high positive	Likely high negative
LCMA 2	Likely high negative	Likely high positive	Likely high negative

Table 5.3b - ITT Alternatives - Cumulative Impacts on Regulatory Setting

	Alt 1 – No Action	Alt 2 - Commission	Alt 3 – LCMA 3 Only	Alt 4 – Optional ITT
ITT Program in LCMAs 2, 3, and OCC	Likely high negative	Likely high positive	Likely low positive	Likely high positive

Biological and Physical Resources

Lobster

As discussed in Chapter 1, the 2009 Stock Assessment Report concluded that, in general, "(t)he American lobster fishery resource presents a mixed picture, with stable abundance for much of the GOM stock, increasing abundance for the GBK stock, and decreased abundance and recruitment yet continued high fishing mortality for the SNE stock."[131]

More specifically, the Report made the following conclusions with regard to each stock area:

[131] See Stock Assessment Report No. 09-01 (Supplement) of the Atlantic States Marine Fisheries Commission, *"American Lobster Stock Assessment Report for Peer Review,"* 2009, www.asmfc.org, (ASMFC 2009a).

"Current abundance of the GOM stock overall is at a record high compared to the 26-year time series. Recent exploitation rates have been comparable to the past whereas recruitment has steadily increased since 1997. The exception is statistical Area 514 which has continued to experience very high exploitation rates and declines in recruitment and abundance since the last assessment. Restrictions are warranted given the persistence of low recruitment and its negative effect on total abundance and egg production potential. Across GOM, effort levels in recent years are the highest observed since 1982 (both in number of traps and soak time) and further increases in effort are not advisable.

Current abundance of the GBK stock is at a record high compared to the 26-year time series and recent exploitation rates are at a record low. Recruitment has remained high in GBK since 1998. Sex ratio of the population in recent years is largely skewed toward females for unknown reasons (~80% from 2005 to 2007).

Current abundance of the SNE stock is the lowest observed since the 1980s and exploitation rates have declined since 2000. Recruitment has remained low in SNE since 1998. Given current low levels of spawning stock biomass and poor recruitment further restrictions are warranted."

In terms of reasonably foreseeable future actions, concerns have been noted about the potential impact on the lobster fishery from redirected effort as a result of the proposed sector management program for ground fish. As stated above, initiatives are underway to expand the use of "sectors" and this in theory could increase the incentive for trawlers with lobster permits (i.e., dual permit holders) to compensate for any shortcomings in terms of allocations for ground fish by fishing up to the 100-lobsters-per-day limit (for non-trap fishers) currently allowed under the regulations for American Lobster. The extent to which a directed lobster fishery will emerge as an indirect effect from the increase use of sector management is speculative at this point; NMFS is aware of the issue, however, and will review harvest data to monitor for these concerns as the sectors become active. If there appears to be an alarming increase in the harvest of lobster by sector vessels, NMFS will coordinate with the ASMFC to more specifically address these issues.

From a cumulative standpoint, impacts from the non-fishery-related aforementioned activities on lobster populations have not been measured in any quantitative way. From a theoretical standpoint, at the larger-scale population level, the impact of these activities on lobster populations that have a limited or negligible exposure to these local non-fishing perturbations is likely minor-to-negligible. Further, protection of these resources under existing regulatory requirements would continue. Many of the activities identified will continue into the reasonably foreseeable future and negative impacts from disturbance, construction and operational activities may also continue as a result; given the wide distribution of lobster-related resources in the analysis area, however, minor overall negative effects are anticipated since the affected areas are localized to the project sites and overall exposure to the population or habitat as a whole would be limited.

Cumulative impacts on lobster resources under the various alternatives examined in this EIS are largely influenced by the extent to which the level of fishing effort either increases or decreases under each option. For the LAP alternatives, effort will be capped at historic levels and thus the cumulative impacts on lobster resources (positive or negative) are expected to be very low. For the ITT alternatives, the distinction between options is clearer, as Alternatives 2 and 4 allow for the greatest benefits from a "conservation tax," while Alternatives 1 (No Action) and 3 offer no or limited benefits in terms of reduced fishing effort.

Table 5.4a - LAP Alternatives - Cumulative Impacts of Lobster Resources

	Alt 1 - No Action	Alt 2 - Commission	Alt 3 – Qualify Only
LCMA OCC	Likely negligible negative	Likely low positive	Likely negligible positive
LCMA 2	Likely low negative	Likely low positive	Likely negligible negative

Table 5.4b - ITT Alternatives - Cumulative Impacts of Lobster Resources

	Alt 1 – No Action	Alt 2 - Commission	Alt 3 – LCMA 3 Only	Alt 4 – Optional ITT
ITT Program in LCMAs 2, 3, and OCC	Likely high negative	Likely positive	Likely low positive	Likely high positive

Protected Resources

As stated previously, North Atlantic right whale stocks are critically endangered. Vessel collisions and entanglement in fishing gear are believed to have directly and significantly hindered the recovery of this species and analysis by NMFS indicates that the loss of a single individual could have a negative effect on the survival of the species. NMFS's ALWTRP is designed to protect three endangered species – the western North Atlantic stock of right whales, the Gulf of Maine stock of humpback whales, and the western North Atlantic stock of fin whales – from the risk of serious injury and death associated with entanglement in commercial gillnet and trap/pot gear (e.g. American lobster). These regulatory actions are anticipated to have a positive cumulative effect on endangered marine mammal populations. Further, NMFS's Final Rule on Ship Strike Reduction Measures is expected to significantly reduce the threat of ship strikes on North Atlantic right whales and other whale species in the region and this will also have a positive cumulative impact on protected resources.

From a cumulative standpoint, the proposed American Lobster Limited Access programs for LCMAs 2, 3 and the OCC would have an overall negligible-to-low positive impact on protected resources, given that better-aligned Federal/state jurisdictions will have a positive influence of the ability to enforce protective measures for these resources. Under the proposed ITT program, it is possible, but unlikely that short-term negative impacts on protected species could occur should latent effort be triggered, thereby increasing the number of lobster traps and related gear in the water in the near term. Because all of the ITT alternatives include measures to reduce traps over time, however, cumulative impacts on protected species in the long term are expected to be positive.

Table 5.5a - LAP Alternatives - Cumulative Impacts on Protective Resources

	Alt 1 - No Action	Alt 2 - Commission	Alt 3 – Qualify Only
LCMA OCC	Likely low negative	Likely negligible positive	Likely negligible positive
LCMA 2	Likely low negative	Likely low positive	Likely low positive

Table 5.5b- ITT Alternatives - Cumulative Impacts on Protected Resources

	Alt 1 – No Action	Alt 2 - Commission	Alt 3 – LCMA 3 Only	Alt 4 – Optional ITT
ITT Program in LCMAs 2, 3, and OCC	Likely high negative	Likely high positive	Likely low positive	Likely high positive

By-Catch Species

Red Crab

In the 1950's, commercial concentrations of American lobsters were found in offshore waters south of New England and whenever these lobsters were targeted in waters deeper than 200 fathoms, red crabs were caught as by-catch (Holmsen 1978). In New England, red crab has been the target of a directed fishery since the 1970's, although the landings have not been consistent and have varied considerably through the years. In early 2001, faced with an increase in the number of vessels targeting the red crab resource, the Council requested that the Secretary of Commerce take emergency action to prevent overfishing in the red crab fishery while the Council continued to develop an FMP. On May 8, 2001, NMFS announced a set of emergency regulations designed to prevent overfishing, for a 180-day period effective May 18 - November 14, 2001 (66 FR 23182). The emergency regulations were extended for a second 180-day period, effective November 15, 2001 - May 14, 2002. An FMP was subsequently developed in 2005 to address the threat from overfishing of the red crab resource and overcapitalization of the red crab fishery.

From a cumulative standpoint, the proposed American Lobster Limited Access programs for LCMAs 2, 3 and the OCC would have an overall negligible-to-low positive impact on Red Crab resources, given that better-aligned Federal/state jurisdictions will have a positive influence of the ability to enforce protective measures for these resources. Under the proposed ITT program, it is possible that minor, short-term, negative impacts on Red Crab could occur should latent effort in the American Lobster fishery be triggered, thereby indirectly increasing the level of by-catch. Because all of the ITT alternatives include measures to reduce traps over time, however, cumulative impacts on Red Crab in the long term are expected to be positive.

Jonah Crab

As stated in Chapter 3, *Affected Environment*, Jonah Crab is currently an unregulated species in Federal waters and little is known about its biology, distribution, and relative abundance. Nonetheless, cumulative impacts are expected to be similar to those identified for the Red Crab resource, above. The proposed American Lobster Limited Access programs for LCMAs 2, 3 and the OCC would have an overall negligible-to-low positive impact on Red Crab resources, given that better-aligned Federal/state jurisdictions will have a positive influence of the ability to enforce protective measures for these resources. . Under the proposed ITT program, it is possible that minor, short-term, negative impacts on Jonah Crab could occur should latent effort in the American Lobster fishery be triggered, thereby indirectly increasing the level of by-catch. Because all of the ITT alternatives include measures to reduce traps over time, however, cumulative impacts on Jonah Crab in the long term are expected to be positive.

Bait Fish Species

Atlantic Herring

The herring fishery in New England developed in the late 19th century, spurred by the development of the canning industry. The lobster fishery developed about the same time, creating a market for herring as bait. Landings averaged 60,000 metric tons throughout the late 1890s and early 1900s, and again in the late 1940s and 1950s. An aggressive foreign fishery developed on Georges Bank in the early 1960s, with landings peaking at 470,000 metric tons in 1968. This excessive harvest led to a collapse of the herring stock offshore. Since 2000, landings have averaged 90,000 metric tons, the majority being taken from the Gulf of Maine.

As stated in Chapter 3, *Affected Environment*, currently the Atlantic Herring resource is not overfished and overfishing is not occurring (ASMFC 2006c). From a cumulative standpoint, the proposed American Lobster Limited Access programs for LCMAs 2, 3 and the OCC would have an overall negligible-to-low positive impact on Atlantic Herring resources, given that better-aligned Federal/state jurisdictions will have a positive influence of the ability to enforce protective measures for these resources. Under the proposed ITT program, it is possible that minor, short-term, negative impacts on Atlantic Herring could occur should latent effort in the American Lobster fishery be triggered, thereby indirectly increasing the demand for Atlantic Herring as bait. Because all of the ITT alternatives include measures to reduce traps over time, however, cumulative impacts on Atlantic Herring in the long term are expected to be positive.

Table 5.6a - LAP Alternatives - Cumulative Impacts on By-Catch and Bait Fish

	Alt 1 - No Action	Alt 2 - Commission	Alt 3 – Qualify Only
LCMA OCC	Likely negligible-to-low negative	Likely negligible-to-low positive	Likely negligible-to-low positive
LCMA 2	Likely low negative	Likely low positive	Likely low positive

Table 5.6b - ITT Alternatives - Cumulative Impacts on By-Catch and Bait Fish

	Alt 1 – No Action	Alt 2 - Commission	Alt 3 – LCMA 3 Only	Alt 4 – Optional ITT
ITT Program in LCMAs 2, 3, and OCC	Likely low negative	Likely low positive	Likely negligible positive	Likely low positive

Economic Environment

With regard to the limited access program options, since direct and indirect economic impacts are expected to be neutral, no cumulative economic impacts are expected under Alternative 2-Commission Alternative. Under Alternatives 1 and 3, the possibility of some small dilution of current/future profits have been noted (see Section 4.5.1) and thus the possibility of low negative cumulative impacts also exists. Under the ITT program alternatives, given the potential for important economic efficiencies to be realized (see 4.5.3), low-to-high positive economic impacts are possible, depending on which option is chosen (see 5.7b, below).

Table 5.7a - LAP Alternatives - Cumulative Impacts on Economic Environment

	Alt 1 - No Action	Alt 2 - Commission	Alt 3 – Qualify Only
LCMA OCC	Likely low negative	Likely neutral	Likely low negative
LCMA 2	Likely low negative	Likely neutral	Likely low negative

Table 5.7b - ITT Alternatives - Cumulative Impacts on Economic Environment

	Alt 1 – No Action	Alt 2 - Commission	Alt 3 – LCMA 3 Only	Alt 4 – Optional ITT
ITT Program in LCMAs 2, 3, and OCC	Likely low negative	Likely moderate-to-high positive	Likely low positive	Likely high positive

Social Environment

Again, under a limited access program, lobster fishing is capped at historical levels of effort, meaning those fishers who can demonstrate a fishing history will continue to be able to fish at the same level of effort. At the same time, some fishers who might otherwise, in theory, have been able to fish in Federal waters, but are unable to demonstrate that they have historically fished for lobster, will no longer be "qualified" to do so. If they choose to participate in ITT and have a valid Federal lobster permit, they can enter the fishery through these means. For those fishers who have permits to fish in other fisheries, they potentially have other economic options in terms of fishing. Because fishers are both "qualified" to fish and allocated traps based on historical fishing practice, NMFS believes that the cumulative effects of a limited access program on the affected fishing communities will be neutral.

Under an ITT program, the social benefits are potentially significant for those who participate. These fishers have an opportunity to realize new economic efficiencies that ultimately will translate into positive social benefits. From a cumulative impacts standpoint, NMFS believes that these social impacts will be positive for the affected fishing communities.

Table 5.8a - LAP Alternatives - Cumulative Impacts on Social Environment

	Alt 1 - No Action	Alt 2 - Commission	Alt 3 – Qualify Only
LCMA OCC	Likely neutral	Likely neutral	Likely neutral
LCMA 2	Likely low negative	Likely neutral	Likely neutral

Table 5.8b - ITT Alternatives - Cumulative Impacts on Social Environment

	Alt 1 – No Action	Alt 2 - Commission	Alt 3 – LCMA 3 Only	Alt 4 – Optional ITT
ITT Program in LCMAs 2, 3, and OCC	Likely moderate-to-high negative	Likely moderate-to-high positive	Likely moderate positive	Likely high positive

Chapter 6 – Other Applicable Law

OTHER APPLICABLE LAW CHAPTER 6

6.1 Coastal Zone Management Act (CZMA)

The principal objective of the CZMA is to encourage and assist states in developing coastal management programs, to coordinate state activities, and to safeguard regional and national interest in the coastal zone. Section 307(c) of the CZMA requires Federal activity affecting the land or water uses or natural resources of a state's coastal zone be consistent with that state's approved coastal management program, to the maximum extent practicable. **NMFS provided a copy of this draft environmental impact statement and a consistency determination to the state coastal management agency in every state with a federally-approved coastal management program whose coastal uses or resources are affected by these lobster management measures.** Each state has sixty days in which to agree or disagree with the determination regarding consistency with that state's approved coastal management program. If a state fails to respond within sixty days, the state's agreement may be presumed.

6.2 Paperwork Reduction Act (PRA)

The purpose of the Paperwork Reduction Act is to reduce the paperwork burden on the public. The Director of the Office of Management and Budget (OMB) has the authority to manage information collection and record keeping requirements in order to reduce paperwork burdens. This authority encompasses the establishment of guidelines and policies and the approval of information collection requests. The selected management actions in this environmental assessment do contain new collection-of-information requirements subject to the PRA.

A paperwork reduction act analysis, including a revised Form 83i and supporting statement will be submitted to OMB along with the proposed rule for this action. The reporting requirements may be applicable to the proposed LAP actions, as well as the proposed ITT alternatives, with the exception of the no action options. This action would revise a submission approved as 0648-0229. This action would require Federal lobster permit holders fishing in LCMAs 2, 3, and the OCLMA, to document fishing participation and trap fishing effort in Areas 2 and the OCLMA, or agree to abide by the more restrictive of either state or Federal allocations prior to participation in an ITT Program. A paperwork reduction act analysis, including a revised Form 83i and supporting statement will identify the expected increase in the public reporting burden, by annual response hours, and an estimated annual cost to the public.

6.3 Section 515 Information Quality Determination

6.3.1 Utility of Information Product

The document includes a description of the alternatives considered and the reasons for selecting the proposed management measures. The proposed measures are intended to meet the conservation and management goals of the ISFMP, consistent with the ACA and the Magnuson-Stevens Act national standards. This document utilizes the best available information to evaluate the potential impacts of the alternatives considered. The Federal Register notice that announces the availability of this EIS will be made available in printed publication and on the NMFS Northeast Regional Office web site at www.nero.noaa.gov. This document provides metric conversions for all measurements.

The intended users of the information are individuals involved in the American lobster fishery, such as fishermen, vessel owners and operators, lobster dealers, and processors. This EIS addresses measures for implementation in the American lobster fishery. The document is based on the most current information available and will be subject to public comment through proposed rulemaking as required under the Administrative Procedures Act.

The proposed rule will be made available to the public as a publication in the Federal Register and, as with the final EIS and final rule, will be available in hard copy format and on the NMFS Northeast Regional Office web site at www.nero.noaa.gov.

6.3.2 Integrity of Information Product

All electronic information disseminated by the NOAA adheres to the standards set out in Appendix 3, "Security of Automated Information Resources" OMB Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

6.3.3 Objectivity of Information Product

The EIS falls under the Natural Resource Plan category. In preparing the documents, NMFS must comply with the requirements of the Atlantic Coastal Act; the Regulatory Flexibility Act, the Paperwork Reduction Act, the Coastal Zone Management Act, the Endangered Species Act, the Marine Mammal Protection Act, the Data Quality Act, the National Standards of the Magnuson-Stevens Act, the National Environmental Policy Act (NEPA), Executive Order 13132 (Federalism), Executive Order 12866 (Regulatory Planning), and other applicable laws.

The document has been developed to comply with all applicable National Standards, including National Standard 2. National Standard 2 states that management measures shall be based upon the best scientific information available. Despite current data limitations as discussed in this document, the conservation and management measures proposed to be implemented are based upon the best scientific information available. This information includes NMFS dealer weighout and permit data, and the most current stock assessment available. The specialists who worked with these data are familiar with the most recent analytical techniques and with the available data and information relevant to the lobster fishery.

The proposed policy choices *(i.e.*, management measures) to be implemented are supported by the available scientific information, and, in cases where information was unavailable, proxy reference points are based on observed trends in the survey data. The management measures are designed to meet the conservation goals and objectives of the ISFMP, to prevent overfishing, and to rebuild this resource, while maintaining sustainable levels of fishing effort to ensure a minimal impact on fishing communities. The supporting materials and analyses used to develop the measures are contained in the document, and to some degree in previous environmental assessments as noted in this document.

The review process for this regulatory action involves the Northeast Fisheries Science Center, the Northeast Regional Office, and NMFS headquarters. The Center's technical review is conducted by senior level scientists with specialties in population dynamics, stock assessment methods, coastal migratory resources, population biology, and the social sciences. Review by Northeast Regional Office staff is conducted by those with expertise in fisheries management and policy, habitat protection, protected species, and compliance with applicable law. Final approval and clearance of the document is conducted by staff at NMFS headquarters and the Department of Commerce.

6.4 Magnuson-Stevens Fishery Conservation and Management Act

6.4.1 National Standards of the Magnuson Stevens Act

Compliance with National Standards - Atlantic Coastal Act requires that Federal regulations be consistent with the national standards of the Magnuson-Stevens Act.

National Standard 1 requires that conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the U.S. fishing industry. By itself, the proposed management actions would not end overfishing and restore stocks of American lobster, but are part of and would complement an ongoing long-term management strategy to achieve these purposes (NMFS 1999). The degree to which the selected management actions would limit fishing effort and associated lobster mortality is difficult to state with precision. Nevertheless, it is anticipated

that implementation of the LAPs, and subsequent ITT Programs, when combined with other lobster management measures, would increase the overall effectiveness of those measures in achieving ISFMP objectives and ultimately end overfishing and rebuild stocks of American lobster under National Standard 1. Additional lobster management measures in both state and Federal waters would be needed in the future in accordance with the resource management requirements addressed by the ISFMP to end resource overfishing.

National Standard 2 requires that management measures be based upon the best scientific information available. The information base for evaluation of the proposed measures in this action is based upon the best scientific information available and incorporates the scientific review and associated approval by state and Federal lobster scientists through the Commission's Lobster Technical Committee. For example, the 2009 Commission Stock Assessment Report, provides the basic underpinnings of the proposed action. In addition, current NMFS vessel, permit, dealer and observer data is incorporated in the assessment of impacts for this action. Further, the proposed measures address the management and policy guidance provided by the scientists on the Lobster Stock Assessment Review Panel regarding the measures recommended for facilitating the assessment and sustainability of the lobster resource.

National Standard 3 requires, as practicable, that an individual stock be managed as a unit throughout its range, and that interrelated stocks be managed as a unit or in close coordination. NMFS believes that the proposed action illustrates the consistency and coordination sought by this National Standard. The three stock areas for American lobster are being managed, throughout the range of the population from Maine to North Carolina, through an area management approach in coordination with state jurisdictional management and Federal management through the Commission's ISFMP and complementary Federal regulations. The measures associated with this action support the coastwide management program for the American lobster resource. One major purpose of this proposed LAP/ITT action would be to effectuate the management of lobster resources across stock areas by more accurately quantifying the number of impacted participants and their associated fishing effort in several LCMAs.

National Standard 4 requires that conservation and management measures not discriminate between residents of different states. As a preliminary matter, these proposed actions are not state specific. That is, all Federal permit holders within the impacted LCMA must adhere to the same regulations regardless of the state from which they hail. Further, the selected management actions for the EEZ were developed in consultation with the Commission and the lobster industry through its LCMT program, and take into account the social and economic distinction among the nearshore and offshore EEZ fisheries. NMFS gave great consideration to the expertise of the LCMTs, whose membership is appointed by the involved states, and who were presumed to have intimate knowledge of how their proposal would affect their state's fishery. Further, despite a dearth of information due to the lack of mandatory harvester reporting, NMFS examined the best available information to discern any unintended discriminatory effect and used its best efforts to create counter measures to guard against such unexpected eventualities.

Federal vessels fishing in LCMAs 2, 3, and OCLMA from several states may be impacted by the proposed LAP/ITT actions, however the intent of the proposed measures would be to integrate Federal permit holders historical access and trap allocations with efforts by the states to implement the ISFMP's LAP/ITT Program. These proposed measures are intended to be consistent within each impacted LCMA and, although not a mirror-image of state regulations, support the Commission's plan by seeking to apply a consistent management regime across all involved Federal vessels within each LCMA.

National Standard 5 requires that, where applicable, conservation and management measures promote efficiency in the utilization of fishery resources. The proposed actions are consistent with such a standard. Proposals to establish LAPs with transferable traps would provide economic benefits and promote efficiency by allowing participants to regulate their trap allocation or even exit the fishery based on their situation and the economics within the LCMA-specific fishery.

National Standard 6 requires that conservation and management measures take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches. The proposed LAP/ITT management actions takes into account the variations in fisheries, fishery resources, and catches, in consultation with the Commission and industry groups through coordination with LCMTs, and among the inshore and offshore EEZ fisheries. Industry involvement through the ISFMP process ensures flexibility in management of the fisheries, and fishery resource over seven management areas. Additionally, the proposed measures respond to the recommendations of the scientists of the American Lobster Stock Assessment Peer Review Panel and TC to facilitate the management and sustainability of the lobster resource through fishing effort controls.

National Standard 7 requires that, where practicable, conservation and management measures minimize costs and avoid unnecessary duplication. The proposed measures are intended to ensure state and Federal regulations are compatible, minimize confusion by industry participants, enhance compliance, and avoid duplication. The implementation of the LAP/ITT is prompted by the Commission's intent to respond to LCMT recommendations and ensure flexibility in the management of the fisheries. The Commission has mandated that the states implement the LAP/ITT Programs and has similarly requested that NMFS do the same.

The intent of this proposed action would be to ensure that all Federal vessels participating in the LCMA 2, 3, and OCLMA trap fishery met compatible criteria to those specified in the ISFMP and implemented by state regulatory agencies. Compatible measures and coordinated management of the LAP/ITT Programs would reduce administrative costs to agencies and industry participants, clarify and standardize application procedures, minimize industry confusion over ITT procedures, and more effectively quantify participation and trap fishing effort in the future.

National Standard 8 requires that, consistent with fishery conservation requirements, conservation and management measures take into account the importance of fishery resources to fishing communities. As a preliminary matter, the proposed LAP/ITT Programs are premised on proposals developed over time by industry participation in the LCMT process, and later vetted by the Commission TC and public comment process, which should, in the long term, more effectively maintain the integrity of reliant fishing communities. NMFS examination of available data showed no incongruence with that expectation. Sustained participation of communities and consideration of economic impacts is facilitated through the ISFMP's area management provisions, which allow fishing communities to participate in, and provide public comment on, proposed management measures. Specifically, the proposed management actions developed in consultation with the Commission and the lobster industry through the LCMTs, and take into account the social and economic distinction among the nearshore and offshore EEZ fisheries. NMFS gave great consideration to the expertise of the LCMTs, whose membership is appointed by the involved states, and who were presumed to have intimate knowledge of how their proposal would affect their state's and community's fishery.

National Standard 9 requires that, to the extent practicable, conservation and management measures minimize bycatch, and to the extent bycatch cannot be avoided, minimize the mortality of such bycatch. The proposed LAP/ITT management actions may result in an initial activation of latent trap fishing effort. This may result in a minimal increase in regulatory discards in this small component of the fishery. However, the proposed ITT measures, including the use of the conservation tax applicable with all ITT trap transfers, are intended to address latent effort, and are not expected to affect fishing mortality since the lobsters are generally discarded alive.

National Standard 10 requires that, to the extent practicable, conservation and management measures promote the safety of human life at sea. The selected management actions will have no anticipated impact on safety at sea, because it would not result in any significant changes in fishing practices.

6.4.2 Essential Fish Habitat (EFH)

Section 305(b) of the Magnuson-Stevens Act requires all Federal agencies to consult with NMFS' Habitat Conservation Division on any future action that may adversely affect EFH. NMFS conducted an initial EFH consultation on May 28, 1999, in preparation of its FEIS (64 FR 29025) that analyzed promulgating regulatory recommendations from the Commission under the Atlantic Coastal Act rather than from the New England Fishery Management Council under the Magnuson-Stevens Act. At that time, it was concluded that the regulations would not adversely impact EFH for any federally-managed species (see below table).

The LAP/ITT Programs identified in this action are also not expected to adversely impact EFH. The proposed measures would cap fishing effort in LCMA 2 and the OCLMA based upon historic participation, and implement a transferable trap program. The analysis indicates that a potential increase in latent effort that may result, would likely be mitigated by the transfer tax under the ITT Programs. Therefore, any potential changes in fishing effort due to these measures would likely be negligible.

Council/Management Authority	**FMPs**
New England Fishery Management Council (NEFMC)	Multispecies; Sea Scallop; Monkfish, Red Crab
Mid-Atlantic Fishery Management Council	Summer Flounder, Scup, and Black Sea Bass; Squid, Atlantic Mackerel, and Butterfish; Surf Clam and Ocean Quahog
South Atlantic Fishery Management Council	Coastal Migratory Pelagics; Red Drum; Golden Crab
NMFS	Atlantic Highly Migratory Species; Atlantic Billfishes

6.5 Executive Order 12630

The action will not result in a regulatory taking. The chief components of these proposed LAP/ITT Programs would limit future trap fishing effort based upon historic participation in the LCMA 2 and OCLMA fisheries and then allow for the transfer of traps in LCMAs 2, 3, and the OCLMA. As a preliminary matter, there is no physical taking of actual property. Additionally, there would be no taking of any intangible property -- for example, the "right" to fish -- because there is no general property right to harvest wildlife and because NMFS's Federal lobster permits lack the traditional hallmarks of property and are more akin to a revocable license. Further, reasonable expectations should have been tempered, since the fishery has long been highly regulated and these proposed actions were developed by industry participants with Commission public comment for all relevant ISFMP addenda, consistent with past regulations. Finally, the action is not expected to substantially alter the fishing practices of Federal permit holders that have actively fished in these LCMAs.

6.6 Executive Order 12866

Determination of Economic Significance for E.O. 12866

E.O. 12866 requires a review of proposed regulations to determine whether or not the expected effects would be significant, where a significant action is any regulatory action that may:

- 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, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- Create a 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.

The following provides an estimate of the expected magnitude of the economic impacts of the Proposed Action.

At $306 million in 2008, the landed value of American lobster was the second highest valued species landed in the Northeast region. Although the relative contribution of the EEZ component has varied over time, it has averaged between 15 percent and 20 percent of domestic landings. On average, lobsters landed in the EEZ tend to larger than lobsters landed in state waters. This means that in terms of value the EEZ share of value is likely higher than the landings share.

Nevertheless, the combined estimated impact of proposed Federal action is expected to be far less than $100 million on an annual basis and would not be considered a significant action for purposes of E.O. 12866.

6.7 Executive Order 13132

This rule does not contain policies with Federalism implications sufficient to warrant preparation of a Federalism assessment under E.O. 13132.

6.8 Executive Order 13211

Executive Order 13211, which became effective on May 18, 2001, addresses "actions concerning regulations that significantly affect Energy supply, distribution, or use". To the extent permitted by law, an agency is obligated to prepare a Statement of Energy Effects for those matters identified as a significant energy action. According to E.O. 13211, "significant energy action" means "any action by an agency that promulgates or is expected to lead to the promulgation of a final rule or regulation: (1) that is a significant regulatory action under Executive Order 12866 or any successor order, and; (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy. Based on these criteria, the proposed actions identified in this EIS do not require a Statement of Energy Effects, since these proposed actions are not likely to have a significant adverse effect on the supply, distribution, or use of energy.

6.9 Atlantic Coastal Act

Presently, American lobster regulations are issued under the Atlantic Coastal Fisheries Cooperative Management Act in Title 50 of the Code of Federal Regulations, Part 697. The lobster regulations under the Atlantic Coastal Act are in keeping with the regulatory standard set forth in the Atlantic Coastal Act: 1) that the regulations be consistent with the National Standards set forth in the Magnuson-Stevens Act and 2) that the regulations be compatible with the Commission's lobster ISFMP. The measures evaluated in this DEIS are in keeping with the Atlantic Coastal Act regulatory standard to develop compatible

regulations to the Commission's lobster ISFMP, and, as stated in section 6.4.1, be consistent with the National Standards set forth in the Magnuson-Stevens Act.

6.10 Marine Mammal Protection Act (MMPA)

The MMPA prohibits the "take" of marine mammals, with certain exceptions, in waters under U.S. jurisdiction and by U.S. citizens on the high seas. The MMPA requires consultation within NMFS if impacts on marine mammals are unavoidable. A formal Marine Mammal Protection Act consultation was initiated in October 2009, for the American lobster fishery as regulated under the Atlantic Coastal Act. That consultation is ongoing, and the proposed measures included in this DEIS will be considered as part of the operations of the fishery for that consultation. Adverse impacts resulting from proposed fishing activities are discussed in the DEIS.

6.11 Endangered Species Act (ESA)

Section 7 of the ESA states that any project authorized, funded, or conducted by any Federal agency should not "… jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined … to be critical." For this EIS, NMFS is required to "informally" consult with applicable programs within NMFS to determine whether any federally listed or proposed endangered or threatened species or their designated critical habitats occur within the areas affected by the proposed measures. If it is determined that these species or habitats might be affected by the proposed measures, "formal" consultation must take place and a Biological Assessment (BA) must be prepared to identify the nature and extent of effects and recommend measures that would avoid or reduce potential effects on the species. The BA would be used for determining whether the effects would be adverse and, if so, whether they might jeopardize the existence of any listed species. After consultation, NMFS would issue a Biological Opinion (BO) on the potential for jeopardy. If the opinion is that the project is not likely to jeopardize any listed species, the Agency may also issue an incidental take statement as an exception to the takings prohibitions in Section 9 of the ESA.

6.12 National Environmental Policy Act (NEPA)

This analysis was prepared in full compliance with the requirements of the National Environmental Policy Act (NEPA) and its implementing regulations. All established procedures to ensure that Federal agency decision makers take environmental factors into account, including the use of a public process, were followed. This DEIS contains all of the components required by NEPA, including a discussion of the purpose and need for the proposal (Chapter 1), the alternatives considered (Chapter 2), the affected environment (Chapter 3), the environmental impacts of the proposed action and the alternatives (Chapter 4), cumulative impacts (Chapter 5), and other relevant information.

This DEIS will be available for public comment for a 60 day comment period. Copies of this lobster DEIS will be available by writing the Sustainable Fisheries Division, National Marine Fisheries Service, 55 Great Republic Drive, Gloucester, MA 01930-2298 – mark the outside of the envelope Lobster DEIS, or; by email to RequestDEIS@noaa.gov or; by telephone to 978-675-2162. The DEIS is also available at the Northeast Regional Office's website at: http://www.nero.noaa.gov/nero.

Chapter 7 – List of Preparers

LIST OF PREPARERS OF THE DEIS CHAPTER 7

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Chapter 8 – Initial Regulatory Flexibility Analysis

INITIAL REGULATORY FLEXIBILITY ANALYSIS CHAPTER 8

The regulated entities affected by the proposed action would include small entities engaged in the commercial lobster trap fishery. The SBA size standard for commercial fishing (NAICS 1141) is $4 million in gross sales. The proposed action would potentially affect any fishing vessel using trap gear that holds a Federal lobster permit. During 2007 a total of 3,287 Federal lobster permits were issued. Of these permits 699 were issued only a non-trap gear permit, 2,168 were issued only a trap-gear permit, and 420 held both a trap and a non-trap gear permit. According to dealer records no single lobster vessel would exceed $4 million in gross sales. Some individuals own multiple operating units so it is possible that affiliated vessels would be classified as a large entity under the SBA size standard. However, the required ownership documentation submitted with the permit application is not adequate to reliably identify affiliated ownership. Therefore, all operating units in the commercial lobster fishery are considered small entities for purposes of analysis.

In the OCC and LCMA 2 the proposed action would implement a limited access program and replace maximum trap caps with individual trap allocations. This action would mean that any Federal permit holder that did not qualify for limited access would not be able to set traps in either LCMA now or in the future. Based on preliminary estimates, a total of 207 permitted lobster traps vessels would qualify for LCMA 2 and 26 would qualify for limited access in the OCC LCMA (see Tables 4.2 and 4.3). In concept this means that more than 2,000 permit holders would not be qualified. However, the majority of these non-qualifiers either do not currently participating in any lobster trap fishery or they set traps in other LCMAs.

Existing regulations allow individuals to select any LCMA on their annual permit renewal. For a variety of reasons, some vessel owners elect multiple LCMAs yet have no history or intent of actually setting traps in all of them. During 2007 a total of 431 permit holders elected LCMA 2 on their permit application and 170 elected the OCC LCMA. Election of an LCMA may be thought of representing an option to set traps in an LCMA whereas the purchase of trap tags may reflect an indication of the intent to actually fish there. During 2007 only 38 of the 170 vessels electing the OCC LCMA purchased OCC trap tags and in LCMA 2, 182 of 431 vessels purchased trap tags for LCMA 2. For purposes of further discussion vessels that have both elected to fish in either LCMA 2 or the OCC LCMA will be considered participating vessels.

As noted above there were 182 participating businesses engaged in the LCMA 2 trap fishery whereas the proposed action would qualify a total of 207 permitted vessels. Whether all of the participating vessels would be included in the 207 vessels that would qualify for limited access in LCMA 2 is uncertain. Nevertheless, the number of qualifying vessels under the proposed action would exceed the number of participating vessels. By contrast, the number of qualifying vessels in the OCC LCMA would be less than the number of participating vessels. Specifically, participating vessels from both RI (9) and NJ (3) would no longer be allowed to participate in the OCC lobster trap fishery. Note that the actual level of participation by these non-qualified vessels is uncertain since in the absence of mandatory reporting, whether or not any traps were actually fished in the area cannot be verified. This also means that the economic impacts on any non-qualified participating vessels cannot be reliably estimated.

The economic impacts of the proposed action limited entry program for OCC and LCMA 2 are uncertain. In the absence of action, and a shift in effort were to occur, the most likely economic impact would be a dilution in profitability for current and future participants. Increasing the number of participating vessels and traps fished in either area may result in higher landings overall, but unless landings linearly increase with traps fished, landings, and average gross stock per vessel would be likely to go down. In effect, limited access would insulate the majority of current participating vessels from the external diseconomies that typify open access fisheries.

As noted previously, in addition to limited entry the proposed action would replace maximum trap caps with individual trap allocations and would implement a tradable trap program. Conceptually initial allocations would preserve the relative competitive position among qualifying lobster trap fishing business, but transferability would provide regulated lobster trap vessels with the flexibility to adjust trap allocations as economic conditions and business planning warrant.

The proposed action trap transferability program differs from that of the Commission recommended alternative in that once initial qualifications for trap allocations have been made in each LCMA the ability to purchase traps to fish in the LCMA would not be limited to only individuals that qualified for limited entry. This program feature affords small lobster trap fishing businesses with the flexibility to not only scale their businesses up or down, but provides the added flexibility to acquire and set traps in any LCMA in which trap allocations have been established. This feature has several economic advantages. Without this feature, under the no-action alternative, the only way an individual with a limited access lobster permit could fish in a different LCMA would be by purchasing someone else's qualifying vessel and traps. The proposed action would, in effect, implement a single ITT program for all areas. This feature would reduce the administrative costs of running the ITT, but would also simplify the program for potential lobster trap fishery participants. However, while the purchase of less than a full complement of transferable traps would be allowable, the ability to fish traps would be impacted by enforcement of the Most Restrictive Rule. In cases where a trap allocation in a specific LCMA would be low, lobster fishing businesses electing to fish/utilize those traps in that LCMA would be bound or capped to that low allocation of traps for all LCMAs they intend to fish in for the entire fishing year.

Chapter 9 – References

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Chapter 10 – Appendices