DRAFT Environmental Impact Statement (DEIS)
and
Regulatory Impact Review

FEDERAL LOBSTER MANAGEMENT IN THE EXCLUSIVE ECONOMIC ZONE

National Marine Fisheries Service
Northeast Region

March 17, 1998

UNITED STATES DEPARTMENT OF COMMERCE
Office of the Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

MAR 20 1998

To All Interested Governmental Agencies and Public Groups:

Pursuant to the National Environmental Policy Act, an environmental review has been performed on the following action:

TITLE: Draft Environmental Impact Statement and Regulatory Impact Review (DEIS/RIR) for Regulations for the American Lobster Fishery in the Exclusive Economic Zone (EEZ)

LOCATION: The EEZ off the New England and Mid-Atlantic

SUMMARY: The DEIS/RIR has objectives to reduce fishing mortality in the EEZ to prevent overfishing of American lobster and to rebuild lobster stocks to a level that will produce optimum yield. Management measures contained in the DEIS/RIR are designed to be compatible to the Atlantic States Marine Fisheries Commission's (ASMFC) coastal fishery management plan for lobster, as mandated under the Atlantic Coastal Fisheries Cooperative Management Act. Measures considered for the trap/pot lobster fishery include: (1) maintain status quo or take no action, (2) implement ASMFC recommendations for lobster management in Federal waters, (3) nearshore/offshore trap limits with a buffer zone and continue all management measures currently in place, (4) two-tier nearshore and offshore trap limit with a buffer zone, (5) nearshore fixed trap limits/offshore historic participation, and (6) ban fishing for and possession of lobsters. Measures considered for the non-trap/pot lobster fishery include: (1) limited to 100 lobsters (or parts thereof) for each fishing trip of 24 hours or less duration (up to a maximum of 500 lobsters (or parts thereof) during any 5-day period) or 500 lobsters (or parts thereof) for a fishing trip of 5 days or longer, unless further restricted by another FMP/status quo; (2) limited to no more than a maximum of 500 lobsters per trip, regardless of trip length, unless further restricted by another FMP; and (3) ban fishing for and possession of lobsters.

RESPONSIBLE OFFICIAL
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A copy of the Draft Environmental Impact Statement and Regulatory Impact Review is enclosed for your information. Please send one copy of your comments to me in Room 5805, OPSP, U.S. Department of Commerce, Washington, D.C. 20230.

An earlier version of this document was published in the Federal Register on February 6, 1998, and withdrawn on February 20, 1998, to allow more time to improve the alternative section.

Sincerely,

Margaret McCallum

for Susan B. Fruchter
Director, Office of Policy and
Strategic Planning

Enclosure

I. INTRODUCTION

American lobsters are overfished throughout their range, from Canada to Cape Hatteras. Although both landings and population abundance are at an all-time high, there is significant risk of a sharp decline in abundance, and therefore landings. Such a decline would have serious implications for the American lobster fishery, which is the most valuable fishery in the northeastern United States.

In 1996, the stock assessment of lobsters prepared by regional scientists was reviewed by an international panel of independent experts who agreed with the regional conclusions about stock abundance, egg production, and risk of collapse. Abundance is high throughout the range, probably because of unusually favorable environmental conditions for egg and larval survival and growth. Although individual lobsters are numerous, both the fishery and the stock depend on females at the minimum legal carapace size of 3-1/4 inches. This is an extremely precarious situation since most lobsters at this size have not yet reproduced. Other crustacean fisheries have exhibited similar high abundance, and equally dramatic declines when egg and larval survival and growth return to more typical numbers.

The lobster resource occurs inshore and offshore, with most of the fishery (about 80%) taking place in state waters (within three miles of the coast). The fishery in offshore waters has developed in recent years and includes both expansion of the inshore fishery to nearshore federal waters (3 to 30 miles) and a deepwater offshore fishery that occurs farther from shore (40-200 miles.) There are presently about 3,100 federal lobster permits, about 900 of which are for trawl gear.

The inshore fishery in state waters is managed through an interstate plan developed by the Atlantic States Marine Fisheries Commission (ASMFC). That body can also recommend actions for federal waters adjacent to state waters under provisions of the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA). The federal lobster fishery is presently managed under the Magnuson-Stevens Fishery Conservation and Management Act (50 CFR Part 649), and the ACFCMA (50 CFR Part 697).

Both federal and ASMFC managers agree that lobsters would most effectively be managed through an interstate plan under ACFCMA. The ASMFC has recently passed Amendment 3 to the interstate lobster plan which makes recommendations for both state and federal waters. Federal managers, through this draft environmental impact statement (DEIS), seek public comment on ways to implement federal regulations in the EEZ and meet the national standards for ending overfishing and for rebuilding egg production in the resource.

Regardless of which authorities or management bodies are used, the plan for federal waters must meet these national standards and must be prepared by July of 1999 to meet requirements of the Magnuson-Stevens Act. As a first step in preparing such a plan, National Marine Fisheries Service (NMFS) will seek advice through a number of public meetings on ways to improve lobster

conservation, using this DEIS as a discussion document. The goal is to emerge with a plan that balances the longer term, management measures identified by ASMFC in its interstate plan with the shorter-term legislative and Congressional requirements for federal plans to end overfishing and rebuild stocks.

The DEIS considers the biological and economic effects of several alternative actions for waters under federal jurisdiction. Most alternatives in this DEIS involve an area-management approach which allows industry-tailored management measures to meet industry needs on an area by area basis. The ultimate goal under these alternatives is the development of unified "seamless" management measures for American lobster in waters under both state and federal jurisdictions. The reader should review Section III of this DEIS for a description of each alternative. Public comments are requested on all portions of this document and especially information and perspectives are requested on issues concerning:

- the level of effort (e.g., number of pots/traps) currently used by lobster fishermen and the magnitude of increases of past fishing effort in recent years;
- best combination of conservation measures to end overfishing and reduce the risk of a decline in the lobster resource;
- the establishment of a lobster trap tag program in Federal waters;
- mandatory reporting of the harvesting, landing and sale of American lobsters;
- continuation of the existing moratorium on new entrants in the Exclusive Economic Zone (EEZ) fishery; and
- a recommendation by ASMFC for the Federal Government to initiate discussions with the Canadian government concerning coordination of future gauge size changes (increases in American lobster minimum size).

Public meetings to further encourage comments will be announced under separate cover in the Federal Register. Additional information can be obtained by contacting the Northeast Region of the National Marine Fisheries Service (telephone: (978) 281-9234).

II. PURPOSE AND NEED FOR ACTION

1. Background

◦ Federal Lobster Management

In 1978, the lobster producing states of Maine through North Carolina and the National Marine Fisheries Service cooperated under the auspices of the NMFS State-Federal Fishery Management Program (precursor to the Interstate Fishery Management Program of the Atlantic States Marine Fisheries Commission) to develop a Fishery Management Plan (FMP) and provide a unified approach to management of the lobster fishery. Although there was no legislative authority for implementing American lobster management decisions under the Program, state and federal

fishery management agencies, through the Program's Northeast Management Board, agreed to work toward attainment of the following management goals:

- Develop structure of institutional arrangements for effective regionalized management of lobster stocks that occur within two or more political jurisdictions
- Coordinate the collection/analysis of statistical and scientific data
- Promote efficiency in harvesting and utilization
- Develop/maintain a healthy commercial fishery
- Maintain opportunities for participation in lobster recreational fishing

Similarly, the associated FMP management objectives were to:

- Adjust minimum size limit on basis of best scientific information
- Develop regional program to control fishing effort and regulate fishing mortality rates
- Implement uniform collection, analysis, and dissemination of biological/economic data
- Increase brood stock abundance to minimize risk of stock depletion and recruitment failure
- Minimize lobster injury and mortality associated with fishing
- Standardize gear-marking to extent practicable
- Maintain existing social and cultural features of the industry whenever possible

The FMP's recommended management measures were to:

- Require escape vents in fixed lobster gear
- Mark all pots/traps with owner identification number issued by licensing agency
- Develop appropriate restrictions and requirements on use of fixed lobster gear within federal waters of the EEZ
- Require minimum size of 3-3/16 inches carapace length, and study socio-economic impacts of increased minimum size
- Prohibit possession of egg-bearing ("berried") lobsters and female lobsters from which external eggs have been removed
- License dealers by state of landing
- License fishermen or vessels by state of harvest and/or landing
- Require annual federal or state-issued license for harvest in federal waters (EEZ)
- Establish maximum number of annual licenses/permits, at option of licensing agency
- Prohibit possession of shucked lobster aboard vessels

In November 1978, the Northeast Fisheries Management Board referred the FMP to the New England Fishery Management Council (NEFMC) for implementation of recommended management measures in federal waters under the provisions of the Magnuson-Stevens Fishery

Conservation and Management Act (recently renamed the Magnuson-Stevens Act [MSA]). Concurrently, the members of the Board expressed commitment toward achieving the FMP objectives and associated management measures in waters under jurisdiction of the respective states.

The NEFMC's FMP was implemented in federal waters and for vessels with federal fishing permits in 1983. Primary initial management measures included the establishment of a minimum carapace length of 3 3/16 inches; prohibition on possession of egg-bearing lobsters; and requirement of trap escape vents in fixed lobster gear. Subsequent to approval, six amendments to the FMP have been developed during the last 14 years:

Amendment 1 was approved in 1986, and established uniform offshore lobster fishing gear marking restrictions to reduce gear conflicts; regulatory relief from escape vent requirements for Mid-Atlantic black sea bass fishermen; and regulatory exemption for the red crab fishery from lobster gear regulatory requirements.

Amendment 2 was implemented in 1987 and increased minimum size requirements by 1/32 inch increments in four steps over a 5-year period, intended to reach 3-5/16 inches by January 1992.

Amendment 3 in 1990 required all lobster traps to contain biodegradable escape panels.

Amendment 4 in 1991 reduced minimum size to 3-1/4 inches, delayed further increases, and modified minimum dimensions of escape vent requirements.

Amendment 5 in 1994 imposed a 5-year moratorium on new entrants in the EEZ lobster fishery via a limited access permit system. This amendment also charged Effort Management Teams (EMT), in collaboration with industry representatives, to develop detailed plans by July 1995 to control effort and rebuild overfished lobster stocks. In addition, it maintained lobster minimum size at 3-1/4 inches; established permit requirements for vessel operators and dealers; and revised the overfishing definition.

The deadline for the Council's adoption of plans submitted by the EMTs was not met. The Council did not reach final agreement on specific measures, such as effort reduction and limited entry, to prevent overfishing due largely to the hesitancy of state jurisdictional authorities to commit to the fishing mortality reduction goals of Amendment 5 and to assist in the administration, cost, or enforcement of the proposed area measures.

Amendment 6, approved in 1997, provides a framework for abbreviated rulemaking procedures to address gear conflicts.

A complete summary of current lobster regulations under the NEFMC's FMP can be found in 50 CFR Part 649, and at the NMFS Northeast Region Internet site: http://www.nero.nmfs.gov/doc/nero.html.

In September 1995, NMFS issued an Advance Notice of Proposed Rulemaking seeking public comments on options for lobster management. The two options were: 1) withdrawing the NEFMC FMP, transferring Federal authority to the ACFCMA, and 2) preparing a Secretarial amendment to the Council FMP. In February 1996, NMFS Northeast Regional Administrator advised the New England Council of NMFS' intent to withdraw Secretarial approval of the Council FMP and transfer necessary federal regulations to the ACFCMA, on the basis of Federal Regulatory Reform. Subsequently, in March 1996, NMFS issued a Proposed Rule announcing initial determination to withdraw the Lobster FMP under the Magnuson Act, predicated partially on changed circumstances calling into question whether the FMP is consistent with the National Standard 1 (which requires implementation of conservation and management measures to prevent overfishing) and National Standard 7 (which requires that conservation and management measures shall minimize costs and avoid unnecessary duplication). The Proposed Rule emphasized that final FMP withdrawal and implementing regulations would occur only on completion of an effective state management program. In July 1996, the ASMFC prepared a Public Information Document which acknowledged the propriety for lead lobster management shifting to ASMFC due to the predominance of lobster landings in state waters and the management flexibility offered by the ACFCMA. .

On October 11, 1996, the Sustainable Fisheries Act (SFA) amended the ACFCMA by adding Section 810 which provides that if no regulations have been issued under Section 804(b) (see Section III.1) of ACFCMA by December 31, 1997, to implement a coastal Fishery Management Plan (CFMP) for American lobster, the Secretary shall issue interim regulations before March 1, 1998, that will prohibit any vessel that takes lobsters in the EEZ by a method other than pots or traps from landing lobsters (or any parts thereof) at any location within the United States in excess of:

(1) 100 lobsters (or parts thereof) for each fishing trip of a 24-hour or less duration (up to a maximum of 500 lobsters, or parts thereof, during any 5-day period); or
(2) 500 lobsters (or parts thereof) for a fishing trip of 5 days or longer.

NMFS developed an Environmental Assessment and issued an Interim Final Rule which became effective March 1, 1998 (63 FR 10154, dated March 2, 1998), to implement this landing prohibition as specified in the SFA.

In addition, the SFA amended Section 307 of the MSA to make it unlawful for any person to ship, transport, sell or purchase, in interstate or foreign commerce, any whole live lobster that is smaller than the minimum possession size in effect under either the MSA or the ACFCMA. The legislation also amended the ACFCMA and provided authorization to allow vessels that possess lobster permits issued by the State of Maine to fish in areas of the EEZ known as Maine pocket waters. The SFA also required NMFS to identify annually all overfished fisheries within the jurisdictions of fishery management councils, that fishery management councils submit FMPs or amendments to FMPs to end overfishing, and to rebuild overfished stocks by September 30, 1998.

The SFA further required that if a council does not submit a required FMP or amendment to end overfishing by the deadline, the Secretary shall prepare the FMP or amendment to stop the overfishing and to rebuild the overfished stocks nine months after September 30, 1998. On September 30, 1997, NMFS issued its list of overfished fisheries, which includes the American lobster fishery.

On October 22, 1997, NMFS issued a Notice of Intent (62 FR 54834) to prepare an Environmental Impact Statement (EIS) to assess the impact of federal management measures for lobster under the ACFCMA. The Notice provided a 30 day comment period which ran from October 22 - November 20, 1997. The following seven comments were received during the public comment period on the Notice of Intent to prepare this draft EIS:

> Two fishing associations, the Environmental Defense Fund, the Cape Cod Group of the Sierra Club, the City of Gloucester Fisheries Commission, Safer Water in Massachusetts (SWIM), and one individual submitted comments. Two comments addressed the inadequacy of current lobster management and the specific need to take timely action in the control and/or reduction of lobster fishing effort. Four comments concerned the nature and/or inequity of existing or proposed management measures concerning the nontrap fishery. One comment favored a proposed trap limit based upon historical participation in the fishery, one comment favored a uniform trap limit for all fishermen, and a third comment preferred consideration of whatever approach would maintain the economic viability of the respective gear sectors. Four comments favored an increase in the legal minimum carapace length for lobster and two favored a maximum size regulation. Other favored and/or proposed management measures include “days off” from the fishery; prohibition on landing of lobster during the molting season; prohibition on landing of female lobsters for one month during the peak egg-out period; reexamination and/or continuation of the EEZ lobster fishery moratorium on new entrants; an increase in lobster gear minimum vent size; and use of no-take reserve (buffer) areas. One comment provided a suggested allocation of maximum allowable trap limits on the basis of historical landings, vessel length, and/or income derived from lobster fishing. Another comment expressed concern regarding the costs and number of personnel which would be required to monitor a federal trap tag program. Three comments stressed the need to involve fishermen in lobster management decisions and/or the need to identify a greater variety of management techniques to conserve the resource and retain the economic viability of the industry. The above comments were considered and addressed in the development of management alternatives presented in Section III of this EIS.
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> A final comment category concerned needed research. The recommended research topics included investigations on lobster migration and population biology; the influence of inshore pollution and habitat degradation as a density-dependent source of lobster mortality; and the effects of sewage outfall on lobster larvae and habitat.

A Draft Environmental Impact Statement and Regulatory Impact Review (DEIS/RIR) was published on February 6, 1998 (63 FR 6179), and withdrawn on February 20, 1998 (63 FR 8634), in order to give NMFS more time to further address the concerns of the ASMFC and northeastern states over the compatibility of NMFS' proposed regulations with ASMFC's Amendment 3 to the Interstate Fishery Management Plan for Lobster. This DEIS/RIR incorporates NMFS' response to those concerns.

A previous EIS describing initial lobster management alternatives and associated environmental impacts was developed in March 1983, and a supplemental EIS was prepared in March 1994. Similar and related Environmental Assessments for FMP amendments were prepared in January 1986, June 1987, July 1989, August 1991, and July 1996.

As mandated by the Endangered Species Act of 1973 (ESA), NMFS must assess the impact of all federal lobster management actions on endangered and threatened species of whales, sea turtles, and fish as well as any critical habitats designated for those species. The Marine Mammal Protection Act of 1972 (MMPA) requires NMFS to assess the level of impact of all U.S. fisheries on each marine mammal stock. Recently, NMFS has taken regulatory action under the authority of both the ESA and the MMPA for the purpose of marine mammal conservation. On April 4, 1997, NMFS issued MMPA emergency regulations restricting the lobster pot fishery to reduce entanglement risk to the endangered northern right whale. As required by the 1994 amendments to the MMPA, NMFS published a take reduction plan to reduce the impact of entanglements of four large whale species in four East Coast fisheries, including the lobster pot fishery. The interim final rule implementing the Atlantic Large Whale Take Reduction Plan (ALWTRP) was issued on July 22, 1997, with regulations affecting the lobster pot fishery effective November 15, 1997. An overview of protected species management actions, in particular the ALWTRP, impacting the lobster fishery is presented in Section IV.3 of this EIS.

- **State Lobster Management**

The initial CFMP developed by the NMFS State-Federal Fishery Management Program in 1978 was adopted by the ASMFC for state waters and remains in effect. In 1990, Amendment 1 to the CFMP called for member states (Maine through North Carolina) to adjust lobster regulations in state waters to meet the minimum size requirements in place at that time for federal waters. Amendment 2 to the coastal FMP in 1995, again in accordance with the NEFMC's plan for federal waters, halted scheduled increases in minimum size, i.e., retaining the minimum size for lobsters in state waters at 3-1/4 inches carapace length, and prohibited chemical "scrubbing" to remove eggs from berried lobsters.

In December 1993, the ACFCMA was enacted to support and encourage the development, implementation, and enforcement of effective interstate conservation and management of Atlantic coastal fishery resources. The provisions of this legislation require the ASMFC to specify, in each CFMP, the requirements necessary for States to be in compliance with the plan. In the event that one or more States have not effectively implemented the required management measures, the

ACFCMA further requires the ASMFC to notify the Secretary of Commerce, who then must review the determination of noncompliance and take steps as necessary to conserve the resource, by implementing a moratorium on fishing for the species in question within the waters of the noncomplying state(s).

In 1994, the ASMFC, under the provisions of the ACFCMA, identified the following measures for mandatory State compliance under the Lobster CFMP:

- 3-1/4 inch minimum size
- Prohibition on possession of berried or scrubbed lobsters/lobster meats/lobster parts
- Mandatory escape vents and escape panels with biodegradable fasteners
- Prohibition on spearing lobsters

The following CFMP measures did not require mandatory compliance:

- Effort-control requirements
- Enforcement coordination
- V-notching of tail flipper of berried females
- Licensing of fishermen
- Fixed gear requirements

In September 1995, the ASMFC voted to proceed with Amendment 3 of the CFMP to further address coordination between state and federal lobster management regulations, including ways of controlling fishing effort to avoid overfishing of the lobster resource throughout its range. This Amendment (ASMFC 1997) was approved by ASMFC in December 1997. Specifically, the CFMP's management measures include, but are not limited to:

- Continuation of the 3-1/4 inch carapace length minimum size requirement;
- A maximum size limit (5 inch carapace length) in the inshore Gulf of Maine;
- Protection of V-notched lobsters;
- Required permitting of commercial fishermen who land or possess lobster;
- Gear (e.g., trap size) regulatory requirements;
- Prohibition on possession of lobster meats, detached tails, claws or other parts of lobster;
- Prohibition on spearing lobsters;
- Establishment of Lobster Conservation Management Teams (CMT) to recommend conservation-equivalent management measures for each of seven management areas;
- Limits on lobster harvest by gear or methods other than traps; and
- For three of the seven lobster management areas, a three-year fishing effort reduction (contingent upon potential modification by approval of alternative CMT conservation equivalent proposals), i.e., 1200 traps per vessel in 1998 to 800 traps per vessel in 2000, for three of the seven lobster management areas.

(See Section II.1 - State Management Measures and Section III.2.B for additional discussion of the ASMFC Amendment 3.)

2. Objectives

The objective of lobster management is to prevent overfishing of American lobster throughout the species' range and to rebuild lobster stocks to a level that will produce optimum yield. To accomplish this, NMFS must ensure that existing lobster conservation measures in federal waters are maintained and take further action in concert with actions by the States in coastal waters under their jurisdiction. As documented in Amendment 5 of the NEFMC's FMP (May 1994), the American lobster resource is considered recruitment overfished when, throughout its range, the fishing mortality rate (F), given the regulations in place at that time under the suite of regulatory management measures, results in a reduction in estimated egg production per recruit to 10% or less of a non-fished population.

NMFS recognizes that Federal regulatory measures alone will not restore the lobster resource, since approximately 80% of lobsters are taken from State waters. Successful rebuilding of the lobster stocks throughout their range requires concurrent resource protection and similar reduction of fishing mortality in waters under state jurisdiction. The ACFCMA recognizes that because no single government entity has exclusive management authority for Atlantic coastal fishery resources, harvesting of such resources is frequently subject to disparate, inconsistent, and intermittent State and Federal regulation that has been detrimental to the conservation and sustainable use of such resources and to interests of fishermen. The primary responsibility for managing the American lobster rests with the States (because most of the resource occurs within state jurisdictional waters), and it is the responsibility of the Federal government to support and facilitate effective stewardship of interjurisdictional fisheries throughout their range. Collaborative state-federal management under the ACFCMA, on the basis of the best available scientific information, will be the best effective means for preventing overfishing and rebuilding the lobster resource throughout its range, and minimizing the risk of a stock collapse.

In this document, NMFS identifies various management alternatives, including the reduction of fishing mortality by capping current fishing effort and thereafter decreasing the number of lobster traps fished by federal permit holders incrementally on an annual basis for a four-year period. Additional measures include the implementation of a lobster trap tag management program and continuation of a moratorium on new entrants in the EEZ lobster fishery. Another measure is to limit the harvest of lobsters by methods other than pots or traps to not more than the historical percentage of total catch, with the intent of precluding the proliferation of lobster fishing effort in all segments of the fishery. During the stock rebuilding period, other regulatory measures, including alternatives for collaborative area management with the states under the provisions of the CFMP, and establishment of target total allowable catch levels, may be considered on a case-by-case basis if the replacement management measures can be documented with reasonable expectation to afford equal protection to the lobster resource. Mandatory reporting of lobster harvest at the vessel and dealer level is an essential component for monitoring the eventual

success of fishery management measures. Accordingly, NMFS urges that mandatory lobster reporting for all permit holders be considered a priority element in the establishment of a coastwide state/federal statistical reporting system. The Atlantic Coastal Cooperative Statistics Program (ACCSP), a cooperative state-federal marine and coastal fisheries data collection and information management program, is currently being developed. Comprehensive and accurate reporting of American lobster landings can only be established under such a program.

3. Need for Action

In 1996, the fishery for American lobster contributed 26% of the Northeast coastal states' revenue from commercial fishing, valued at $242 million and employed an estimated 50,000 individuals. Three stock areas for the American lobster have been defined: (1) Gulf of Maine; (2) Southern Cape Cod to Long Island Sound; and (3) Georges Bank and south to Cape Hatteras. The assessment for American lobster was reviewed during June 1993 at the NMFS Northeast Region's Stock Assessment Workshop No. 16 (SAW 16) and emphasized a need to reduce fishing mortality by 20% in the Gulf of Maine and by as much as 50% in Southern New England in order to end overfishing. Another stock assessment was conducted by state and federal scientists during June 1996 (SAW 22) and concluded that the resource is overfished throughout its range, with a high risk of a sharp decline in abundance in all three stock assessment areas.

Overfishing is defined by the F10% Eggs Per Recruit reference point cited in Section II.1 of this draft EIS. In July 1996, a report prepared by an independent panel of stock assessment experts ("The Bannister Report") confirmed the overfished status of American lobster stocks and advocated (thereby confirming SAW 16 findings) a reduction of fishing effort to minimize the potential for stock collapse.

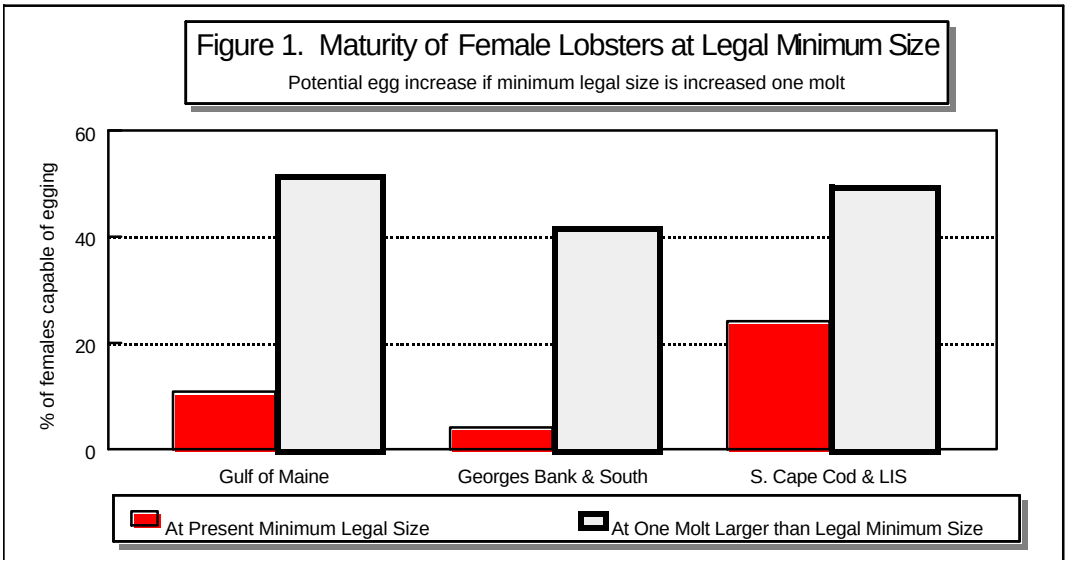
Indicators that both the resource and the fishery are at high risk include:

- Egg production, the measure of overfishing in lobster populations, is only 1 to 3 percent of what it would be in an unfished stock, and only a fraction of the egg production (10 percent) that signals overfishing.
- Landings continue to depend primarily on small lobsters just above the legal minimum size (3-1/4 inches carapace length): ranging in recent years from 85% of landings from Georges Bank to more than 90% of female lobsters harvested from inshore waters of the Gulf of Maine. This is an extremely precarious situation since most lobsters at this size have not yet reproduced (Figure 1). In the Southern New England region (Southern Cape Cod to Long Island Sound), female lobsters mature earlier than in the other two areas, but recent landings have been even more dependent (as high as 98% of all females) on newly recruited animals.
- Close to half, and in some areas as much as 70% of the fishable lobster population is being harvested each year (Figure 2). This high exploitation along with the dependence on newly recruited lobsters could exacerbate the negative effects of a poor reproductive year, and could result in a sharp downturn in landings in the

future. This too, is jeopardizing the long-term ability of the lobster population to sustain itself (producing replacements for lobsters harvested), with the danger of a possible stock collapse.

- Lobster fishing effort continues to escalate throughout the lobster's range. For example, in Maine, the mean number of traps fished per boat has more than doubled, from around 200 traps in 1967 up to an average of 562 traps per boat in 1996.

Lobsters have been relatively abundant and landings have reached record highs in recent years (Figure 3). However, increased landings are probably attributed to intensified fishing effort, as well as favorable environmental conditions which have enhanced egg production and larval survivability. Historical examination of other fisheries strongly suggests that, with continuation of the risk signs noted above, the favorable environmental conditions will not continue indefinitely, and that one or two "bad years" could jeopardize the future sustainability of the resource and associated economic viability of the lobster fishery. For example, in the Alaska king crab fishery, resource abundance and landings reached record levels in 1978 - 1980. During the next two years, both harvest and crab abundance decreased dramatically to near-zero levels, and the associated industry and crab population abundance levels have not recovered since. A description of this fishery can be found in the publication "Our Living Oceans", NOAA Technical Memorandum NMFS - F/SPO - 19, available from NMFS' Office of Science and Technology, Silver Spring, Maryland.



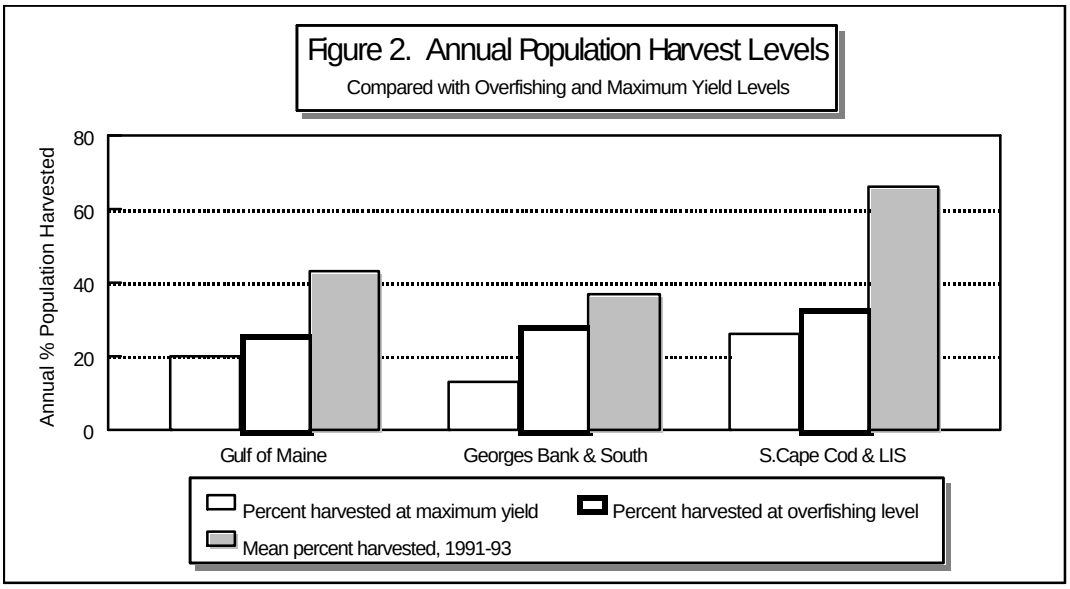


Figure 2. Annual Population Harvest Levels
Compared with Overfishing and Maximum Yield Levels
Annual % Population Harvested
80
60
40
20
0
Gulf of Maine
Georges Bank & South
S.Cape Cod & LIS
Percent harvested at maximum yield
Percent harvested at overfishing level
Mean percent harvested, 1991-93

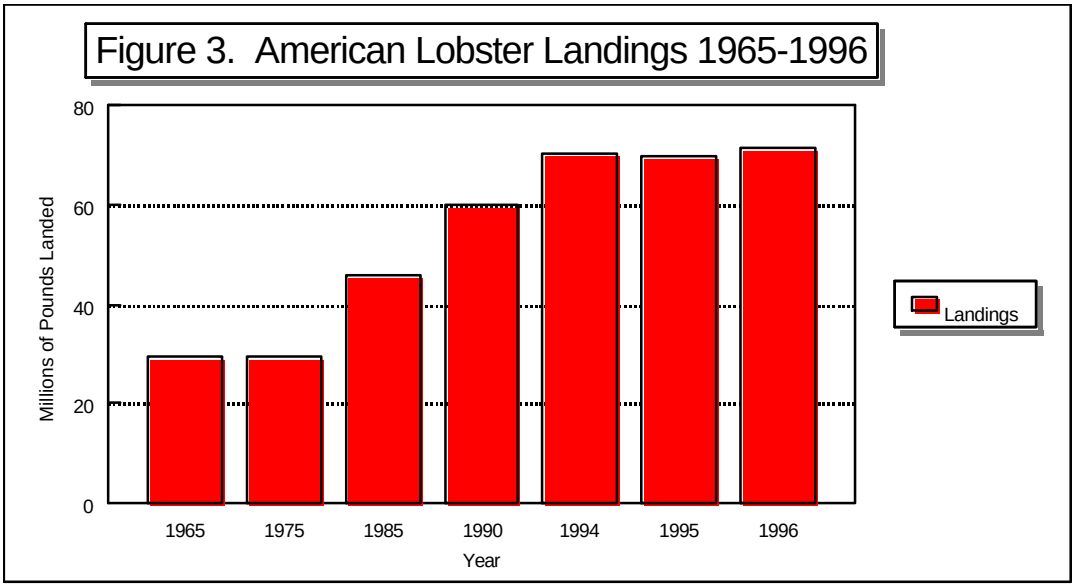


Figure 3. American Lobster Landings 1965-1996
Millions of Pounds Landed
80
60
40
20
0
1965
1975
1985
1990
1994
1995
1996
Year
Landings

III. ALTERNATIVES AND THEIR ENVIRONMENTAL CONSEQUENCES

1. Introduction - Coordination of State and Federal Measures

Lobster management to end overfishing and rebuild the stocks cannot occur without compatible and complementary regulatory actions by both state and federal jurisdictional authorities. Since the majority of the fishery takes place in state (coastal) waters, Federal action under Section 804 of the ACFCMA seems best suited for ensuring a joint, federal-state approach for a comprehensive management plan for this species throughout its range. This approach would confer primary lobster management authority to the states through ASMFC, while still meeting federal conservation and management standards. It is envisioned to expedite unified partnership management in state jurisdictional waters and the EEZ in a time frame to minimize the potential for a stock collapse of the resource.

The ACFCMA, under Section 804(b) of the Act, authorizes the federal government, in the absence of FMP regulations under the MSA, to implement regulations to govern fishing in the EEZ that are --

1. Compatible with the effective implementation of an ASMFC CFMP; and

2. Consistent with the national standards set forth in Section 301 of the MSA.

These regulations must also meet the new requirements on overfishing under the provisions of the SFA. In September, 1997 NMFS issued the Report on the Status of the Fisheries of the U.S., and American lobster was one of 76 stocks identified as overfished. The appropriate management authority on the basis of this determination (at this time, the New England Fishery Management Council) is required by the SFA to develop measures by September 30, 1998, to end overfishing and rebuild the American lobster stocks. If the management authority is unable to develop overfishing regulations within this timeframe, then by June 30, 1999, the Secretary is required to prepare the required resource management measures. Because the majority of the lobster fishery takes place in state waters (80%), this DEIS proposes to transfer federal regulatory authority for American lobster from the MSA to the ACFCMA. The expectation is that federal management action under Section 804 of the ACFCMA is the most risk-averse determination, and is most likely to encourage and expedite partnership management in state and federal jurisdictional waters in a time frame which minimizes the potential for a stock collapse of the resource throughout its range. Given the complexity of the legislative authority concerning federal lobster management, the federal policy and legal evaluation of issues associated with this determination will continue, concurrent with the DEIS public comment period.

Amendment 3 to the CFMP (Section II.1) recommends that the Secretary promulgate all necessary regulations to implement measures contained in Sections 2 and 3 of that Amendment.

These include, but are not limited to, the measures cited in Section II.1- State Lobster Management and a limit not to exceed 2,000 traps (subject to potential modifications by the relevant CMT) for any fishermen fishing in the "offshore" EEZ waters defined as the CFMP's Area 3. NMFS is guided particularly by those measures for which the ASMFC Plan has established a schedule (Section 5.3 of the CFMP) which serves as the basis for determining compliance of state management programs with Amendment 3. These are:

- At time of passage of Amendment 3: Prohibition of berried or scrubbed lobsters; prohibition of possession of lobster parts; prohibition on spearing lobsters; requirement for biodegradable ghost panels for traps; and minimum gauge size. Currently, with the exception on the prohibition on spearing lobsters, all measures are in place in the EEZ.

- By January 1, 1999: Prohibition on possession of V-notched female lobsters; limits on landings by fishermen using gear or methods other than traps; permits and licensing; maximum trap size; Gulf of Maine (Area 1) and Outer Cape Cod trap limits; and Gulf of Maine maximum carapace size limit. Currently, such measures already exist in the EEZ with the exception of trap limits and maximum lobster carapace and trap size limits.

- By March 1, 1999: Requirement for escape vents on traps. Vent size requirements already exist in the EEZ, but the CFMP recommends the modification explained in Section III.2.B.

NMFS conducted a detailed review of Amendment 3 (See Section II.1 under State Lobster Management). It addresses many important conservation issues in the management of American lobster. It is a positive and constructive beginning to the process of developing cooperative state-federal management under the ACFCMA. Amendment 3 does not, however, fully articulate the necessary measures to end overfishing and rebuild the stock, but can serve as the foundation for further state/federal cooperation to achieve these management goals. Until such time the management measures are further specified and strengthened, NMFS concludes that the current ASMFC Plan may not provide adequate protection for conservation of the American lobster resource. NMFS provided recommendations to ASMFC in September 1997 for revising the CFMP to further enhance the potential for effective state-federal regulatory collaboration under the ACFCMA, in accordance with CFMP objectives to end overfishing and rebuild American lobster stocks. These recommendations addressed:

- Trap limits - the need to establish a lower trap limit than the number proposed to credibly cap and subsequently reduce fishing effort. Rather, the measures in the CFMP allow for potential increases in fishing effort and economic inefficiencies of the industry. The establishment of initial caps for each management area, with gradual reductions in fishing effort (or conservation equivalent measures), is needed to ensure a baseline from which to enhance attainment of CFMP objectives during the stock rebuilding period.
- Area Management - the need to critically evaluate present/future scientific capabilities for accessing the results of regulatory actions among the CFMP's proposed management

areas and the degree to which the areas correspond to the three stock assessment components accepted by the scientific community.

- Stock Rebuilding Schedule - the need to specify baseline management measures during the entire stock rebuilding period and their respective contribution relative to achievement of the CFMP's stock rebuilding objectives.
- Technical Oversight - the need to incorporate technical and scientific advisory protocols for assisting the CMTs on conservation-equivalency issues and orchestrating annual stock assessment reviews for monitoring the success of CFMP management strategies.

The amendment approved by the ASMFC in December 1997 failed to satisfactorily address these recommendations. Although the CFMP includes a lobster resource rebuilding schedule, the Plan does not indicate how or what measures will be implemented beyond Year 3 of the stock rebuilding period to attain the Plan's objectives. In response to this dilemma at the time of Plan approval, the Commission recommended that the ASMFC Lobster Board immediately begin developing additional management measures to address overfishing with implementation beginning in 1998.

Efforts to bridge state actions for lobster management within the framework of the CFMP and federal requirements to end overfishing and rebuild lobster stocks were recently discussed during a meeting among NMFS, ASMFC, and state and industry participants from Maine, Massachusetts, and New Hampshire in January 1998. The purpose of the meeting was to discuss the potential for seamless, joint state-federal management of the resource in the nearshore area from the Maine/Canada border to Cape Cod, Massachusetts (Area 1 of the CFMP). The discussion focused on: state and federal intent for committing to the goal of ending lobster overfishing through an effort reduction program; maintaining industry involvement in the identification of area-specific management measures; the potential for conservation-equivalent measures once a trap reduction schedule is established; status of state limited entry programs; and the administrative and enforcement issues associated with cooperative state-federal area management.

The meeting represented preliminary and positive steps in the identification of events and state/federal cooperation which must further occur for the successful interjurisdictional management of American lobster under the ACFCMA. The meeting also served to help explain the states' legislative and administrative complexities in the full implementation of the CFMP in state jurisdictions and the basis for "interim" management measures (Section III.2 and Section III.3 of this DEIS) in the EEZ prior to the ultimate attainment of unified state and federal management regimes under the CFMP. Continuation and expansion of these deliberations to other lobster management areas, through ASMFC, are essential for ensuring state and federal integration of interjurisdictional lobster management actions under the framework of the CFMP and the ACFCMA. The deliberations should focus on the following:

- **Area Management.** Six of the seven lobster management areas identified in the CFMP include federal (EEZ) waters. NMFS intends, in partnership with the states, to initiate

public rulemaking for appropriate management areas when area-specific measures are specified within the framework of the CFMP to end overfishing and in accordance with the MSA's National Standards. Until such time, potential management areas in the EEZ are delineated for public comment in Section III.2 of this DEIS.

- **Effort Control.** The CFMP commits to an eight-year schedule for defining management measures to end overfishing of the lobster resource. However, it includes specifics for only a 3-year trap reduction strategy, although a longer-term reduction (ten-percent annually) was initially considered during development of Amendment 3. The establishment of a credible and longer-term effort reduction strategy (with options for substitute measures having equal conservation value) is needed to end overfishing and comply with the mandatory stock rebuilding requirements of the SFA. Options for trap reduction measures are presented in Section III.2 of this DEIS.

- **Conservation Equivalency.** The option of conservation-equivalent measures in out years of the stock rebuilding period, e.g., to potentially replace annual trap reductions after an initial cap has been implemented, may be preferred by industry representatives. This issue is germane to lobster management measures in both state and federal waters, and especially critical to the success of area management under the CFMP. Procedures are needed for determining how conservation-equivalent proposals can be evaluated and subsequently considered as substitute measures for achieving stock rebuilding objectives. The ASMFC has recently taken steps to ensure that technical and scientific advice will be available in this regard to the CFMP's conservation management teams. This issue is further presented for public comment in Section III.5 of this DEIS.

The alternatives discussed below include strategies that could be implemented in the EEZ for protection of the American lobster resource. Although neither ASMFC nor the states submitted comments during the Notice of Intent (described in Sections I.1 and II.3) public comment period, the ASMFC provided subsequent recommendations on February 20, 1998, concerning American lobster management options in the EEZ. This section of the DEIS has been written to incorporate the Commission's suggestions to the extent practicable. These alternatives range from: continuation of existing management measures (status quo), which are insufficient in addressing overfishing of the stock; to a maximum protection of American lobster in federal waters by a complete removal of all trap gear from the water and a prohibition against fishing for, retention, sale, barter or trade of American lobster taken from the EEZ.

The alternatives considered here are limited by the ACFCMA to conservation measures primarily affecting the EEZ lobster fishery. For clarity purposes, trap/pot fishery alternatives (Section III.2) are discussed separately from non-trap/pot fishery management options (Section III.3). The reader is encouraged to refer to both sections for a complete summary of the alternatives under consideration. Similarly, the reader should refer to the Affected Environment Section (Section IV) for additional details concerning the biological and physical environment and human activities (e.g., social/cultural and economic factors) which are relevant to the anticipated impacts of

various management options.

This draft EIS affords an opportunity for public comments concerning alternative management approaches for both trap and non-trap lobster fisheries in the EEZ. All alternatives propose a transfer of federal management authority from the MSA to Section 804 of the ACFCMA, subject to the evaluation of legal issues related to this transfer. Also, all alternatives, with the exception of the "EEZ closures" discussed in Section III.2.F and Section III.3.C, would continue all current management measures contained in the NEFMC's American Lobster FMP for federal waters. Current management measures and prohibitions for the EEZ include: prohibition on possession of berried or scrubbed lobsters; prohibition on possession of lobster meats, detached tails, claws or other parts of lobster; prohibition on possession of V-notched female lobsters; requirement for biodegradable "ghost" panel for traps; minimum gauge size of 3¼ inches (8.26 cm); escape vents on traps; prohibition on possession at any time of more than 6 lobsters per person when aboard a headboat, charter, or dive vessel; gear required to be marked in order to identify the licensed individual; a moratorium on new entrants in the EEZ fishery through December 31, 1999; permit requirements for vessels, dealers and vessel operators; a prohibition on interstate or foreign commerce of lobster smaller than the Federal minimum size; and framework provisions to meet goals and objectives of the FMP. For a complete description of each measure, see 50 CFR Part 649. The alternative actions for the EEZ include:

2. Trap/Pot Lobster Fishery

A. Alternative 1: Continue Existing Management Measures Only/Status Quo

This alternative would continue current federal lobster management regulations contained in the NEFMC's FMP for federal waters (50 CFR Part 649) under MSA, and those regulations under ACFCMA (50 CFR Part 697). Also see Section II.1- Federal Lobster Management. No other management measures would be implemented for the lobster trap/pot fishery.

(1) Effects on American Lobster

This alternative would allow continued high levels of lobster fishing effort and would probably increase resource overfishing. The most current stock assessment (June 1996, SAW 22) documented continued high levels of fishing mortality, with an increased preponderance of landings from small lobsters just above the minimum legal size. This is an extremely risky situation since most lobsters at this size have not yet reproduced. Well over half, and in some areas as much as 80% of the fishable lobster population is being removed each year. A poor reproductive year can result in a sharp downturn in landings. Current effort levels, if left unchecked under this alternative, will jeopardize the ability of the lobster population to sustain itself with the danger of a possible stock collapse.

(2) Effects on Environment

This alternative would not change the current effects on the environment.

(3) Effects on Marine Mammals and Sea Turtles

The impacts of the current regulations were assessed in the EA and ESA Section 7 Biological Opinion issued regarding Amendment 5 to the lobster FMP. The only current measure likely to affect the amount of gear fished is the moratorium on new entrants into the fishery. However, there may be a delay in conservation benefits since there may be a number of currently inactive permits which could be activated at any time or sold to new individuals wishing to enter the fishery. Cetaceans and sea turtles are known to become entangled in lobster pot gear. Since the amount of gear has increased significantly in recent years, the risk of entanglement has also increased. Under this alternative, there would be no controls on future trap gear increases. Thus, little action would be taken under lobster management authority to reduce the risk of entanglement, and entanglement risk could actually increase if the number of traps increases. NMFS has implemented measures under the Marine Mammal Protection Act to begin reducing the risk of lobster gear to whales. However, the current plan contains regulations which primarily require best available current practices. The majority of the risk reduction under the MMPA plan will come only after gear modifications have been developed through ongoing research and development.

(4) Social/Cultural and Economic Impacts

See the description of the current lobster fishery in Section IV.4. This alternative would include no new effort control measures for trap gear and would carry forward measures contained in the existing federal FMP. Increased lobster landings in recent years are probably attributed to intensified fishing effort as well as favorable environmental conditions which have enhanced egg production and larval survival. If favorable environmental conditions continue, economic revenues may remain at current levels or increase with current or increased fishing effort. An adverse change in the environment, in combination with present overfishing of the resource, could immediately jeopardize the future sustainability of the lobster industry (see Section II.3). Fishing effort, i.e., the number of lobster traps used in the fishery, would likely continue to increase throughout the range of the resource. Per-capita costs for fishing gear acquisition and maintenance could similarly increase, resulting in decreased revenues at current lobster prices and resource abundance. The practice of setting out large numbers of traps over large areas may also be intensified, resulting in longer fishing days, tending more gear and increased operational costs. User conflicts for access to limited productive fishing grounds will likely proliferate with further effort expansion.

B. Alternative 2: Implement ASMFC (CFMP Amendment 3) Recommendations for Lobster Management in Federal Waters

This alternative maintains current Federal conservation measures under the MSA (see Section II.1 - Federal Lobster Management), but applies such measures through the ACFCMA.

In addition, the following measures would be implemented:

- Maximum size limit. It would be unlawful to possess a lobster greater than 5 inches carapace length by any vessel fishing in the Gulf of Maine, encompassing areas off the coastline of Maine, New Hampshire, and Massachusetts to the northernmost point on Cape Cod (Area 1 described in ASMFC CFMP Amendment 3, 1997). Currently, there is no maximum size limit in the EEZ. Public comments are requested especially on the implementation of maximum size regulations in waters under Federal jurisdiction bordering the Gulf of Maine.

- Maximum Trap Size. It would be unlawful to possess a trap with a volume larger than 22,950 cubic inches, except in CFMP Area 3, where traps may not exceed a volume of 30,100 cubic inches. The ASMFC Plan allows fishermen to apply to their respective states for an exemption by March 1, 1998 to continue use of existing (i.e., in use as of November, 1997) larger traps. There is currently no maximum trap size in the EEZ. Public comments are requested especially on the implementation of maximum trap size regulation in waters under Federal jurisdiction.

- Escape Vents. All lobster traps, whether fished commercially or recreationally, must contain at least one rectangular escape vent per trap with a minimum size of 1-15/16 inches by 5 3/4 inches. The ASMFC Technical Committee will propose a complementary circular vent size which provides for equivalent conservation to be implemented in state waters prior to March 1999. At the current time, EEZ regulations require a rectangular portal with an unobstructed opening not less than 1-7/8 inches (4.76cm) by 5-3/4 inches (14.61cm); and/or two circular portals with unobstructed openings not less than 2-3/8 inches (6.03cm) in diameter.

- Trap Limits. The following trap limits would be implemented only for federal waters encompassing the Gulf of Maine (CFMP Area 1) and Outer Cape Cod Regions: 1000 traps per vessel in 1999 and 800 traps per vessel in the year 2000. In the offshore waters of the EEZ (CFMP Area 3), if no substitute plan is provided by ASMFC's Area 3 Conservation Management Team which would be deemed to provide for equivalent conservation, a limit of 2,000 traps would be implemented by 1999. The compliance schedule for the CFMP does not require implementation of trap limits for the other four lobster management areas identified by the ASMFC Plan (three of which encompass waters under federal jurisdiction). However, the CFMP requires Conservation Management Teams for these four management areas to investigate the need for trap reductions by October 1998 to achieve the Plan objectives. In particular, for Southern New England (CFMP Area 2), the CFMP indicates (although not required by the Plan's compliance schedule) that a trap limit of 1000 and 800 traps will be implemented during 1999 and the year 2000, respectively.

NMFS, during the development of the ASMFC Plan, indicated its position that the CFMP fails to

include a needed discussion and/or analysis to demonstrate the anticipated extent to which the Plan's management measures will achieve the CFMP goal to end overfishing. This is a federal requirement on overfishing under the provisions of the SFA that NMFS must also meet when implementing regulations under the ACFCMA. With specific regard to the three-year trap reduction schedule, NMFS has also cautioned that the trap limits identified in the trap reduction schedule (see Section III.1), rather than capping and reducing effort, potentially allow for expansion to higher levels (number of pots/traps) than currently exist. Accordingly, NMFS has emphasized a need to establish a lower trap limit with incremental reductions in fishing effort (see Alternative 3) in order to achieve the CFMP objectives, while maintaining, and subsequently increasing, the economic vitality of the lobster industry. Public comments and information are especially requested on perspectives concerning the number of pots/traps currently used by lobster fishermen, and the magnitude of increases in fishing effort during recent years.

NMFS endorses an area management approach which allows industry-tailored management measures to meet industry needs on an area by area basis. During development of the ASMFC Plan, however, NMFS emphasized the need for technical assistance to the CFMP's Conservation Management Teams. Further, this technical assistance should be included in the CFMP to provide advice to industry on conservation equivalency issues (see Section III.1). This advice should enable an analysis of area-specific management compliance with CFMP objectives to end overfishing.

Until such time as the ASMFC Plan can effectively incorporate this analytical ability, it is not possible for NMFS to immediately implement area management for all areas incorporated by the ASMFC Plan and comply with the National Standards, and associated legislative requirements to end overfishing. Under this Alternative, NMFS would work in partnership with the ASMFC and the states, under the provisions of the CFMP, to develop a unified "seamless" approach to bridge state and federal jurisdictions on an area by area basis. Such consultations have already been initiated (see Section III.1). In the interim, however, until this approach is completed in accordance with federal requirements to end overfishing and rebuild the lobster resource, there is a need to consider the implications of unilateral federal management measures in the EEZ. These interim measures include consideration of potential area management delineations in federal waters, such as those proposed in Alternative 3.

(1) Effects on Lobster

This alternative would continue current management measures in the EEZ, and implement additional EEZ-wide regulations concerning maximum trap size and minimum vent size in lobster traps. A prohibition on retention of larger lobsters would be implemented only in the Gulf of Maine Region. Trap limits would be implemented only for the Gulf of Maine and Area 3 of the CFMP ("offshore EEZ"), and the Outer Cape Cod Region. Potential trap limits for other areas of the EEZ are unknown at this time, but would be identified by ASMFC in the future.

The establishment of trap limits greater than the number currently used in the fishery could

provide an impetus to further elevate fishing effort and increase resource overfishing (see Section III.2.A.(1)). The conservation benefits of new trap and vent size regulations are unknown, but would likely be minor, especially if lobster fishing effort escalates. A maximum lobster carapace size limit in the Gulf of Maine Region would potentially have conservation benefit at such time that the frequency of currently depressed numbers of larger lobsters increases in the Gulf of Maine. Additional conservation benefits, unknown at this time, may accrue when anticipated area management strategies are further identified under the provisions of the CFMP. In the interim, current fishing mortality levels, if left unchecked under this alternative, may jeopardize the ability of the lobster population to sustain itself with a danger of a possible stock collapse.

(2) Effects on Environment

This alternative would not change the current effects on the environment.

(3) Effects on Marine Mammals and Sea Turtles

The impacts of current regulations were assessed in the EA and ESA Section 7 Biological Opinion issued regarding Amendment 5 to the lobster FMP. If the trap limitations in the years 1999 and 2000 provide an impetus for lobstermen to increase fishing effort (number of pots) over current levels, the risk of entanglement of cetaceans and sea turtles in lobster gear may increase over current levels. If the trap limitations, especially in succeeding years beyond the initial year of the trap reduction period in the Gulf of Maine and Outer Cape Cod Regions, result in reduction of current fishing effort levels, entanglement levels could possibly decrease. NMFS has implemented measures under the Marine Mammal Protection Act to begin reducing the risk of lobster gear to whales. See Section III.2.A.(3).

(4) Social Cultural and Economic Impacts

See Section III.2.A.(4).

It is unknown if fishing effort will increase or decrease under this alternative. If the establishment of trap limit regulations results in an impetus for lobstermen to fish more traps, perhaps in an effort to document “historical” fishery involvement, per-capita costs for fishing gear acquisition and maintenance would increase, resulting in decreased revenues at current lobster prices and resource abundance. Similarly, new requirements concerning maximum trap size and minimum vent size requirements may require expenditures for modified fishing gear. Conversely, if trap limitations result in actual decreases in number of traps fished, per-capita costs for fishing gear acquisition and maintenance could decrease, possibly resulting in overall increased economic efficiencies.

C. Alternative 3: Nearshore/Offshore Trap Limits with a Buffer Zone and Continue All Management Measures Currently in Place

This alternative would continue all current management measures contained in the NEFMC's American lobster FMP for federal waters and require all trap fishermen holding a federal permit to declare, for the duration of the stock rebuilding period (through December 31, 2003), that they will fish exclusively in one of the Lobster Fishing Zones shown in Table III.1.

Table III.1. Potential Lobster Fishing Zones

Lobster Fishing Zone Designation	Location	Distance From Shore	Initial Trap Number
Zone A	State/EEZ Nearshore	0 - 30 miles from shore	800
Zone B	EEZ Nearshore Zone	3-30 miles from shore	800
Zone C	EEZ Offshore Zone	beyond 40 miles from shore	2000

This alternative would limit current trap effort in federal waters by adopting in Year 1 (1999), a trap limit of 800 traps for those individuals who fish in either Zone A (EEZ and state waters combined) or Zone B and a maximum trap limit in federal waters of 2,000 traps for those individuals who fish only in Zone C. A trap fisherman cannot declare to fish in more than one zone. The higher trap limit for the EEZ Offshore Zone is based upon the historical characterization of the fishery (see Sections III.2.C.(4) and IV.4), comments received by the public in follow-up to the Notice of Intent for this EIS (see Section II.1), and recommendations regarding lobster management in federal waters contained in Amendment 3 to the CFMP.

The benefits of a trap reduction strategy, with associated reductions in fishing mortality, will be fully effected only if fishing effort is reduced throughout the range of the American lobster. Management measures under this alternative apply only to vessels with federal lobster fishing permits. Accordingly, NMFS will collaborate, through ASMFC, with state jurisdictions to identify a cooperative approach on an area by area basis as envisioned in Amendment 3 to the CFMP, i.e., application of effort reduction measures for state as well as federal lobster permit holders.

This alternative allows review of alternate measures as discussed in Section III.4. Management measures to replace a trap reduction schedule can be considered if they can be shown to have a conservation-equivalent benefit to the American lobster resource.

Trap Reduction:

Reduce the maximum number of traps in federal waters allowed per federal license holder in Years 2-5 (2000-2003) by implementing an annual reduction in the number of traps fished by 80 traps per year for Zone A and B and 200 traps per year for Zone C. (Table III.2).

A trap limit and/or annual reduction alternative is considered the best option for an immediate resource wide management measure. It has been widely discussed and evaluated by the industry, resource managers and the scientific community (e.g., see Sections II.3 and III.1). In addition, several states, as well as the public and industry advisory groups, have supported trap limits as a preferred or identified option during public hearings and recent public comment periods on issues pertaining to lobster management options in state and federal waters (e.g., see Section II.3).

The two largest lobster producing states are Maine and Massachusetts, which accounted for approximately 71% of all American lobster landed in 1996. Maine accounted for 44% of all American lobster valued at $107 million and Massachusetts accounted for 27% of all lobsters landed in 1996 valued at $64.5 million. These two states currently have in place restrictions on the maximum number of traps allowed by their lobster trap fishermen. According to data presented at the "Lobster Summit" sponsored by the New England Aquarium in Boston, Massachusetts, in February 1997, the average number of traps fished by Maine lobstermen was 562 traps per vessel in 1996. The State of Maine currently has an overall restriction of 1200 traps regardless of area fished, with some Maine management zones adopting smaller caps (600-800 pots/traps) to further curtail fishing effort. In Massachusetts, the state has a maximum limit or cap of 800 traps in state waters, although there are no restrictions on the number of traps allowed in Federal waters. The overall social and economic impacts of trap reduction on the industry is addressed in Section III.2.C (4).

This alterative is compatible with ASMFC's CFMP goal and objectives to help provide sustained harvest and minimize risk of stock depletion and recruitment failure of the American lobster. However, Amendment 3 to the CFMP does not extend beyond a 3-year trap reduction strategy, i.e., from 1200 traps per vessel in 1998 to 800 traps per vessel in the year 2000, for certain inshore EEZ waters, with no further reduction. The ASMFC's management measures are problematic as well regarding the CFMP's concept of reducing the number of traps over time, since five of the management areas in the CFMP encompass both state and federal waters. Although the federal government strongly endorses industry involvement in the establishment of lobster area management, and the identification of alternative conservation equivalent measures to meet industry needs, NMFS believes that a three-year trap reduction strategy, by itself, is insufficient to end overfishing and rebuild stocks. A more stringent longer-term trap management strategy is essential and warranted in federal waters to maximize the federal government's ability to protect the American lobster resource and to ensure compliance with other federal law. A failure of the states to continue effort reduction controls beyond the year 2000 may jeopardize the potential success of area management as proposed in the CFMP at the current time. NMFS will continue deliberations with ASMFC concerning the need for effort reduction in state waters, i.e. throughout the range of the American lobster, with specific reference to the Commission's intent to develop additional management measures (Section III.1) to address overfishing with implementation beginning in 1998.

TABLE III.2. Potential trap reduction strategy for federal permit holders

Month/Year	Plan Year	Zone A OR B TRAP CAP (0-30 Miles from Shore)	Zone C TRAP CAP (40-200 Miles from Shore)
January, 1999	1	800	2,000
January, 2000	2	720	1,800
January, 2001	3	640	1,600
January, 2002	4	560	1,400
January, 2003	5	480	1,200

Lobster Fishing Zone Designation:

The federal trap limit would be the maximum number of traps allowed to be fished in the EEZ by holders of federal lobster permits based upon the number of traps fished in federal and state waters combined. Once permit holders have declared to fish in one of the three lobster fishing zones, they would be required to remain in the selected zone for the duration of the stock rebuilding period (through December 31, 2003). If permit holders declare in Zone A, they may fish traps in federal waters from 3 - 30 miles from shore, but this number may be no greater than 800 subtracted by the number of traps fished in state waters (0 - 3). A permit holder in this category would be required to certify the maximum number of traps fished in state waters, and would be limited to no more than 800 traps in state and federal waters combined if the permit holder chooses to fish traps in federal waters. Permit holders declaring in Zone B would fish the entirety of their traps, up to a maximum number of 800, in federal waters from 3-30 miles from shore. Permit holders declaring in Zone C would be considered to be in the offshore (Zone C) lobster fishery only and may fish no more than 2,000 traps in 1999.

Lobster Buffer Zone:

Throughout the range of the resource, beginning at a distance of 30 miles from shore and extending for 10 miles, there will be a Lobster Buffer Zone (LBZ). The LBZ will require removal of all trap gear from the LBZ to effectively monitor and enforce Zone B and Zone C, the designated EEZ Nearshore and EEZ Offshore Zones, respectively. Due to the difference in trap allocations under this alternative, 800 traps versus 2000 traps, depending on the Zone declaration, there is concern of a possible shift in fishing patterns by lobster trap vessels to set gear just beyond Zone B to take advantage of the larger initial trap limit. The purpose of the LBZ is to discourage a shift in fishing patterns by requiring vessels declaring in Zone C to travel a minimum distance of 40 miles from shore before setting trap gear. Alternatives for restrictions on non-trap gear are addressed in Section III.3 of this EIS.

The delineation of a buffer zone extending from 30 to 40 miles from shore could enhance public understanding and alleviate enforceability concerns. Fishermen often lobby for fair and consistent enforcement. Buffer zones will clarify who is fishing under what rules, and limit contention. Further, gear conflicts are recognized by lobstermen (and other fishermen) to be an important

problem - especially with increasing levels of activity on the water and improved technology which allows the use of previously inaccessible areas. Buffer zones are generally seen as a fair and reasonable way to limit such conflicts. It should be noted that lobster conservation management teams for the inshore Gulf of Maine and (EEZ) offshore waters have been directed, under the provisions of ASMFC's CFMP, to develop a proposal for a closed area (closed to all lobster harvest) management strategy, similar to a buffer zone approach.
Alternatively, as a non-preferred option due to its complexity, the inland boundary line identified under the ASMFC CFMP Amendment 3 for the EEZ Offshore Area (Area 3) could be considered, and extended seaward for a distance of 10 miles. This is a boundary line developed by the lobster industry and was intended to delineate EEZ nearshore areas from offshore waters (See Table III.3).

TABLE III.3. Potential landward boundary line for establishment of a ten-mile lobster buffer zone in EEZ waters. This area is defined by the area bounded by straight lines (rhumb lines) connecting the following points, in the order stated,

Point	Latitude	Longitude
A	43°58' N.	67°22' W.;
B	43°41' N.	68°00' W.;
C	43°12.5' N.	69°00' W.;
D	42°49' N.	69°40' W.;
E	42°15.5'N	69°40' W.;
F	42°10' N.	69°56' W.;
K	41°10' N.	69°06.5' W.;
N	40°45.5' N.	71°34' W.;
M	40°27.5' N.	72°14' W.;
U	40°12.5' N.	72°48.5' W.;
V	39°50' N.	73°01' W.;
X	38°39.5'N	73°40' W.;
Y	38°12'N	73°55' W.;
Z	37°12'N	74°44' W.;
ZA	35°34'N	74°51' W.;
ZB	35°14.5'N	75°31' W.;
ZC	35°14.5'N	71°24' W.;
		From pt ZC along the seaward EEZ boundary to pt A

Lobster Fishing Certificate:

To prevent uncontrolled increases in the number of traps fished by lobster vessels, federally permitted lobster trap fishermen would be required to designate in which Lobster Fishing Zone they intend to fish on a form provided by NMFS. An analysis of the paperwork burden associated with this potential requirement is presented in Section VI. To aid in enforcement and administration of the program, lobster vessel owners will be required to carry a Lobster Fishing Certificate onboard their vessel. This Certificate will identify what Lobster Fishing Zone designation the vessel is enrolled in as well as additional information on trap tags to be discussed later in this section. Given that lobster fishing is strongly territorial relative to the placement of traps, requiring declaration of a particular zone should not be problematic for lobstermen. This type of management measure conforms well with the traditional community characteristics of lobster management.

Lobster Trap Tags:

In addition to the trap reduction schedule described above, the second aspect of an effort reduction program could involve federal lobster trap tags. Given that trap limits are one of the more accepted types of lobster management and that this measure is a way of enforcing trap limits, lobstermen should find tags a reasonable option - provided the tags are well designed. Involvement of fishermen in the design of the tags would be one way to assure this.

Federal trap tags would be issued annually and will be valid for the duration of the lobster fishing year in which they are issued. Federal permit holders (vessel owners) who declare to fish in Zone B or Zone C must request an appropriate number of uniquely numbered federal trap tags -- up to, but not exceeding, 800 tags and 2000 tags respectively in Year One (1999). Owners that declare in Zone A must request an appropriate number of uniquely numbered federal trap tags, minus the number of traps fished in state waters (or minus the number of state issued trap tags), not to exceed the 800 trap limit. Vessel owners would then be required to tag each lobster trap in federal waters with one federal tag. If the original tags are lost -- weather, gear conflicts and unforeseen events occasionally cause the loss of lobster traps -- the vessel owner must report lost tags as soon as possible after tags have been discovered missing, via letter, to the Regional Administrator (R.A.). Either at the same time or at a future date within the same fishing year, the vessel owner may request replacement tags, including with that request a check for the cost of the replacement tags. The use of a restricted number of tags will prevent uncontrolled increases in numbers of traps used by vessel operators. This provision can only be implemented by requiring that lobster vessel owners submit an additional form electing their Lobster Fishing Zone designation on the Lobster Fishing Certificate (described above). Additionally, on that same form, vessel owners will request an appropriate number of federal trap tags and send a check for the cost of the tags. In subsequent years, trap tags will be part of the annual permit renewal application, while the initial Lobster Fishing Zone designation will not be subject to change for the duration of the stock rebuilding period (through December 31, 2003).

(1) Effects on Lobster

It is difficult to quantify the degree to which this action would end overfishing. However, NMFS believes that an initial 800/2000 trap limitation (vs. the initial 1200 trap cap approved by ASMFC) with implementation of further effort control or conservation equivalent measures to increase egg production, will effectively begin to increase the effectiveness of other management measures proposed in the CFMP as larger lobsters recruit to the population. The ultimate success of this alternative will likely depend upon the adoption of complementary effort reduction measures in waters under coastal state jurisdiction. In this regard, cumulative action by NMFS and the states to effectively reduce fishing effort will have the added benefit of enhancing the effectiveness of other management measures, such as potential implementation of the alternative adjustments discussed in Section III.5.

There are other benefits to be gained from a reduction in the number of traps. The establishment of an 800 and 2000 trap "cap" for Zones A / B and C, respectively, will freeze proliferation of fishing effort beyond those levels and halt associated elevations in American lobster mortality. The raw number of traps is only one component of effective fishing effort. The number of trap hauls and average soak times are more important measures of effort. Due to the quantity of gear in the water, current fishing patterns do not allow the industry to optimize the effectiveness of their traps. NMFS recognizes that a reduction in the number of traps could lead to increased efficiency of the remaining ones, possibly to the extent that lobster mortality rates could increase. However, this alternative proposes a continued phased reduction in trap numbers over a four-year period to offset the potential for increased trap efficiency as trap numbers are reduced. Notwithstanding that the states, through ASMFC, have not yet adopted the specific details of a long-term trap reduction strategy advocated by NMFS to end overfishing (see Section III.1), this option provides an approach to foster continuation of state/federal communications for achieving the CFMP objectives. The degree to which trap reduction and other measures in the EEZ under this alternative will end overfishing on American lobster throughout its range largely depends upon commitment by ASMFC and the States to take timely effective action in preventing overfishing in state waters. The success of these measures in meeting American lobster management goals over time will be evaluated by a Lobster Scientific Monitoring Committee (LSMC) further described in Section III.5 of this EIS.

(2) Effects on Environment

The capping and reduction in number of lobster traps over a four-year period under this alternative could result in increased undisturbed habitat for the American lobster. Some areas, including the Lobster Buffer Zone (30-40 miles from shore) will be freed from lobster traps, and thus could become, or return to, lobster refuge. The practice of setting out large numbers of traps over large areas would also be reduced, thereby enhancing the availability of undisturbed habitat, and reducing the prevalence of "ghost gear" which is often the result of user conflicts and/or storms.

(3) Effects on Marine Mammals and Sea Turtles

Trap Reduction

This alternative is designed to reduce the amount of lobster pot gear in the EEZ. Because whales and sea turtles are known to become entangled in the buoy lines and/or groundlines of lobster pot gear, a widespread reduction in the concentration of gear in the EEZ will directly reduce the risk of entanglement per unit of fishing effort in the EEZ. Because the distribution of whales and sea turtles does not fully overlap the areas where gear is deployed, a linear relationship between trap reduction and entanglement risk reduction cannot be assumed. A reduction in the amount of lobster pot gear was discussed by the Atlantic Large Whale Take Reduction Team, which recognized the potential for risk reduction through effort control and changes in fishing practices. In addition, trap reduction was recommended by many lobstermen submitting written and oral testimony during the comment period for the proposed regulations to implement the Atlantic Large Whale Take Reduction Plan (ALWTRP). Several lobstermen recommended trap limits even lower than those proposed for the first several years of lobster trap reduction in this action. Commenters also suggested that NMFS include lobster effort reduction directly in the ALWTRP as a primary take reduction measure.

In addition to the risk reduction expected per unit of fishing effort, there are secondary effects resulting from reduced concentrations of gear in the EEZ. Since whales and turtles entangled in a single lobster pot or trawl occasionally drag the gear and become entangled in one or more additional pieces of lobster gear, the trap reduction program could represent a significant reduction in the risk of multiple entanglements. This could also alleviate multiple entanglements involving gear from other fisheries or anchor lines. The action should reduce the risk that buoy lines or ground lines of adjacent sets of gear will become snarled and reduce chances of gear being set on top of another boat's gear, which would then reduce entanglement risks associated with higher profile of the line resulting from the disruption as well as reduce the potential that an animal will become entangled in the snarled gear.

Several changes in fishing practices which could benefit protected species may occur. A reduction in the number of traps per permittee should result in a reduction in the practice of prospecting, where extra traps are set to detect movements of lobsters. Trap reduction may result in more frequent tending, which could increase the chance that a vessel would observe any entanglements that did occur. Decreased soak time could also directly reduce entanglement risk for sea turtles, particularly for leatherback turtles, which may be attracted to the algae and any gelatinous organisms that collect on buoys and buoy lines.

Trap reduction could also beneficially affect the marine habitat. Widespread trap reduction would decrease the intrusion of gear into cetacean and turtle habitat and free up margins of habitat from which these species are currently physically excluded due to the presence of gear and vessels working that gear. Since the fishery as currently operated results in ghost gear due to gear conflicts, storms, and other factors, reducing the overall number of traps should also reduce the

prevalence of ghost gear, which should benefit all biota.

This alternative could result in less risk reduction than the two-tier alternative (Alternative 4) since this alternative could allow an increase in the number of traps deployed in Year 1 for vessels fishing fewer than 800/2000 and will not represent risk reduction for those vessels currently fishing less than the maximum allowed in any of the 5 years of the plan. Although the number of traps may increase in the first year, subsequent plan years should result in an overall decrease.

It is conceivable that some vessels will elect to forego or curtail fishing in the EEZ under the federal trap limits in favor of fishing in state waters if that state does not have a limit or has a more favorable limit. Thus, the federal limit may result in an effort shift into state waters, increasing the entanglement risk in state waters. It is likely that this effect would be minimal during the first year of the trap reduction program and the relative risk would become more pronounced as the federal limit decreases in out years. The effect would probably be localized, *i.e.*, limited to areas where there is available fishing area in state waters. In states with lower trap limits, an influx of new traps from vessels who currently fish all or most of their gear in federal waters could counteract state reduction efforts. Under that scenario, there would be limited net risk reduction for protected species in state waters.

Lobster Fishing Zone Designation

The proposal to include a single trap allocation for vessels regardless of whether they fish in both state and federal waters may result in reduced effort in federal waters by some vessels if they choose to use their entire limit in state waters. The creation of the three zones and the 10-mile buffer zone could reduce or eliminate the practice of bringing gear in closer to shore for storage during certain times of the year, although this practice has been curtailed under the Atlantic Large Whale Take Reduction Plan already. A "stored gear" component to the fishery is considered to have a higher risk than an active fishery because vessels are not tending gear and are therefore not likely to observe entanglements in their gear or another vessel's gear. For the most part, it is not possible to distinguish between impacts of defining the buffer zone based on a set distance from shore versus using the existing definition of the Area 3 management line in the ASMFC Amendment 3 regulations. However, the use of the Area 3 line is consistent with the inshore/offshore division used in the ALWTRP interim final regulations.

Buffer Zone

The inclusion of a buffer zone could increase the potential for entanglement on the boundaries, but entanglement risk from lobster pot gear would be eliminated in the buffer zone itself. Prohibiting a pot fishery in the buffer zone would decrease the potential for ghost gear due to gear conflict with the mobile sector in the buffer zone.

Lobster Fishing Certificate

This provision is not expected to affect protected species.

Lobster Trap Tags and Future Mandatory Reporting

An individual trap tag system would provide useful information for identifying and managing risks to cetaceans and turtles from the lobster pot fishery. The trap tag system may also increase compliance with the trap limits, thereby increasing the potential effectiveness of that measure in reducing entanglement risk. The inclusion of a trap tag program is also likely to increase compliance with ALWTRP provisions, because gear inspected for compliance with lobster regulations must also be in compliance with ALWTRP regulations. The inclusion of a mandatory reporting system would greatly increase the precision of protected species management efforts, particularly if this system is developed jointly with state systems.

(4) Social/Cultural and Economic Impacts

The capping and reduction in number of fish traps over the four-year stock rebuilding period could reduce gross revenues for some portion of the lobster industry. Ultimately, however, this alternative could result in gross economic benefits ranging between $11.5 and $70.2 million, with higher benefits accruing to the industry if state jurisdictions were to implement complementary regulations throughout the range of the resource. The economic benefits include the joint benefit of gains in industry revenues and reduced capital costs. A cap and reduction of fishing effort could also help alleviate user conflicts for productive fishing grounds among trap fishermen and lessen gear conflicts between fixed and mobile gear fisheries. A higher trap limit for federal permit holders in the offshore EEZ fishery strives to maintain the historical character and economics of that industry sector. In the worst case scenario, absence of effort control by state jurisdictions could result in voluntary cancellation of permits by federal permit holders, and transfer of increased fishing effort to state waters, thereby intensifying overexploitation of American lobster in coastal areas. However, assuming that the states and NMFS will work in partnership to implement effort control measures under the ACFCMA, and in view of the ASMFC's expressed intent to immediately begin development of additional measures to address overfishing with implementation beginning in 1998, there is optimism that potential economic benefits can be achieved under this alternative. Additionally, the associated measures enable future consideration of actions to address specific social and cultural issues faced by the industry on an area by area basis, e.g., through collaboration with the industry's conservation management teams identified in Amendment 3 to the CFMP.

As discussed in Section IV.4 and Section V, trap vessels can be divided into nearshore and offshore vessels. This division is generally a factor of and reflected in vessel size. Trap vessels under 50 feet are usually nearshore vessels, with larger vessels being offshore. Nearshore vessels, especially, tend to use an annual round involving gear and species switching by season. Offshore vessels, however, are also likely to take other species as either bycatch or directed fishing (Section

IV.4).

Nearshore

A review of NMFS permit data for 1996 shows that there were 183 vessels which would be affected by a year one cap of 800 traps. They are small to mid-sized vessels (Tables III.4 and III.5), based primarily in Rhode Island and Maine, followed by Massachusetts and then New Jersey (Table III.6). Only the individual primary ports of Point Judith, RI (29 vessels) and Belford, NJ (10), however, show more than 10 affected vessels.

Nearly half of these 183 vessels possess at least some other federal permits (Table III.7), though all these fisheries are also under increasingly restrictive regulations at this time. The fact that many of these trap fishermen did not apparently renew their permits in alterative fisheries during 1997 (Table III.7), suggests that there are few other fishing income sources available for them. Some income may be being earned, however, in fisheries not yet under federal management or in state waters.

Table III.4 Length Data for Trap Vessels Impacted by 800 Trap Cap with 1996 Commercial Federal Lobster Permits

Avg. Length for All Trap Vessels Impacted by 800 Trap Cap	**Number of Trap Vessels Impacted by 800 Trap Cap and in Various Length Categories**				
	0-30 ft	31-45 ft	46-60 ft	61-100 ft	101+ ft
40 feet	3	154	26	0	0

Table III.5 Tonnage Data for Trap Vessels Impacted by 800 Trap Cap with 1996 Commercial Federal Lobster Permits

Avg. Tonnage for All Trap Vessels Impacted by 800 Trap Cap	**Number of Trap Vessels Impacted by 800 Trap Cap and in Various Tonnage Categories**			
	0-4 GRT	5-50 GRT	51-150 GRT	151-500 GRT
19 GRT	2	181	0	0

Table III.6 Number of Trap Vessels Impacted by 800 Trap Cap and by Primary Port State holding 1996 Commercial Federal Lobster Permits

CT	**DE**	**MA**	**ME**	**NH**	**NJ**	**NY**	**RI**	**Other**
4	3	38	48	4	25	4	56	1

Table III.7 Numbers of Commercial Federal Lobster Permitted Trap Vessels Impacted by 800 Trap Cap and holding Different Types of Other Federal Permits

	Multispecies	Summer Flounder	Squid/ Mackerel/ Butterfish	Atlantic Sea Scallops	Black Sea Bass	Scup
1996	142	16	92	87		
1997	55	4	33	36	8	9

N.B. Black sea bass and scup did not come under federal permitting until 1997.

There would be 492 trap vessels affected by the 480 trap cap in year five. The majority are still small to mid-sized, though some very small vessels are affected at this limit (Tables III.8 and III.9). At this level, Rhode Island is no longer the most affected state. Impacts are heaviest in Massachusetts and Maine, followed by Rhode Island and then New Jersey (Table III.10). In Massachusetts the only primary ports with 10 or more affected vessels are Gloucester (33 vessels), Beverly (13), Boston (12), Westport (12), and Plymouth (10). In Maine only Portland (14) has more than 10 affected vessels. In Rhode Island, Point Judith (44) and Newport (11) have the heaviest concentrations, while in New Jersey only Belford (12) exceeds 10 affected vessels.

Some of these vessels have other federal permits, though as restrictions in these other fisheries increase many appear to be letting those permits expire (Table III.11). Some black sea bass and scup pot fishermen especially in New York and New Jersey take lobsters as a bycatch. Though more commonly an offshore activity, some of these 492 vessels do possess black sea bass and scup permits and may in fact be primarily targeting those species. With their target species quotas reduced, this industry sector will likely be looking to bycatch species (such as lobster) for more of their income.

Table III.8 Length Data for Trap Vessels Impacted by 480 Trap Cap with 1996 Commercial Federal Lobster Permits

Avg. Length for All Trap Vessels Impacted by 480 Trap Cap	**Number of Trap Vessels Impacted by 480 Trap Cap and in Various Length Categories**				
	0-30 ft	31-45 ft	46-60 ft	61-100 ft	101+ ft
38 feet	28	430	34	0	0

Table III.9 Tonnage Data for Trap Vessels Impacted by 480 Trap Cap with 1996 Commercial Federal Lobster Permits

Avg. Tonnage for All Trap Vessels Impacted by 480 Trap Cap	**Number of Trap Vessels Impacted by 480 Trap Cap and in Various Tonnage Categories**			
	0-4 GRT	5-50 GRT	51-150 GRT	151-500 GRT
16 GRT	18	474	0	0

Table III.10 Number of Trap Vessels Impacted by 480 Trap Cap and by Primary Port State holding 1996 Commercial Federal Lobster Permits

CT	**DE**	**MA**	**MD**	**ME**	**NH**	**NJ**	**NY**	**RI**	**Other**
5	3	171	3	159	11	40	11	87	2

Table III.11 Numbers of Commercial Federal Lobster Permitted Trap Vessels Impacted by 480 Trap Cap and holding Different Types of Other Federal Permits

	Multispecies	**Summer Flounder**	**Squid/ Mackerel/ Butterfish**	**Atlantic Sea Scallops**	**Black Sea Bass**	**Scup**
1996	363	32	240	217	*	*
1997	193	21	94	131	20	25

* Black sea bass and scup did not come under federal permitting until 1997.

Offshore

Only 20 trap vessels would be impacted by the initial 2000 trap cap for offshore vessels. These are mid to large vessels (Tables III.12 and III.13), located primarily in Rhode Island (Table III.14). No single primary port, however, shows even 10 affected vessels.

Almost all have other federal permits (Table III.15), though restrictions in those fisheries will limit redirected effort. The fact that many of these trap fishermen have apparently let their permits expire in those alternative fisheries in 1997 supports this hypothesis. Some fishermen, however, may also be participating in fisheries which do not require federal permits (such as Jonah crabs) or in state waters fisheries. As noted in Section IV.4, in the past 5 years some participants in the offshore lobster fishery have diversified into black sea bass pots. Recent black sea bass and scup quotas under the joint Mid-Atlantic Council/ASMFC Summer Flounder FMP limit that activity. However, none of the fishermen affected by an 2000 trap cap had either black sea bass or scup permits in 1996 or 1997, though some may still be appealing limited access status. Thus, these black sea bass and scup strictures are unlikely to add significant additional burden to the lobster trap fishermen under consideration here.

Table III.12 Length Data for Trap Vessels Impacted by 2000 Trap Cap with 1996 Commercial Federal Lobster Permits

Avg. Length for All Trap Vessels Impacted by 2000 Trap Cap	Number of Trap Vessels Impacted by 2000 Trap Cap and in Various Length Categories				
	0-30 ft	31-45 ft	46-60 ft	61-100 ft	101+ ft
69 feet	0	0	7	13	0

Table III.13 Tonnage Data for Trap Vessels Impacted by 2000 Trap Cap with 1996 Commercial Federal Lobster Permits

Avg. Tonnage for All Trap Vessels Impacted by 2000 Trap Cap	Number of Trap Vessels Impacted by 2000 Trap Cap and in Various Tonnage Categories			
	0-4 GRT	5-50 GRT	51-150 GRT	151-500 GRT
92 GRT	0	5	12	3

Table III.14 Number of Trap Vessels Impacted by 2000 Trap Cap and by Primary Port State holding 1996 Commercial Federal Lobster Permits

RI	Other
18	2

Table III.15 Numbers of Commercial Federal Lobster Permitted Trap Vessels Impacted by 2000 Trap Cap and holding Different Types of Other Federal Permits

	Multispecies	Summer Flounder	Squid/ Mackerel/ Butterfish	Atlantic Sea Scallops	Black Sea Bass	Scup
1996	15	4	11	6		
1997	3	0	1	4	0	0

N.B. Black sea bass and scup did not come under federal permitting until 1997.

The 1200 trap cap for year five would affect 51 vessels. They are primarily large vessels (Tables III.16 and III.17) that claim primary ports of landing in Rhode Island and Massachusetts (Table III.18). No single primary port shows as many as 10 vessels affected. Some have permits in other federal fisheries, though the numbers of these fishermen holding other permits are decreasing (Table III.19).

Table III.16 Length Data for Trap Vessels Impacted by 1200 Trap Cap with 1996 Commercial Federal Lobster Permits

Avg. Length for All Trap Vessels Impacted by 1200 Trap Cap	Number of Trap Vessels Impacted by 1200 Trap Cap and in Various Length Categories				
	0-30 ft	31-45 ft	46-60 ft	61-100 ft	101+ ft
68 feet	0	0	14	37	0

Table III.17 Tonnage Data for Trap Vessels Impacted by 1200 Trap Cap with 1996 Commercial Federal Lobster Permits

Avg. Tonnage for All Trap Vessels Impacted by 1200 Trap Cap	Number of Trap Vessels Impacted by 1200 Trap Cap and in Various Tonnage Categories			
	0-4 GRT	5-50 GRT	51-150 GRT	151-500 GRT
86 GRT	0	11	36	4

Table III.18 Number of Trap Vessels Impacted by 1200 Trap Cap and by Primary Port State holding 1996 Commercial Federal Lobster Permits

MA	NH	NJ	RI	Other
16	4	3	27	1

Table III.19 Numbers of Commercial Federal Lobster Permitted Trap Vessels Impacted by 1200 Trap Cap and holding Different Types of Other Federal Permits

	Multispecies	Summer Flounder	Squid/ Mackerel/ Butterfish	Atlantic Sea Scallops	Black Sea Bass	Scup
1996	45	10	28	18		
1997	11	1	4	13	1	1

N.B. Black sea bass and scup did not come under federal permitting until 1997.

See Section V and additional discussion under Alternative 1 of this EIS for additional description of the associated economic and social impacts under this alternative.

D. Alternative 4: Four-tier Nearshore/Offshore Trap Limit with a Buffer Zone

There has been concern that trap fishermen fishing significantly less than 800 traps, (especially less than 400 traps) could increase effort under the 800/2000 Trap Cap Alternative. NMFS anticipates

that this concern is more germane to trap fisheries in certain state waters, and may not be necessarily applicable to the EEZ. Nevertheless, because the issue is often raised, public comments are being requested on this alternative.

One way to alleviate concern over the potential for increased effort would be to require all federal lobster permit holders fishing traps to certify the number of traps they actually fished in 1997. Permit holders who have elected either Lobster Fishing Zone A or Zone B and certified their number of traps fished in 1997 was less than 400, would be limited to a maximum of 400 traps in Year One (1999). Permit holders who have elected either Zone A or Zone B and have certified their number of traps fished in 1997 was greater than 400, would be limited to a maximum of 800 traps in Year One (1999).

A similar strategy would apply to the offshore fleet for vessels fishing less than 1000 traps. Permit holders who have elected Zone C and certified their number of traps fished in 1997 was less than 1000, would be limited to a maximum of 1000 traps in Year One (1999). Permit holders who have elected Zone C and certified their number of traps fished in 1997 was greater than 1000, would be limited to a maximum of 2000 traps in Year One (1999).

Under this alternative, all federal permit holders fishing traps would be required to implement an annual reduction in the number of traps fished in Years 2-5 (2000-2003). Federal lobster permit holders who have elected either Zone A or Zone B and were limited to a maximum of 400 traps in Year One (1999), would reduce the maximum number of traps allowed by 40 traps per year for Years 2-5. Permit holders who have elected either Zone A or Zone B and were limited to a maximum of 800 traps in Year One (1999), would reduce the maximum number of traps allowed by 80 traps per year for Years 2-5. Permit holders who have elected Zone C and were limited to a maximum of 1000 traps in Year One (1999) would reduce the maximum number of traps allowed by 100 traps per year for Years 2-5. For Federal lobster permit holders who have elected Zone C and were limited to a maximum of 2000 traps in Year One (1999) would reduce the maximum number of traps allowed by 200 traps per year for Years 2-5 (See Table III.20 for a tabular description of this two-tier system).

As with alternative 3, there would be a Lobster Buffer Zone, and trap tagging requirement**.** Refer to Section III.2.C. This proposal is presented as an alternative with the intent of seeking public comments on such an option. It would involve an increased administrative and enforcement burden required by a 400/800 and 1000/2000 trap cap certification, verification, and implementation process compared to Alternative 3.

TABLE III.20. Four-tier trap reduction strategy under Alternative III.2.D

Month/Year	Plan Year	Zone A OR B TRAP CAP (3-30 Miles from Shore)		Zone C TRAP CAP (40-200 Miles from Shore)	
		Certified fishing		Certified fishing	
		less than 400 traps	more than 400 traps	less than 1000 Traps	more than 1000 Traps
January, 1999	1	400	800	1000	2,000
January, 2000	2	360	720	900	1,800
January, 2001	3	320	640	800	1,600
January, 2002	4	280	560	700	1,400
January, 2003	5	240	480	600	1,200

(1) Effects on Lobster

The number of lobster traps employed in the fishery under this alternative would likely result in decreased fishing effort on the American lobster compared to Alternative 3. Accordingly, this option could do more to end overfishing and restore the stocks of American lobster over a shorter time period.

(2) Effects on Environment

This alternative could potentially reduce the number of lobster traps in the marine environment compared to Alternative 3, and thus increase the amount of lobster bottom for lobster refuge.

(3) Effects on Marine Mammals and Sea Turtles

The initial trap allocation under this option will start at either 400 or 800 traps for the nearshore fishery and 1000 or 2000 traps for the offshore fishery, based on certification by each vessel of the number of traps fished in 1997. Thus this option has greater flexibility to control the number of traps in Year 1 than Alternative 3 and could more precisely limit the potential for vessels to increase traps beyond current practice in subsequent plan years. Because there is less potential for increase in number of traps currently fished -- and therefore less chance of increased entanglement risk in any plan year -- this option has the potential to effect a quicker conservation benefit for protected species than Alternative 3. In addition, there is a potential to achieve greater reduction in the total number of traps in the fishery at the end of the reduction schedule than under the Alternative 3.

See discussion under impacts of Alternative 3 (Section III.2.C (3)) for additional information on

potential adverse effects of effort shifts resulting from different trap limits in federal and state waters.

(4) Social/Cultural and Economic Impacts

See Section V for a description of the economic impacts for Alternative 3. The intent of this alternative, compared to Alternative 3, is to more effectively maintain the historical proportion of fishing effort during the stock rebuilding period on a fishing vessel by vessel basis. The four-tier determination of trap caps for the nearshore and offshore EEZ fishery could thereby prevent an undesired and otherwise "allowable" expansion of fishing effort which could potentially change the relative social and economic characteristics of the industry. However, it is difficult to predict how well this approach would succeed in the absence of an accurate way to certify the past amounts of pots fished; conceivably, many fishermen may try to be certified for the highest amount to maintain an initial high trap limit to reduce future impacts from the lobster stock rebuilding/trap reduction schedule. Establishing lower trap limits for smaller scale fishermen might also create conflicts in fishing behavior between those with fewer than 400 traps and those fishermen with more than 400 traps.

E. Alternative 5: Nearshore Fixed Trap Limits/Offshore Historic Participation

Federal lobster permit holders fishing traps will be required to designate which Lobster Fishing Zone they intend to fish; Zone A, Zone B, or Zone C as previously described in Alternative 3 (Section III.2.C).

Zone A and Zone B:

Under this alternative, permit holders declaring their intent to fish in Zone A or Zone B will be required to limit current trap effort by adopting in Year One (1999) a trap limit of 800 traps. For Zone A and Zone B participants, this is the same as Alternative 3 described in section III.2.C. During the stock rebuilding period in Years 2-5 (2000-2003), permit holders will reduce the maximum number of traps allowed by implementing an annual reduction in the number of traps fished by 80 traps per year. In subsequent years of the stock rebuilding period, an historically based trap allocation program would be given strong consideration for the nearshore component of the fleet. Refer to the description for Zone C permit holders described below for details of a potential historically based trap allocation program.

Zone C:

Federal lobster permit holders declaring their intent to fish in Zone C will be given a percentage of their historic trap levels in Year One with a structured decrease in the maximum number of traps fished in Years 2-5. Under this alternative, permit holders possessing documentation (by the best available records) with regard to specific trap levels over a defined period will be assigned 75% of their average annual history based trap level as the initial annual allocation in Year One. In

subsequent Years 2-5, annual allocations to federal lobster permit holders in Zone C will be reduced by 10% of their initial Year One allocation on an annual basis. For example: A permit holder can document fishing 3000 traps during the defined documentation period. The Year One allocation would be 2250 traps (75% of 3000 traps). In subsequent Years 2-5 of the stock rebuilding period the permit holder would be required to reduce, on a yearly basis, the maximum number of traps fished by 225 traps (10% of 2250).

At the end of the rebuilding period, trap allocation levels will be maintained, but may be subject to adjustment consistent with the most recently available quantitative stock assessment. Permit holders will be subject to the common restrictions (including minimum size limits, escape vents or other restrictions) as appropriate.

Documentation to support the initial history based trap allocation for Zone C could require:

a sworn affidavit attesting to the number of traps fished in the defined qualification period,

and/or supporting documentation such as proof of trap purchases,

and/or number of traps fished or hauled, established on the basis of information from logbooks, or other information.

and/or ten traps per foot of boat length,

and/or the number of traps indicated in Federal lobster vessel permit applications for the year 1992.

(1) Effects on Lobster

The number of lobster traps under this alternative will likely increase in the offshore EEZ waters compared to Alternative 3. Accordingly, it would likely contribute to higher lobster mortality levels, thereby prolonging the achievement of lobster management goals throughout the range of the resource.

(2) Effects on Environment

This alternative, due to the increased number of lobster traps in the EEZ compared to Alternative 3, would potentially decrease the availability of American lobster refuge areas and undisturbed habitat.

(3) Effects on Marine Mammals and Sea Turtles

Impacts for Zones A and B would be similar to those under the Alternative 3. For Zone C, vessels could be allocated a higher number than traps than under Alternative 3, and the overall

reduction for those vessels would then be less at the end of the reduction schedule. Therefore, this alternative will offer less protection from entanglement risk than Alternative 3. See discussion under impacts of Alternative 3 for additional information of potential adverse effects of effort shifts resulting from different trap limits in federal and state waters. (Section III.2.C.(3)).

(4) Social/Cultural and Economic Impacts

This alternative would alleviate the social and economic impacts of a trap reduction schedule for the offshore EEZ fishery (and potentially, for the inshore EEZ fishery during future years), similar to Alternative 3 (See also Section V). It is predicated upon the historical and economic nature of the offshore EEZ trap fishery as well as upon previous recommendations made by industry groups and during the public comment period on the Notice of Intent to prepare this draft EIS (see Section II.1). However, as under Alternative 4, it is difficult to predict how well this approach would succeed in the absence of an accurate and industry-accepted way to certify previous levels of fishing effort on a vessel by vessel basis.

F. Alternative 6: Ban Fishing for and Possession of Lobster

This alternative would require removal of all trap gear and closure of the EEZ to fishing for, and possession of, lobster by any fishing vessel for an extended period of time until lobster stocks recover throughout their range. Revisions to the MSA by the SFA requires assertive actions to end overfishing and begin a stock rebuilding program in waters under federal jurisdiction. Approximately 80% of American lobster is harvested from within state waters whereas only about 20% is harvested from federal waters, and an EEZ closure alone will not end overfishing. This action, however, would constitute the maximum protection possible by the federal government to prevent overfishing in the EEZ. This action would be much easier to enforce than any other alternative considered here.

(1) Effects on Lobster

The prohibition on fishing for or possession of lobster under this alternative would afford the maximum protection possible under federal law for attempting to end overfishing in the EEZ and rebuilding the portion of the American lobster population which occurs in waters under federal jurisdiction. It would create a refuge for lobster that might mitigate the effects of overfishing in coastal areas. However, an EEZ closure to lobster fishing could also result in the transfer of fishing effort to state waters. The resultant potential disruption to the existing inshore fishery could exacerbate the attainment of lobster restoration objectives.

(2) Effects on Environment

The prohibition on fishing for lobster under this alternative would provide the maximum benefit possible in enhancing the increased availability of undisturbed habitat and refuge for American

lobster in the EEZ.

(3) Effects on Marine Mammals and Sea Turtles

Removal of trap gear targeting lobster from the EEZ for an extended period of time and banning fishing for and possession of lobster in the EEZ by all gear types would provide maximum protection from entanglement risk presented by all gear types targeting lobster in the EEZ waters during that period, and in balance, would be expected to have a positive effect on the conservation of protected species relative to the other alternatives considered here. However, entanglement risk would be likely to increase in territorial waters - in particular just inside the 3-mile line -- due to potential influx from the EEZ of any gear types known to entangle protected species. In addition to the entanglement risk, protected species could be excluded from the territorial water habitat due to higher densities of gear targeting lobster. Other effects of increased gear density could include increased frequency of gear snarls and lost gear resulting in ghost gear and effects on the habitat itself. This type of effort shift could have significant impact on protected species, particularly northern right whales and sea turtles. Effects could be most acute in the Cape Cod Bay area, where both right whales and sea turtles are found in very shallow water.

(4) Social/Cultural and Economic Impacts

See Section IV.4 for a description of the economic and social importance of the lobster industry. This alternative would prohibit the fishing for, and retention of, American lobster in the EEZ, which presently accounts for approximately 20% of total annual landings. This prohibition would impact the income-generating activities of 3,153 vessel owners who currently hold federal lobster permits. There are approximately 100 vessels which target lobsters with lobster traps in the offshore EEZ, mainly in the canyon areas. A ban on the possession of lobster would likely put an unknown proportion of these vessels out of business and result in unemployment of vessel crews.

Any action to limit fishing activities on lobster can result in shifting of effort to other fisheries. For example, of the 3,153 vessel owners who hold federal lobster permits, 1,984 (63%) also hold at least one other federal permit (Section IV.4). The extent to which fishing behavior will increase exploitation on other fishery resources as a result of lobster fishing restrictions is unquantifiable. This alternative (in combination with Alternative III.3.C) would likely result in the maximum potential to cause a substantive shift of effort to other EEZ, as well as inshore fisheries.

Similarly, this alternative could have severe economic consequences on the lobster bait fisheries, e.g., the Maine herring industry which derives income from sale of whole fish by herring fishermen, or herring cuttings by sardine factories, as bait to lobster trap fishermen.

3. Non-Trap/Pot Lobster Fishery

A. Alternative 1: Landings by fishermen using gear or methods other than traps will be

limited to 100 lobsters (or parts thereof) for each fishing trip of 24 hours or less duration (up to a maximum of 500 lobsters (or parts thereof) during any 5-day period); or 500 lobsters (or parts thereof) for a fishing trip of 5 days or longer, unless further restricted by another FMP/Status Quo.

This option corresponds to the legislative requirement for regulation of the non-trap/pot fishery as specified in the SFA which was implemented on March 1, 1998 (Section II.1). It is also related to the CFMP's recommendation that landings be limited to no more than 100 lobster per day (based on a 24-hour period) up to a maximum of 500 lobsters per trip, for trips 5 days or longer. This alternative is associated with monitoring and enforcement complexities concerning the need to distinguish the specific duration of multiple day fishing trips. However, at the December 9, 1997 meeting of the NEFMC, the Council objected that adoption of this alternative would be contrary to lobster management goals. Specifically, the Council believes that non-trap harvest should be monitored first within an overall cap and trip (daily) limits implemented at a later time only if necessary to ensure that non-trap harvests remain under the established limit. Other federal lobster laws would remain in effect, including but not limited to more restrictive lobster possession limits applicable to certain exempted fisheries and the prohibition on the possession and landing of lobster parts.

(1) Effects on Lobster

The intent of this alternative is to maintain the catch of American lobster by methods other than pots or traps at historical harvest levels. To the extent that it would prevent a potential future proliferation of fishing effort by this gear sector, it would abbreviate the time otherwise necessary to achieve the American lobster stock rebuilding goals.

(2) Effects on Environment

The intent of this alternative would maintain the non-trap/pot harvest of lobster at historical levels. Accordingly, there would be no substantive impact upon the environment.

(3) Effects on Marine Mammals and Sea Turtles

No information is available at this time on protected species impacts from the use of non-trap gear types specifically targeting lobster. However, small and large cetaceans, pinnipeds, and/or sea turtles have been entangled in one or more of these gear types. The levels of impact are unknown, primarily due to low percentages of observer coverage in most of these fisheries. This potential action is intended to cap effort in the non-trap sector rather than to reduce that effort. Therefore, the action for the non-trap sector is not expected to affect protected species.

(4) Social/Cultural and Economic Impacts

Historical levels of harvest are not anticipated to be substantively impacted, resulting in a no-net

decrease in revenues for approximately 76% of participants in this fishery.

There are 21 mobile gear vessels whose income would be affected by 5% or more under a limit of 100 lobsters per day, up to a maximum of 500 lobsters per trip. All are commercially permitted only. They are larger on average than the mobile gear sector as a whole (Tables III.21 and III.22 versus Tables IV.1 and IV.2), and almost all claim primary ports of landing in Massachusetts (Table III.23). The majority also hold permits for some or all of the other major trawl fisheries in the region (Table III.24), indicating some flexibility in their options for redirecting effort to alternative fisheries. However, given that those alternative fisheries are all under increasingly restrictive regulations on landings and fishing time, relatively little redirection is likely to be possible to any one fishery. Increased effort would need to be spread across all available fisheries.

Table III.21 Length Data for Mobile Gear Vessels Impacted by >5% with 1996 Commercial Federal Lobster Permits

Avg. Length for All Mobile Gear Vessels Impacted by >5%	**Number of Mobile Gear Vessels Impacted by >5% and in Various Length Categories**				
	0-30 ft	31-45 ft	46-60 ft	61-100 ft	101+ ft
75 feet	0	<3	<3	17	<3

Table III.22 Tonnage Data for Mobile Gear Vessels Impacted by >5% with 1996 Commercial Federal Lobster Permits

Avg. Tonnage for All Mobile Gear Vessels Impacted by >5%	**Number of Mobile Gear Vessels Impacted by >5% and in Various Tonnage Categories**			
	0-4 GRT	5-50 GRT	51-150 GRT	151-500 GRT
130 GRT	0	3	9	9

Table III.23 Number of Mobile Gear Vessels Impacted by >5% and by Primary Port State holding 1996 Commercial Federal Lobster Permits

MA	**Other**
18	3

Table III.24 Numbers of Commercial Federal Lobster Permitted Mobile Gear Vessels Impacted by >5% and holding Different Types of Other Federal Permits

	Multispecies	Summer Flounder	Squid/ Mackerel/ Butterfish	Atlantic Sea Scallops	Black Sea Bass	Scup
1996	21	16	21	19		
1997	16	11	11	15	4	6

N.B. Black sea bass and scup did not come under federal permitting until 1997.

See Section V of this EIS for additional description of the associated economic and social impacts under this alternative.

B. Alternative 2: Landings by fishermen using gear or methods other than traps (non-trap fishermen) will be limited to no more than a maximum of 500 lobsters per trip, regardless of trip length, unless further restricted by another FMP

Non-trap gear continues to be a very difficult issue within the industry. There is concern of potential increases in effort from redirection of effort from other fisheries, or shoreside industries. Landings over the 1994-1996 period indicate that approximately 2.2% of lobsters have been landed by the non-trap sector. A review of landings over the ten year period 1984-1994, showed an average of 2.3% of lobster landings were taken by methods other than traps or pots. A limit of 500 lobsters per trip should maintain harvest of lobsters by the non-trap fishery within the historical proportion of total coastal lobster landings. The establishment of a total allowable catch (TAC) level or TAC target is identified as one of several alternative management measures in Section III.5.

(1) Effects on Lobster

See Section III.3.A

(2) Effects on Environment

See Section III.3.A

(3) Effects on Marine Mammals and Sea Turtles

See Section III.3.A

(4) Social/Cultural and Economic Impacts

This alternative would prevent a proliferation in harvest of American lobster by methods other than pots or traps. During the years 1994-1996, this harvest represented 1.8 percent, 3.0 percent, and 1.7 percent of total lobster landings (see Section IV.4). Accordingly, historical levels of harvest are not anticipated to be substantively impacted under this alternative, resulting in no net

decrease in revenues for 89% of participants in this fishery (see Section V for economic analysis).

C. Alternative 3: Ban Fishing for and Possession of Lobster

This alternative would prohibit the fishing for and possession of lobster in the EEZ by all methods of fishing for an extended period of time until lobster stocks recover throughout their range. See discussion of this alternative relating to the trap/pot fishery in Section III.2.F.

(1) Effects on Lobster

See Section III.2.F. A ban on fishing for lobster by mobile gear vessels would also have some unquantifiable benefit in increasing survival of lobsters that would otherwise have been harvested and/or returned to the water due to minimum size regulations. Previous studies on impacts of mobile gear on lobster injury and/or survival have been inconclusive; frequency of injury ranged from seven percent to seventy-five percent of captured lobsters and primarily involved loss or damage to the chelae (claws). Rate of injury has been demonstrated to be higher during the lobster molting season.

(2) Effects on Environment

See Section III.2.F.

(3) Effects on Marine Mammals and Sea Turtles

Since protected species have been taken in non-trap gear types used to target lobster, closure of the EEZ to these gear types for an extended period of time would provide maximum protection from entanglement risk presented by non-trap gear targeting lobster in EEZ waters during that period. Under this alternative, entanglement risk would be likely increased in territorial waters -- in particular just inside the 3-mile line -- due to potential influx from the EEZ of any gear types known to entangle protected species. These effects would be minimal at first because there will be limited space available in state waters for additional effort, but non-trap effort could increase in the latter years of the trap reduction plan as the concentration of trap gear decreases in state waters. Other effects of increased non-trap effort in state waters could include increased frequency of gear conflicts, gear snarls and lost gear resulting in ghost gear and consequent increases in entanglement risks and effects on the habitat itself.

(4) Social/Cultural and Economic Impacts

See Section III.2.F. This option would prohibit fishing for, and retention of lobsters taken by gear other than pots or traps in the EEZ. Harvest by this sector accounts for approximately 2.2% of total annual lobster landings. It would impact notably mobile gears (trawls and dredges), but also other gear types as well, including floating traps, diving gear, longline, handline, and gill net. During the 1996 calendar year, 901 federal lobster permit holders utilized mobile gear to harvest

finfish or shellfish; of these, approximately 21 vessels (2.3%) would likely be severely impacted by an EEZ closure to lobster harvest (see Section V).

A majority of federal lobster permit holders also possess federal fishing permits for scup, black sea bass, summer flounder, sea scallops, and squid/mackerel/butterfish. Regulations to prohibit capture of lobster by mobile gear could concurrently impose restrictions and economic consequences in other fisheries which harvest lobster as a bycatch.

4. Other Measures

In addition to the previously listed alternatives, the following lobster management measures are presented for public comment.

Prohibition on Spearing Lobsters

This regulation has been recommended by ASMFC, and would prohibit the possession of lobster which has an outer shell which has been speared. This prohibition was identified as a required regulation in state waters upon implementation of Amendment 3 to the CFMP on December 12, 1997. Public comments are requested on the applicability of this regulation in the EEZ.

Permit Requirements for Vessels

The existing moratorium on new entrants in the EEZ lobster fishery would be extended through December 31, 2003. To be eligible to renew or apply for a lobster permit, a vessel must have been issued a limited access American lobster permit for the preceding year, in accordance with the eligibility criteria specified in 50 CFR Part 649.

Mandatory Reporting

All vessels taking and landing for sale any lobsters shall record, on appropriate forms, statistics which may include, but not be limited to, information describing the weight and/or number of lobsters landed, the number of traps/pots hauled (or number and duration of tows), and area or region fished, by day or trip (whichever is longer). Similarly, reporting by dealers (e.g., during 1999-2000) who purchase lobster from any vessel holding a lobster permit may be required to submit a monthly summary of purchases on a vessel by vessel basis. In later years (e.g., during 2001-2002), this requirement may be expanded to provide vessel by vessel trip level data. These reporting requirements would also apply to species purchased by these dealers from other fisheries which have a high volume of inshore trips. These would include sea urchins and other shellfish. Dealers holding other federal permits currently required to report trip level data may be relieved of this requirement for lobster pot trips and would fall under the requirements for purchases from specific gear types.

As discussed in Section II.1 of this EIS, mandatory reporting at the vessel and dealer level on a

trip by trip basis is an essential component for monitoring the eventual success of fishery management measures. The associated reporting requirements for such a program from a coastwide state/federal perspective are currently being developed under the auspices of ASMFC's Atlantic Coastal Cooperative Statistics Program.

Minimum Carapace Length (Gauge Size) Increase

Amendment 3 to the CFMP recommends that the Secretary initiate discussions with the Canadian government concerning coordination of future gauge size changes.

5. Adjustments to Management Measures

NMFS, through consultation with ASMFC and with other scientific and public input, shall continue to monitor the effectiveness of the stock rebuilding efforts. On at least an annual basis, a Lobster Scientific Monitoring Committee (LSMC) will review annual size composition of coastal lobster landings and other available information relating to the status of American lobster stocks and may provide reports to the Regional Administrator, based on a most recent Annual Status of the Resource Review (ASRR). The purpose of the ASRR is to ensure the timely assessment of American lobster stocks in collaboration with NMFS Northeast Region's Stock Assessment Review Committee (see Section IV.3 of this EIS for a more detailed discussion of lobster stock assessment). A further description and charge of the LSMC will be described in the Final EIS. The LSMC may, over time, analyze the extent to which the objectives of lobster management in the EEZ as well as throughout the species range are being achieved and may make recommendations to the Regional Administrator for further management actions, as appropriate.

Area Specific Management Measures

Area management is a valid management approach in the lobster industry during the stock rebuilding period. Area management would require the development of a stock rebuilding program in the EEZ and complementary regulations in adjacent state waters, e.g., for the management identified in Amendment 3 to ASMFC's CFMP. The ability of NMFS to consider area management alternatives which encompass management areas comprised of both state and federal waters will necessarily depend upon: (1) the willingness of ASMFC and the states to commit to credible measures to reduce fishing mortality and end overfishing, and (2) assistance in the administration, cost, and enforcement of proposed and essential area management regulations. The management unit for American Lobster is the entire U.S. portion of the Northwest Atlantic Ocean and its adjacent inshore waters where lobsters are found, from Maine through North Carolina.

NMFS may in consultation with the ASMFC and states, receive advice from regional industry groups to address local issues. These regional groups (e.g., the conservation management teams referenced in the CFMP) may evaluate the effectiveness of management measures in their respective areas and may make recommendations to NMFS.

The regional industry groups may maintain a consultative relationship with the LSMC. They may report the extent to which lobster management objectives in the EEZ and/or species range are being achieved and may make recommendations for further management actions. If the recommendations are to replace existing EEZ measures with area specific alternatives, the recommendations will be evaluated for conservation equivalency to meet the goals of stock rebuilding. Such alternatives may come from one or more of the following categories:

(1) Minimum-size changes;
(2) A maximum-size limit;
(3) Trap limits;
(4) Seasonal closures of one or more management areas;
(5) Closed areas or zones within a management area;
(6) Restrictions on allowable fishing time;
(7) Restrictions on allowable catches or "target" harvest levels (e.g., total allowable catch by gear type);
(8) Permitting restrictions;
(9) Additional restrictions on gear;
(10) Overfishing definition;
(11) Adjustments to the area management scheme;
(12) Limitations on participation in the fishery; and
(13) Any other restrictions included in this action implemented under Section 804 of the ACFCMA, which may be designated for the purpose of reducing or controlling fishing mortality rates.

IV. AFFECTED ENVIRONMENT

1. Introduction

The affected environment was fully described in 1994 as a part of Amendment 5 to the NEFMC's FMP. Many of the following sections are not changed or updated since that amendment, and are noted in each section. Several significant changes or potential changes are:

- a review of American lobster habitat requirements
- a review of the population dynamics of American lobster
- an updated description of the lobster fishery
- an updated reference on marine mammal and sea turtle population status and review of recent protected species management actions which affect the lobster fishery.

2. Physical Environment

The physical environment of the American lobster is the same as that described in Section VIII.B of the NEFMC's FMP Amendment 5. A review of habitat requirements for this species and its responses to contaminant exposures was published in July 1994. This review concluded that lobsters respond differently to a variety of environmental conditions and contaminants based upon life stage. Larvae are generally less tolerant than juveniles and adults to environmental extremes or contaminant exposure. This review summarized literature on (1) habitat requirements of the American lobster, (2) effects of various contaminants on lobster biology as shown in laboratory and field exposures, and (3) contaminant concentrations measured in tissues of field-collected animals. This publication, NOAA Technical Memorandum NMFS-NE-105, is available from the Research Communications Unit, NMFS Northeast Fisheries Science Center, Woods Hole, MA.

If federal lobster management authority is maintained under the MSA, a description of essential fish habitat (EFH) must be included by October 11, 1998 in the NEFMC's FMP for American lobster under the provisions of the SFA. This description will identify American lobster EFH, minimize adverse effects on EFH caused by fishing, and identify other actions to encourage habitat conservation and management. The overall goal of the EFH provisions is to facilitate an ecosystem-based approach to fishery management, whereby habitat protection and harvest management are coordinated to enhance the sustainability of marine fisheries.

3. Biological Environment

The biological environment of the American lobster is similar to that described in Section VIII.C of the NEFMC's FMP Amendment 5.

- **Stock Assessment**

  An updated stock assessment on American lobster has since been conducted in June 1996 (Stock Assessment Workshop No. 22) by state and federal scientists. This workshop concluded that the American lobster resource is overfished throughout its range, with a high risk of a sharp decline in resource abundance in all three stock assessment areas. In July 1996, a report on the population dynamics of American lobster, prepared by an independent panel of stock assessment experts ("The Bannister Report"), confirmed the overfished status of American lobster stocks and advocated a reduction of fishing effort to minimize the potential for stock collapse. The panel concluded that the increase in United States landings is most likely due to a combination of increased fishing effort (including intensified fishing on previously lightly exploited offshore stocks) and increased recruitment. The increased recruitment levels may be due to favorable temperature conditions, but the precise effects (whether on for example growth, age of maturity, larval survival, or extent of settlement) have not been elaborated. However, fishing mortality is high enough for the lobster fishery to be considered overfished throughout its range by definition, and despite the recent increase in lobster abundance, fishing is removing an unacceptably high proportion of each

recruitment (year class).

A difficulty in lobster management is that a stock collapse or fishery failure would only be detectable five or six years later because of the time taken for lobsters to reach legal size. Evidence from case studies in other fisheries demonstrates that it is too dangerous and costly to wait until recruitment collapses, then try to reduce effort and rebuild the stock. The panel concluded that pragmatic action to reduce fishing effort immediately in the lobster fishery will help reduce the risk of stock collapse, and help preserve existing social and economic order in the lobster fishery.

- **Relationship to Other Species**

  - **Bycatch**

    Bycatch of black sea bass, scup, jonah crab, red crab, and conger eel are associated either directly or indirectly with the lobster trap fisheries. This bycatch is further described in Section IV.4 of this draft EIS.

  - **Marine Mammals and Sea Turtles**

Current References for Population Status and Impact Analyses

Entanglements of several species of marine mammals and sea turtles in lobster pot gear have been documented. Marine mammal species known to become entangled in lobster gear include the northern right whale (*Eubalaena glacialis)*, humpback whale (*Megaptera novaeangliae)*, fin whale (*Balaenoptera physalus)*, minke whale (*Balaenoptera acutorostrata*), blue whale (*Balaenoptera musculus*), sperm whale (*Physeter catodon*), pilot whale (*Globicephala melaena*), and harbor seal (*Phoca vitulina*). Sea turtle species known to become entangled in lobster pot gear include the leatherback turtle (*Dermochelys coriacea*) and loggerhead turtle (*Caretta caretta*). Several protected species status reviews and environmental impact documents prepared by regulatory agencies have bearing on this assessment of the potential impacts of the possible lobster management actions under ACFCMA on marine mammals and sea turtles. Those analyses are listed below and incorporated by reference.

Recent Population Status Reviews

Pursuant to Section 117 of the Marine Mammal Protection Act (MMPA), NMFS has prepared a stock assessment report for all marine mammal species in the U.S. Atlantic Ocean and Gulf of Mexico. The initial stock assessments were presented in Blaylock, *et al.* (1995) and are updated in Waring, *et al. (1997)*. The report presents information on stock definition and geographic range, population size and productivity rates, and known impacts.

The most recent information on sea turtle status is contained in the 1995 and 1997 status reviews of listed turtles prepared jointly by NMFS and the U.S. Fish and Wildlife Service (NMFS and USFWS 1995 and 1997).

Protected Species Impact Analyses

An assessment of impacts of the lobster fishery on endangered and threatened species of whales, sea turtles, and fish was presented in the draft supplemental environmental impact statement prepared by the NEFMC and subsequent NMFS Biological Opinion regarding Amendment 5 to the lobster FMP (NEFMC 1994 and NMFS 1994, respectively). Additional discussion was provided in the environmental assessment (EA) and Regulatory Impact Review prepared regarding the proposed rule to withdraw the federal lobster FMP (NMFS 1996a), the EA prepared for the emergency Marine Mammal Protection Act (MMPA) regulations restricting the lobster pot fishery in the northeast right whale critical habitat areas (NMFS 1997a), and the EA and subsequent Biological Opinion prepared for the Atlantic Large Whale Take Reduction Plan (NMFS 1997b and c, respectively) interim final rule.

Impact of Protected Species Management Actions on the American Lobster Fishery

Endangered Species Management

Pursuant to its responsibilities under Section 7 of the Endangered Species Act of 1973 (ESA), the National Marine Fisheries Service has conducted several ESA consultations on the lobster fishery as administered under the Magnuson-Stevens Fishery Conservation and Management Act in the American lobster fishery management plan. These consultations assessed the impacts of federal lobster management actions on endangered and threatened species of whales, sea turtles, and fish under NMFS jurisdiction as well as impacts on critical habitat areas designated for the northern right whale. NMFS has determined that the operation of the lobster pot fishery has resulted in takes of endangered and threatened whales and sea turtles. At this time, no regulations have been issued explicitly to address impacts of the lobster fishery on sea turtles; however, regulatory action has been taken to protect large whales.

The Section 7 consultation on Amendment 5 to the lobster FMP was concluded with a Biological Opinion issued on March 23, 1994. That opinion stated that the lobster pot fishery may affect but was not likely to jeopardize the endangered and threatened species of whales, sea turtles, and fish under NMFS jurisdiction. In 1996, the Section 7 consultation was reinitiated based on new information regarding impacts to the right whale population. On December 13, 1996, NMFS completed a Section 7 consultation on the lobster FMP which concluded that the fishery was likely to jeopardize the continued existence of the northern right whale. This consultation required NMFS to implement a reasonable and prudent alternative to remove the threat of jeopardy from the lobster fishery. On April 4, 1997, NMFS issued emergency regulations to restrict the lobster fishery in the right whale critical habitat areas designated in Cape Cod Bay and the Great South Channel during periods of peak right whale abundance. The emergency measures

were incorporated in MMPA rulemaking described below; therefore, impacts from these measures on the lobster fishery are outlined in that discussion.

The December 13, 1996, consultation required that NMFS re-evaluate the impacts of the fishery if any right whale entanglements in lobster gear occurred. In June 1997, a right whale became entangled in the buoy line of an offshore lobster pot trawl. Therefore, the ESA Section 7 consultation has been reinitiated. In addition to the recent entanglement, the consultation will consider the following: 1) assessment of impacts from the final rule to withdraw the federal lobster FMP from the MSA, 2) actions to transfer lobster management authority to regulations issued under the ACFCMA, and 3) new information on the status of endangered and threatened species under NMFS jurisdiction. Although the conclusion from that consultation is not available at this time, NMFS anticipates that the new lobster management scheme will benefit right whales, as well as other protected species, by reducing the amount of lobster pot gear in the ocean and consequently reducing the risk of entanglement.

It is important to note that differences in seasonal distribution patterns between marine mammals and sea turtles may result in different entanglement rates in any given month. For example, the most restrictive measures designed to protect northern right whales have been implemented in critical habitat areas such as Cape Cod Bay during the winter and early spring, when right whales are most likely to be in the area in significant numbers. The concentration of lobster pot gear in the Bay during that time is low relative to other times of the year. However, sea turtle abundance in the Bay is greatest in the summer and early fall, when lobster gear is at a much higher density. Thus, conservation measures implemented in any given month will not have uniform benefits to all protected species.

Other Marine Mammal Management Issues

As required by Section 118 of the MMPA, NMFS issues an annual List of Fisheries (LOF), which classifies U.S. fisheries according to the rate of serious injury and mortality of marine mammal stocks incidental to each fishery. Rates are quantified relative to the Potential Biological Removal (PBR) level assigned for each mammal stock. (The PBR is a number of animals which can be removed from a stock annually by human activities without preventing that stock from reaching or maintaining its optimum sustainable population size.) Fisheries are placed in one of three categories, with Category I representing the highest level of take (50% or more of the PBR). In the 1997 LOF, NMFS determined that the operation of the lobster pot fishery resulted in serious injury or mortality of northern right whales, humpback whales, and minke whales during the 1990-1994 period. Entanglements of other whale species in lobster pot gear have been documented prior to 1990 and after 1994. The serious injury and mortality rate of right whales during the 1990-1994 period exceeded 50% of the PBR; consequently, the fishery was elevated from Category III to Category I in the 1997 List of Fisheries.

The 1994 amendments to the MMPA required that NMFS develop take reduction plans for strategic (“strategic” refers to stocks with a serious injury and mortality rate in excess of PBR

and/or endangered species) marine mammal stocks interacting with Category I and II fisheries. That legislation also provided for the development of take reduction plans for non-strategic stocks in cases where a Category I fishery has a high level of serious injury and mortality of a number of marine mammal stocks.

The annual rate of serious injury and mortality of right whales due to human activities exceeds the PBR. In addition, right, humpback, and fin whales are listed as endangered under the ESA. Therefore, these three stocks are listed as strategic stocks under the MMPA. Because these stocks are strategic and known to incur serious injury and mortality incidental to the lobster pot fishery, a take reduction process was initiated to address those interactions. Although the minke whale stock is not strategic at this time, NMFS included minke whales in the large whale take reduction process. As a result of that process, NMFS has issued an Atlantic Large Whale Take Reduction Plan (ALWTRP) to address entanglement of the western North Atlantic stocks of right, humpback, and fin whales and the Canadian/East Coast stock of minke whales in four U.S. East Coast fisheries, including the American lobster pot fishery. The interim final rule implementing the ALWTRP was published July 22, 1997; regulations in that plan affecting the lobster pot fishery are effective November 15, 1997. The ALWTRP incorporates previous actions taken under MMPA emergency action for Cape Cod Bay and the Great South Channel to implement ESA requirements.

As currently written, the ALWTRP regulations have minimal impact on the overall level of effort in the lobster fishery. However, the degree of impact in certain areas may change significantly if current regulations prove insufficient to reduce entanglement risk. NMFS will amend the ALWTRP regulations as needed when gear modifications which reduce entanglement risk are developed and/or as necessary to reach take reduction plan goals. However, lobster effort reduction and related impacts to the industry from those measures cannot be quantified at this time.

The impacts of the ALWTRP regulations on the lobster pot fishery were assessed in a final Environmental Assessment (EA) issued on July 15, 1997. Lobster conservation which would result from the ALWTRP actions was not specifically addressed in the EA. Conservation of the lobster resource from whale protection measures as currently implemented would primarily occur in the right whale critical habitat area in the Great South Channel, where lobster pot gear was prohibited during the April 1 - June 30 period under the emergency MMPA regulations and the ALWTRP regulations. Under the ALWTRP, gear modifications are required year-round in Cape Cod Bay, with the most restrictive measures in place during the January 1 through May 15 period. The gear modifications are not expected to directly affect the harvest capacity of the lobster pot fishery, primarily because gear modifications include changes in rigging of the lines and buoys associated with the pots rather than changes in the pots themselves. However, some lobster conservation would occur if vessels elected not to fish during the January-May period due to disruption in fishing operations resulting from re-rigging gear to comply with the ALWTRP regulations. The EAs prepared for the MMPA emergency regulations and the ALWTRP interim final rule suggested that very little lobster pot fishing occurs during the January 1 - May 15 period

in Cape Cod Bay or the April 1 - June 30 period in the Great South Channel. Therefore impact on overall lobster conservation from the current whale conservation actions is expected to be minimal.

The ALWTRP contains a contingency measure which could result in expansion or contraction of critical habitat restrictions if right whale distribution changes significantly in those areas and times. Additionally, if right whales are entangled in exempted gear in the critical habitat areas, those areas could be closed during high risk periods until more effective gear modifications are developed. It is not possible to assess such impacts at this time; however, the effects would be short in duration and limited to the critical habitat areas.

Other marine mammal protection measures may indirectly affect the lobster industry through restrictions on gear types such as sink gillnet gear which is used in some areas to catch bait for traps. NMFS has issued additional regulations under the ALWTRP to address entanglements of whales in gillnet gear and Magnuson Act regulations to protect northern right whales and harbor porpoise. The regulations impacting the use of gillnet gear may affect the use of bait gillnets by lobster pot fishermen in some areas of the Gulf of Maine, Great South Channel, and southern New England. The ALWTRP contains no restrictions on trawl fisheries, so the mobile gear effort would not be negatively impacted by whale conservation measures.

Early in 1997, the Commonwealth of Massachusetts also implemented restrictions on lobster pot gear in the state water portion of the Cape Cod Bay critical habitat during the January 1 - May 15 period. The regulations are currently similar to the ALWTRP regulations but are undergoing revision prior to the 1998 season. State regulations would impact state permit holders who also hold federal permits, although effects would be similar to those resulting from federal regulations during the January 1 - May 15 period. Massachusetts has also implemented gillnet restrictions for the purpose of right whale and/or harbor porpoise conservation, similar to those in the ALWTRP and the Magnuson-Stevens Act.

4. Human Activities

A description of human activities associated with American lobster management is presented in Section VIII.D of the NEFMC's FMP Amendment 5. The American lobster fixed gear fishery, as it relates to gear conflict in the Gulf of Maine, Georges Bank, and Southern New England is presented in Section 7.1.1.1.1 of the NEFMC's FMP Amendment 6, published in July 1996. A threshold analysis of economic impacts on small businesses of possible federal lobster management actions is presented in Section V (Regulatory Impact Review) of this draft EIS. A discussion of social/cultural and economic impacts is incorporated in the description of various management options outlined in Section III (e.g., Section III.2.C.[4]).

◦ **Description of the Lobster Fishery**

◦◦ **Offshore Lobster Trap Fishery**

An updated description of the American lobster industry, including an overview of the offshore lobster fishery, is presented on pages 18-22 of the Draft Large Whale Take Reduction Plan (ALWTRT 1997). There continues to be a large fleet of special purpose offshore lobster trip boats from Maine to Rhode Island that target lobster offshore. There are approximately 100 vessels fishing lobster traps offshore, mainly in the canyon areas. These boats have a crew of 4 or 5; vessels that work between inshore and offshore areas generally have a crew of 2-3 people. While inshore lobster boats may fish either single traps, pairs of traps, or "trawls" containing multiple traps, offshore lobster boats use trawls generally from 40-60 traps in length. Offshore lobster fishing is a year-round business, although some boats have concentrated on crab trapping during winter months in recent years. Some offshore boats bring their traps ashore during the winter, some concentrate their fishing on the narrow edge of the continental shelf, and some fish for crabs in the mid-shelf region. Offshore boats generally have from 1,500 to 3,000 traps in the water, with some boats fishing 5,000 or more traps. Traps are hauled once per week or more when the lobsters are potting well, and somewhat less during the winter due to weather constraints.

◦◦ **Federal Lobster Permit Holders**

Both 1997 and 1996 permit data are provided here. Data for 1997 are the most current, but data for 1996 are the most current that can be linked with a full year of landings data.

As of December, 1997, 3,153 vessel owners held federal lobster permits. Of these 3,117 held only commercial lobster permits, 16 held only recreation lobster permits, and 20 held both commercial and recreational lobster permits. The majority of these are associated with smaller vessels (see Tables IV.1 and IV.2), and the bulk are identified with Maine or Massachusetts as the primary port of landing, followed distantly by Rhode Island, and then New Jersey, New York and New Hampshire (see Table IV.3). Of these 3,153 vessels, 1,962 also hold at least one other federal permit (see Tables IV.4 and IV.5)

Table IV.1 Length Data for Vessels with Commercial Federal Lobster Permits

	Avg. Length for All Vessels	Number of Vessels in Various Length Categories				
		0-30 ft	31-45 ft	46-60 ft	61-100 ft	101+ ft
1997	44 feet	387	1923	275	555	13
1996	44 feet	480	2049	297	621	18

Table IV.2 Tonnage Data for Vessels with Commercial Federal Lobster Permits

	Avg. Tonnage for All Vessels	Number of Vessels in Various Tonnage Categories			
		0-4 GRT	5-50 GRT	51-150 GRT	151-500 GRT
1997	36 GRT	262	2276	435	180
1996	39 GRT	319	2455	489	201

Table IV.3 Number of Vessels by Primary Port State holding Commercial Federal Lobster Permits

	CT	DE	MA	MD	ME	NC	NH	NJ	NY	PA	RI	VA	Other
1997	44	12	1050	17	1201	42	103	174	147	3	301	51	8
1996	45	12	1172	19	1342	45	112	173	154	4	327	54	4

Table IV.4 Numbers of Commercial Federal Lobster Permitted Vessels holding Different Numbers of Other Federal Permits

	0 other permits	1 other permit	2 other permits	3 other permits	4 other permits	5 other permits	6 other permits
1997	1169	414	420	385	266	221	278
1996	1083	574	419	664	743	0	0

N.B. For this analysis only Multispecies, Summer Flounder, Scallops, Squid/Mackerel/Butterfish, Scup, and Black Sea Bass permits were examined, since surfclam and ocean quahog permits provide no harvest rights. Thus, the maximum number of other permits it is possible to hold is 6. Black Sea Bass and Scup permits, however were newly created in 1997.

Table IV.5 Numbers of Commercial Federal Lobster Permitted Vessels holding Different Types of Other Federal Permits

	Multispecies	Summer Flounder	Squid/ Mackerel/ Butterfish	Atlantic Sea Scallops	Black Sea Bass	Scup
1997	1762	760	1157	1437	477	653
1996	2192	822	1734	1582	0	0

Breaking out mobile gear vessels versus trap vessels requires using data from 1995 and 1996. Mobile gear vessels were determined using 1996 commercial landings data. Trap vessels were determined using a 1995 review of lobster trap fishermen. These 1995 data were preferred over 1996 commercial landings data for this purpose, because the 1995 data provide numbers of traps set and these data are used in Sections III (social/cultural and economic impacts of management alternatives) and V (Regulatory Impact Review) of this draft EIS. Once the gear type was determined, permit data from 1996 were examined for all vessels of both gear types. Permit data from 1995 were used only for those trap vessels which possessed a permit in 1995 (when the trap review was conducted) but no permit in 1996.

In 1996, at least 901 mobile gear vessels possessed American lobster permits. All had commercial category permits, and five also had recreational category permits. On average, as one would expect, the mobile gear fleet vessels are larger (Tables IV.6 and IV.7) than the trap vessels (Tables IV.10 and IV.11). The majority port states are Massachusetts, Maine, and Rhode Island (Table IV.8). The numbers of lobster mobile gear vessels with other federal permits are shown by species/FMP in Table IV.9.

Table IV.6 Length Data for Mobile Gear Vessels with 1996 Commercial Federal Lobster Permits

Avg. Length for All Mobile Gear Vessels	Number of Mobile Gear Vessels in Various Length Categories				
	0-30 ft	31-45 ft	46-60 ft	61-100 ft	101+ ft
58 feet	11	308	172	401	9

Table IV.7 Tonnage Data for Mobile Gear Vessels with 1996 Commercial Federal Lobster Permits

Avg. Tonnage for All Mobile Gear Vessels	Number of Mobile Gear Vessels in Various Tonnage Categories			
	0-4 GRT	5-50 GRT	51-150 GRT	151-500 GRT
73 GRT	11	437	345	108

Table IV.8 Number of Mobile Gear Vessels by Primary Port State holding 1996 Commercial Federal Lobster Permits

CT	MA	MD	ME	NC	NH	NJ	NY	RI	VA	Other
10	358	3	174	23	44	66	84	117	19	3

Table IV.9 Numbers of 1996 Commercial Federal Lobster Permitted Mobile Gear Vessels holding Different Types of Other Federal Permits

Multispecies	Summer Flounder	Squid/ Mackerel/ Butterfish	Atlantic Sea Scallops	Black Sea Bass	Scup
865	553	798	776	901	901

In 1996, 2114 trap gear vessels possessed American lobster permits. All had commercial category permits, and twelve also had recreational category permits. The vessels are small on average (Tables IV.10 and IV.11). The majority port states are Maine, then Massachusetts, followed distantly by Rhode Island (Table IV.8). The numbers of lobster trap vessels with other federal permits are shown by species/FMP in Table IV.13. Those trap vessels which reported the number of traps averaged 300 traps per vessel. The minimum reported was 0 traps and the maximum reported was 5500 traps. For more information on trap usage, see Section V.

Table IV.10 Length Data for Trap Vessels with 1996 Commercial Federal Lobster Permits

Avg. Length for All Trap Vessels	Number of Trap Vessels in Various Length Categories				
	0-30 ft	31-45 ft	46-60 ft	61-100 ft	101+ ft
39 feet	316	1489	148	159	1

Table IV.11 Tonnage Data for Trap Vessels with 1996 Commercial Federal Lobster Permits

Avg. Tonnage for All Trap Vessels	Number of Trap Vessels in Various Tonnage Categories			
	0-4 GRT	5-50 GRT	51-150 GRT	151-500 GRT
25 GRT	207	1729	138	38

Table IV.12 Number of Trap Vessels by Primary Port State holding 1996 Commercial Federal Lobster Permits

CT	DE	MA	MD	ME	NC	NH	NJ	NY	RI	VA	Other
26	8	729	16	872	3	65	97	75	212	10	1

Table IV.13 Numbers of 1996 Commercial Federal Lobster Permitted Trap Vessels holding Different Types of Other Federal Permits

Multispecies	Summer Flounder	Squid/ Mackerel/ Butterfish	Atlantic Sea Scallops	Black Sea Bass	Scup
1273	242	873	759	0	0

°° **Social/Cultural and Economic Factors**

The social/cultural and economic analyses contained in Amendment 5 to the American lobster FMP remain relevant. The offshore EEZ fishery has been further described by the ALWTRT (1997):

> In the 1970's and 1980's, many offshore trap vessels left their traps unattended for a month or two during the winter. There were several reasons for this; the boats tended to be smaller than they currently are, the offshore fishery was formerly more productive than it currently is during the summer months, and there was no real market for crabs, which is now the alternative fishing opportunity during the winter months. The practice of storing traps in certain safe areas for a period of time in the winter has diminished as the fishery has become more competitive and the crab market has provided an additional opportunity for vessel owners to continue to make use of their gear through the winter months. The offshore lobster trap fishing effort has increased slowly but steadily over the years.

Also, the nature of the fishery has been further described by McCay et. al. (1993) and Finlayson and McCay (1994). In the past 5 years, some participants in the offshore lobster fishery have diversified into black sea bass pots. Much is specialized targeting, and not bycatch in a directed lobster fishery (black sea bass, in general, is a minor bycatch from offshore and inshore lobster fishing and amounts to about 0.5% of landed value). Additional bycatch (species and/or) fisheries include Jonah crab, (about 2.5% of landed value) red crab, conger eel, conch and hagfish. From New Jersey to Virginia, the black sea bass fishery is dominated by a few large-scale, full time black sea bass/lobster specialists fishing 1,000-2,000 black sea bass pots and a similarly large number of lobster pots. This sector often alternates days fishing between black sea bass pots and lobster pots. A black sea bass pot fishery located in Nantucket Sound is managed by the State of Massachusetts.

In 1996, the fishery for American lobster in Northeast coastal states

retained its first place in ex-vessel revenues. The 1996 harvest of $242.2 million of lobster was a 13% increase over 1995. Maine accounted for 44% of the lobster harvest, Massachusetts for 27%, and New York for 14%. Major lobster ports include Point Judith and Newport, Rhode Island; Westport, New Bedford, Sandwich, Hyannis, and Gloucester, Massachusetts; and Newington, New Hampshire.

- **Trap vs. Nontrap Lobster Harvest**
  Data compiled by NMFS indicates that trap/pot gear during the years 1994-1996 comprised 95 percent, 93 percent, and 98 percent of total annual lobster landings, respectively. Similarly, annual harvest of lobster by methods other than pots or traps was 1.8 percent, 3.0 percent, and 1.7 percent of total annual landings during those years. The majority of nontrap harvest is taken by otter trawl; other methods include beam trawl, Danish seine, scallop dredge, floating trap, diving gear, longline, hand line, pound net, and gill net.

- **Recommendations for Further Research**

In addition to the research recommendations presented in Section VIII.D.5 of the NEFMC's FMP Amendment 5, the ASMFC identified additional American lobster research priorities in January 1997. These include, but are not limited to,:

- Stock identification studies, particularly as related to inshore/offshore components south of Georges Bank;
- Evaluation of information on lobster molting frequency and lobster growth, mortality, and recruitment among years and geographical areas;
- Enhanced sea sampling and/or port sampling of offshore catches for biological information; and
- A study of lobster v-notching practices undertaken by area fishermen to reduce uncertainty in estimation of biological reference points.

A complete listing of these research topics is presented in Special Report No. 62, "Prioritized Research Needs in Support of Interjurisdictional Fisheries Management", available from ASMFC, 1444 Eye Street, N.W., Sixth Floor, Washington, D.C. 20005.

V. REGULATORY IMPACT REVIEW

The Regulatory Impact Review (RIR) is part of the process of preparing and reviewing fishery management actions and provides a comprehensive review of the changes in net economic benefits to society associated with proposed regulatory actions. The RIR is designed to provide information to determine whether the proposed regulation is likely to be "economically significant", i.e. have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities. The analysis also provides a review of the problems and policy objectives promoting the regulatory proposal and an evaluation of the major alternative that could be used to solve the problems. The purpose of the analysis is to ensure that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost effective way.

1. Initial Regulatory Flexibility Analysis

The purpose of the Regulatory Flexibility Act (RFA) is to minimize the adverse impacts from burdensome regulations and record keeping requirements on small business, small organizations, and small government entities. This section (V.1) discusses the impacts specifically on the effects of the resource management action on small business entities.

NMFS standards for a finding of a significant economic impact on small businesses for RFA purposes are as follows: 5 percent loss of revenue for 20 percent of the participants; 10 percent increase in compliance costs for 20 percent of the participants; and 2 percent of the participants go out of business. A finding of significant impact would be appropriate if any one of these three thresholds are surpassed. The Small Business Administration defines a small business in the commercial fishing industry as a firm with gross revenues of up to $2.0 million. By this definition all vessels engaged in the Northeast American lobster fishery are considered to be small businesses.

A. Description of reasons why NMFS is modifying EEZ lobster regulations.

The need for action is described in this DEIS, see Section II.3.

B. A statement of the objectives and legal basis for the potential actions:

The objectives for federal regulatory action for lobsters in federal waters is discussed in Section II.1.

The legal basis for the potential actions are discussed in Section III.1, with additional background information provided in Section I.1, and Section I.2.

C. A description of reporting requirements, including to what groups reporting will be

required and skills required to meet the requirements.

A description of the reporting requirements and affected entities are described in Section VI.2 of this DEIS.

D. Identification of relevant rules that may be redundant.

This DEIS will not duplicate or make redundant any current rules.

E. A description of alternatives that could meet the objectives and the extent to which the action mitigates any economic impacts on small businesses.

A description of the alternatives is provided for the lobster trap sector in Section III.2. and for the non-trap sector in Section III.3.

F. A description of affected entities and an estimate of the number of affected firms.

The description of the affected entities and an estimate of the number of affected firms is discussed below in the threshold analysis. Although a preferred alternative has not been identified in this EIS, the following provides a threshold analysis to gauge the economic consequences of management actions determined to be necessary to end overfishing and rebuild the American lobster stock. For the trap sector a threshold analysis was performed for Alternative 3 (Section III.2.C.) and for the non-trap sector the threshold analysis was performed for Alternative 1 (Section III.3.A.). As a preferred alternative is identified and the Proposed Rule is drafted, this analysis will be reviewed and updated as necessary.

NMFS Threshold

NMFS standards for a finding of a significant economic impact on small businesses for Regulatory Flexibility Act (RFA) purposes are as follows: 5 percent loss of revenue for 20 percent of the participants; 10 percent increase in compliance costs for 20 percent of the participants; and 2 percent of the participants go out of business. A finding of significant impact would be appropriate if any one of these three thresholds are surpassed. The Small Business Administration defines a small business in the commercial fishing as a firm with gross revenues of up to $2.0 million. By this definition all vessels engaged in the Northeast American lobster fishery are considered to be small businesses.

The lobster fishery is prosecuted using mobile (trawl gear) and fixed gear (traps). Since management alternatives differ between these two gear groups the threshold analysis was performed separately for each gear group. Separate analyses are also justified because the trap sector targets lobster predominantly while the trawl sector is capable of limited targeting of lobster but usually takes lobster as a component or incidental catch of a mixed species fishery. Due to these targeting differences, management action could have quite different economic

impacts.

Threshold Analysis for Mobile Gear

The mobile gear management alternatives (with the possible exception of a possession ban) would not have a significant economic impact on the sector's participants due to the fact that the majority of these permit holders do not rely on lobster as their principal source of income. The methods used to estimate the impacts on mobile gear participants are described below.

For example, Alternative III.3.A would impose a possession limit of 100 lobsters per day up to a maximum of 500 lobsters per trip for vessels using mobile gear to harvest lobsters. The impact of this limit was evaluated by examining Northeast dealer data for the 1996 calendar year for all vessels using bottom trawl gear that also held a Federal commercial lobster permit. Dealer data does not report landings on a count basis nor does it record fishing time. To overcome these deficiencies two assumptions were required. First, it was assumed that the average weight of a trawl-caught lobster is one pound. A one pound lobster is approximately the weight of a lobster at its minimum legal size. Second, all landings were associated with one 24-hour period. These two assumptions are equivalent to a 100 pound possession limit for mobile gear fishing participants.

The trawl sector is known to land larger lobsters, on average, and would tend to retain only the largest lobsters when faced with a count limit. Also, trip duration for mobile gear vessels typically exceeds 24 hours in duration. Thus, the net effect of these two assumptions is to maximize the potential economic impact of the possible management action relative to the 1996 base, hence maximizing the likelihood that NMFS thresholds would be exceeded.

During the 1996 calendar year 1,228 vessels using trawl gear showed landings of at least one pound of some species. Of these vessels, 901 held a Federal commercial lobster permit. The revenue impacts on these vessels were estimated by comparing their actual 1996 gross revenues to revenues as constrained by the 500 pound/count possession limit. Based on this analysis and the threshold of a 5% reduction in gross revenues, 48 (5.3%) trawl vessels would be impacted by more than a 5% reduction in revenues. By contrast, 76% of all trawl vessels included in the analysis would not be impacted at all because their documented landings did not exceed the possession limit on any trips taken during the 1996 calendar year. Based on these findings, the threshold of a 5% reduction in gross revenues for more than 20% of participants is not exceeded.

In addition to the possession limit, management alternatives would also implement mandatory reporting. However, since the vast majority of trawl vessels are already subject to mandatory reporting, the action would not affect compliance costs for this gear group. Thus, compliance costs will not increase and the threshold of a 10% increase in compliance costs for more than 20% of participants is not exceeded. Further, given the finding that gross revenues for 76% of all mobile gear participants will not be reduced at all, that only 5.3% of vessels will have their revenues reduced by more than 5%, and the finding that compliance costs will not increase, the

third threshold of 2% of participants ceasing operations is very unlikely to be exceeded.

The preceding discussion indicates that none of NMFS' threshold standards are exceeded for a finding of a significant action for purposes of the RFA. Thus, the possible action may be certified to have no significant impact on the mobile gear sector of the American lobster fishery in the Northeast.

A similar threshold analysis was completed for the non-trap Alternative 3 (Section III.3.C) which would impose a possession limit of 500 lobsters on vessels using mobile gear (regardless of trip length) and that alternative was also found to have no significant impact on the mobile gear sector of the American lobster fishery in the Northeast. Specifically, gross revenues for 89% of all mobile gear participants will not be reduced at all, and only 2.3% of vessels will have their revenues reduced by more than 5%.

Threshold Analysis for Trap Gear

Any of the alternatives discussed in Section III.2 (except the "status quo" alternative) would likely have a significant impact on small entities operating in both the off-shore (Area 3) and near-shore EEZ lobster fishery. This determination is based on 1) a probable lag between the time frame for trap reductions and anticipated increases in catch, and 2) the likelihood that the magnitude of trap reductions will require substantive changes in business practices for a substantial number of small entities. The procedures used to make this determination are discussed below.

The last year for which data was voluntarily requested on traps fished by Federal permit holders was 1992. In the subsequent years 1993-1995, trap data was carried forward from 1992 and updated for new entrants to the lobster fishery or existing Federal permit holders who continued to provide adjustments to their 1992 trap data. The year 1995 was selected as the baseline for the threshold analysis. Alternative III.2.C is based upon setting of an initial trap cap followed by a scheduled reduction in traps over the five year rebuilding period. A trap cap will still permit expansion in the number of traps fished by any operating unit fishing fewer traps than the cap allows. For purposes of analysis it was assumed that the distribution of traps fished below the trap cap would not change. To the extent that small entities do increase their numbers of traps fished up to the prevailing trap cap, the estimated reductions in traps will be less than that reported. In contrast, the 1995 baseline is likely to provide a lower bound estimate for the numbers of traps currently being fished in Federal waters. The total number of traps fished as well as number fished per firm has likely increased since 1995. For this reason, the actual reduction in traps fished as well as the actual number of affected entities could be higher than that reported herein.

There were 2,114 Federal lobster permit holders that were identified as using primarily trap gear to harvest lobsters. Of these permit holders, 827 reported fishing more than zero traps. The remaining 1,287 either reported fishing zero traps or did not provide data. Since mandatory reporting of trap counts has never been required of Federal lobster permit holders, non-responses

(or zero response for that matter) cannot be considered equivalent to a negative report (i.e., no activity in lobster trap fishing). Therefore, the 827 permit holders that did report fishing some traps were assumed to be representative of the population of permit holders. The results of the threshold analysis for these 827 vessels was assumed to hold for the remaining vessels.

Most management alternatives identified in Section III.2.C also distinguish between two EEZ lobster fisheries; a near-shore (3-30 miles from shore) fishery taking daily trips in both State and EEZ waters, and an offshore fishery taking multiple-day trips. Although not always the case, it is generally recognized that vessels in excess of 50 feet are required to prosecute the offshore fishery and comprise the majority of these participants. Due to the difference in trap cap and subsequent trap reduction schedules as well as the recognized operational differences in terms of scale of operation, the two vessel groups were treated separately for purposes of the threshold analysis.

Near-Shore Fishery

In 1995 there were 1,864 permit holders with vessel lengths 49 feet or less. Of these vessels, 703 reported having fished one or more traps. The discussion to follow refers only to these reporting vessels. Year one of Alternative III.2.C would establish a cap of 800 traps. Of the near-shore participants 520 (74%) fished fewer than 800 traps in 1995 and would not, therefore, be affected by the first year's cap. By contrast 183 (26.0%) participants fished more than 800 traps in 1995 and would be affected by the first year's cap. By the end of the 5 year rebuilding period the trap cap will have been reduced to 480 traps; a 37.9% reduction from the initial cap. The annual schedule of trap cap reductions and the estimated impact on small entities is reported in Table V.1.

Table V.1: Summary of Annual Trap Cap Reductions and Affected Small Entities in the Near-Shore Fishery.

Year	Cap	Total Reported Traps	Reduction in Traps	Affected Vessels
1995	NA	468,926	0.0%	0.0%
1999	800	394,566	15.9%	26.0%
2000	720	374,836	20.1%	36.4%
2001	640	352,406	24.8%	41.8%
2002	560	325,001	30.7%	55.9%
2003	480	291,146	37.9%	70.1%

At 480 traps, the reduction schedule would eventually affect 70.1% of Federally permitted small entities engaged in the near-shore EEZ lobster fishery. The relationship between traps and catch is generally recognized as being nonlinear and multidimensional. Within certain limits, adjustments to days fished, trap hauls, crew, soak times, and trap configurations may be adopted to mitigate the loss in traps. These adaptive strategies, together with an anticipated reduction in

fishing mortality rates, will likely result in increased catch per unit effort (i.e., catch per trap hauled). However, given the difference in timing between the trap reductions and the anticipated longer term increases in catch, it seems likely that a substantial number of individual entities will experience reductions in total revenues that exceed 5% for at least some portion of the 5 year reduction schedule. Even if vessels find ways of maintaining gross revenues, it will likely require substantial changes in the way in which they organize their business. Therefore, based on the likelihood that a substantial number of vessels will experience a reduction in revenues in excess of the 5% threshold, and that trap reductions will likely require significant changes in business operations for a substantial number of entities, the potential action is determined to have a significant economic impact on small Federally permitted entities in the near-shore lobster fishery.

Offshore Fishery

In 1995 there were 250 permit holders with vessel lengths 50 feet or more. Of these vessels, 124 reported having fished one or more traps. The discussion to follow refers only to these reporting vessels. Year one of the potential action would establish a cap of 2,000 traps. Of the offshore participants 104 (83.9%) fished fewer than 2,000 traps in 1995 and would not, therefore, be affected by the first year's cap. By contrast 20 (16.1%) participants fished more than 2,000 traps in 1995 and would be affected by the first year's cap. By the end of the 5 year rebuilding period the trap cap will have been reduced to 1,200 traps; a 32.7% reduction from the initial cap. The annual schedule of trap cap reductions and their impact on small entities is reported in Table V.2.

Table V.2: Summary of Annual Trap Cap Reductions and Affected Small Entities in the Off-Shore Fishery.

Year	Trap Cap	Total Reported Traps	Reduction in Traps (%)	Affected Vessels (%)
1995	NA	163,811		0.0%
1999	2,000	141,411	13.7%	24.2%
2000	1,800	135,811	17.1%	27.4%
2001	1,600	129,261	21.1%	41.1%
2002	1,400	120,501	26.4%	41.4%
2003	1,200	110,301	32.7%	47.6%

At 1,200 traps, the reduction schedule would eventually affect 47.6% of Federally permitted small entities engaged in the offshore EEZ lobster fishery. The relationship between traps and catch is generally recognized as being nonlinear and multidimensional. Within certain limits, adjustments to days fished, trap hauls, crew, soak times, and trap configurations may be adopted to mitigate the loss in traps. These adaptive strategies, together with an anticipated reduction in fishing mortality rates, will likely result in increased catch per unit effort (i.e., catch per trap hauled). However, given the difference in timing between the trap reductions and the anticipated longer term increases in catch, it seems likely that a substantial number of individual entities will

experience reductions in total revenues that exceed 5% for at least some portion of the 5 year reduction schedule. Even if vessels find ways of maintaining gross revenues, it will likely require substantial changes in the way in which they organize their business. Therefore, based on the likelihood that a substantial number of vessels will experience a reduction in revenues in excess of the 5% threshold, and that trap reductions will likely require significant changes in business operations for a substantial number of entities, the potential action is determined to have a significant economic impact on small Federally permitted entities in the off-shore lobster fishery.

Lobster Buffer Zone

A ten mile wide lobster Buffer Zone extending from the U.S./Canada border throughout the range of the resource has been identified as a potential management measure. While existing federal lobster harvest and revenue data does not allow adequate resolution on fishing vessel locations to provide a detailed quantitative analysis of the impact of a ten mile Lobster Buffer Zone, the LBZ will facilitate monitoring and enforcement of the Nearshore (Zone A & B) and Offshore (Zone C) Lobster Fishing Zone trap reduction regulations. In addition, the elimination of lobster pot gear from the Buffer Zone will directly reduce the risk of entanglement to whales and sea turtles within the zone. For further details on Buffer Zone effects on marine mammals and sea turtles, see Section III.2.C.3. Since the LBZ will be freed from lobster traps, it could become, or return to, lobster refuge. The practice of setting out large numbers of traps over large areas would be eliminated in the LBZ, which in addition to enhancing the availability of undisturbed habitat, would reduce the prevalence of "ghost gear" which is often the result of user conflicts and/or storms.

2. Executive Order 12866:

Executive Order 12866 "Regulatory Planning and Review", was signed on September 30, 1993 and established guidelines for promulgating new regulations and reviewing existing regulations. While the executive order covers a variety of regulatory policy considerations, the benefits and costs of regulatory actions are a prominent concern. The regulatory philosophy stresses that, in deciding whether and how to regulate, agencies should assess all costs and benefits of all regulatory alternatives. In choosing among regulatory approaches, the philosophy is to choose those approaches that maximize net benefits to society.

The regulatory principles in E.O. 12866 emphasize careful identification of the problem to be addressed. The agency is to identify and assess alternatives to direct regulation, including economic incentives, such as user fees or marketable permits, to encourage the desired behavior. When an agency determines that a regulation is the best available method of achieving the regulatory objective, it shall design its regulations in the most cost-effective manner to achieve the regulatory objective. Each agency shall assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Each agency shall base its decisions on the best reasonably obtainable scientific,

technical, economic, and other information concerning the need for, and consequences of , the intended regulation.

Executive Order 12866 requires that the Office of Management and Budget review potential regulatory programs that are considered to be "significant". A "significant regulatory action" is one that is likely to: (1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

A. Determination of "Economically Significant"

The analysis provided shows that if the evaluated management measures were enacted, this regulatory action would not constitute a "major rule" under the criteria described in E.O. 12866.

A regulatory program is "economically significant" if it is likely to result in an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities. This action should not have an annual effect of $100 million or more. The exvessel value of American lobster landings in 1996 harvested from EEZ waters amounted to $50.7 million The exvessel value of lobster harvested from the EEZ has fluctuated between $25.9 million and $50.7 million over the past 6 years. Landings of American lobster from the EEZ have averaged 10.1 million pounds valued at $36.2 million over the past six years from 1991-1996.

Other E.O. 12866 Requirements

This action will not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency.

This action will not materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof. This action is not expected to lead to an increase in costs or prices to consumers, nor will this action have significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of U.S. based enterprises to compete with foreign based enterprises in domestic or export markets.

This action will not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

B. Benefits and Costs

The following section provides a benefits and costs analysis required under Executive Order 12866 for potential regulations.

Methods

The yield and egg-per-recruit model used here was originally developed by Fogarty and Idoine and has subsequently been modified by Idoine and Rago to incorporate additional biological realism, and evaluation of more complicated management options. In the context of lobster assessment, the model has been used to evaluate the efficacy of fishery management measures such as changes in the minimum size limit. Under a given set of regulatory measures, the model can be used to estimate the percent of maximum lifetime yield per recruit (YPR) and egg production per recruit (EPR) that would occur under varying levels of realized fishing mortality (F_{real}). In general terms, the relationships between EPR, YPR and realized F are expressed as:

$$YPR = Y/EPR(F_{real} \mid \underline{\theta}) \text{ and } EPR = Y/EPR(F_{real} \mid \underline{\theta})$$

where $\underline{\theta}$ represents a set of parameters for growth, reproduction and natural mortality and $Y/EPR(.)$ represents the yield and egg-per- recruit model. A summary of the relationship between EPR, YPR and realized F is provided in Table V.3.

Another output of the YPR/EPR model is the relationship between nominal and realized fishing mortality. The capture process is modeled with the classic catch equation but the magnitude of the actual mortality realized is modified by various regulations. For example, prohibitions on the landings of berried females and v-notched lobsters diminish the effectiveness of nominal input levels of fishing mortality. Thus realized levels of fishing mortality are always less than nominal levels. If nominal fishing mortality is proportional to the magnitude of fishing effort, then the relationship between nominal F and realized F may be considered as proxy measure of the relationship between effort and fishing mortality. As demonstrated in SARC 22 the relationship is nonlinear (Table V.4, Figure V.1).

The key assumption in this analysis is that reductions in trap limits for fishermen are proportional to reductions in nominal fishing mortality rates. As trap limits are reduced, actual fishing effort will ultimately be constrained by the number of traps available. However, present data are insufficient to estimate the precise implications of the potential trap reductions. To the extent that harvesters can modify fishing practices in response to fewer traps, the assumptions used in our analyses probably overestimate the expected reductions in fishing mortality and improvements in yield and eggs per recruit.

The expected changes in yield and eggs-per-recruit were estimated in two stages. First, the potential reduction in nominal fishing mortality rate (i.e., percent reduction in traps) was converted to expected reduction in realized F by using an empirical calibration curve. A fifth

order polynomial was used to fit the relationship between realized and nominal fishing mortality rates as shown below:

$$F_{realized} = {}_0 + {}_1 F^1_{nominal} + {}_2 F^2_{nominal} + {}_3 F^3_{nominal} + {}_4 F^4_{nominal} + {}_5 F^5_{nominal} \qquad \textbf{(1)}$$

Results of the model fit for Gulf of Maine, Georges Bank and South, and South of Cape Cod and Long Island Sound are shown in Table V.5.

The second stage of the analyses requires an interpolated estimate of the change in YPR and EPR as a function of the estimate of realized fishing mortality rates. Interpolation of YPR was accomplished with a fourth order polynomial as shown below:

$$YPR = {}_0 + {}_1 F^1_{realized} + {}_2 F^2_{realized} + {}_3 F^3_{realized} + {}_4 F^4_{realized} \qquad \textbf{(2)}$$

For eggs per recruit it was necessary to use a fifth order inverse polynomial to fit the observed set of model outputs for realized F and EPR as shown below:

$$EPR = {}_0 + {}_1 F^{-1}_{realized} + {}_2 F^{-2}_{realized} + {}_3 F^{-3}_{realized} + {}_4 F^{-4}_{realized} + {}_5 F^{-5}_{realized} \qquad \textbf{(3)}$$

Estimates of realized fishing mortality rates by stock area were taken from SARC 22. The initial values of nominal fishing mortality rates were derived by solving equation 1 for the specified realized fishing mortality rates. Nominal fishing mortality rates were then reduced by the targeted 40% reduction in trap counts.

The expected yield that might occur under reduced fishing mortality were estimated by raising observed landings by the proportional increases in YPR from the status quo. Since the contemporary fishery is dominated by new recruits in all areas, this assumption is justified for small changes in realized F.

Results and Discussion

Results of these polynomial fits for each assessment area are shown in Table V.5. Using these relationships, we can then estimate the effect on yield and egg production based on information on a "status quo" level of the resource. The status chosen was that of the last full assessment (1993-94) as reported in SARC22. Nominal rates of F were selected relative to the calculated $\mathbf{F_{realized}}$ (October 1993 - September 1994) using model 1 above. Assuming the one-to-one relationship in

the percentage reduction in number of traps and $\mathbf{F}_{\mathbf{nominal}}$, YPR and EPR values were calculated from models 2 and 3 above. Two cases were selected to compare to the baseline or status quo levels. The first uses the assumption that the 40% reduction (80/200 traps per year for 4 years) would occur throughout the range (including state waters). The resultant changes, by area, are shown in Table V.6. To aggregate the effects, the proportions of landings from each assessment area, and by inshore/offshore (state/EEZ) waters, shown in Table V.7, were used to prorate the projected change in landings following the 40% reduction. This is referred to as the "Best Case" in Table V.7.

A second view, "Worse Case", looked at the effect such a trap reduction scheme would have should there be no comparable scaling back in state waters. This analysis applied the increase in YPR from a 40% reduction in $\mathbf{F}_{\mathbf{nominal}}$ only to those landings that occurred in the EEZ. State water landings were considered to stay the same. Again, the overall effect on change in landings was the sum of these prorated components, and is shown in Table V.7. Should the latter reduction occur (i.e., limited to the EEZ) It is very likely that gains in the health of the resource in the EEZ would be compromised by the continued high exploitation inshore. Since lobsters do move around, some portion of the "healthier" EEZ portion of the population would be harvested inshore, thus decreasing the benefits of effort reduction in the EEZ.

It can be seen that the "Best Case" results show and increase in YPR of about 4.2%, 10.4% and 0.5% in the Gulf of Maine (GOM), Georges Bank (GB) and Inshore Southern New England (SCCLIS) regions respectively. Pooling these together, and weighting by proportional landings during the years 1992 to 1994 results in a resource-wide increase of about 4.6%. Increases in EPR (97% [GOM], 80% [GB] and 71% [SCCLIS]), as shown in Table V.6, represent a significant step toward easing the overfished condition of the resource.

The "Worse Case" results show the concern of applying an effort reduction program restricted to the EEZ. In this case, due to the overwhelming inshore component of total landings, the overall increase in yield is on the order of less than half a percent (0.3%). Other than in the GB region, there is little increase in egg production (the proportion of the resource in the other two areas that is affected by the potential EEZ regulations is less than 1% of their total) and therefore this option would provide little reduction in the overfished condition of the resource.

Figure V.1. Interpolated relationship between nominal fishing mortality (Fnom) and realized fishing mortality (Freal) for three lobster stock assessment areas. Model fits are based on a fifth order polynomial, data points derived from individual runs of the SARC22 version of the yield and egg-per recruit model.

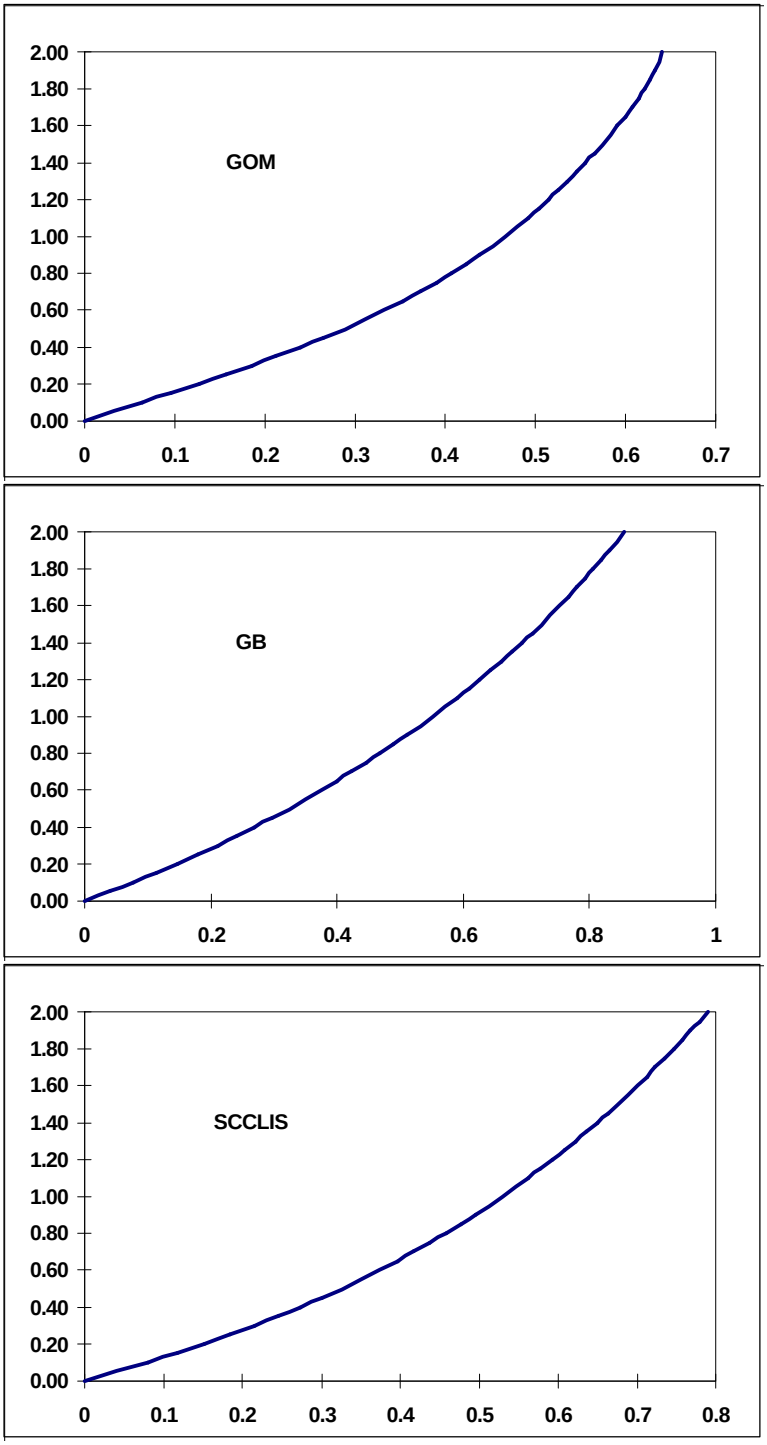


Table V.3. Relationship between eggs per recruit and yield per recruit versus realized fishing mortality rates for lobster assessment areas. Data taken from results of SARC 22.

Gulf of Maine			Georges Bank			South of Cape Cod and Long Island Sound		
Realized Fishing Mortality Rate	Eggs per Recruit	Yield per Recruit (g)	Realized Fishing Mortality Rate	Eggs per Recruit	Yield per Recruit (g)	Realized Fishing Mortality Rate	Eggs per Recruit	Yield per Recruit (g)
0	41734.7	0.0	0	48429.7	0.0	0	33959.4	0.0
0.063	21611.2	421.0	0.078	21101.0	726.7	0.081	13460.9	368.5
0.126	13049.4	550.8	0.148	13141.9	787.4	0.152	8745.0	428.9
0.186	8790.0	590.6	0.211	9306.9	772.7	0.216	6646.6	446.0
0.24	6399.4	599.2	0.27	7027.0	745.8	0.274	5425.1	451.2
0.289	4927.9	596.6	0.324	5519.7	719.0	0.326	4610.7	452.0
0.332	3955.1	590.2	0.375	4458.9	695.1	0.374	4023.9	451.0
0.371	3275.1	582.8	0.423	3680.1	674.3	0.417	3579.6	449.4
0.406	2779.1	575.6	0.469	3091.0	656.4	0.458	3231.9	447.4
0.438	2404.8	568.9	0.511	2635.0	641.0	0.495	2953.2	445.5
0.466	2114.7	563.0	0.552	2275.6	627.7	0.53	2725.8	443.6
0.492	1884.8	557.7	0.59	1987.9	616.2	0.563	2537.5	441.9
0.515	1699.6	553.0	0.626	1754.7	606.2	0.594	2380.0	440.3
0.536	1548.1	548.9	0.66	1563.9	597.4	0.623	2246.8	438.9
0.556	1422.7	545.3	0.693	1406.1	589.7	0.65	2133.4	437.6
0.573	1317.8	542.2	0.723	1274.9	582.8	0.676	2036.3	436.4
0.64	986.1	530.9	0.855	868.5	558.0	0.79	1713.6	432.2
0.681	822.2	524.6	0.955	680.3	542.9	0.886	1545.9	429.9
0.705	732.2	520.8	1.029	586.4	533.2	0.972	1453.8	428.8
0.717	678.4	518.6	1.084	537.1	526.5	1.051	1401.3	428.3
						1.124	1371.0	428.3
						1.262	1342.5	428.9

Table V.4. Relationship between nominal and realized fishing mortality rates for lobster assessment areas. Data taken from results of SARC 22.

Gulf of Maine		Georges Bank		South of Cape Cod and Long Island Sound	
Nominal Fishing Mortality Rate	Realized Fishing Mortality Rate	Nominal Fishing Mortality Rate	Realized Fishing Mortality Rate	Nominal Fishing Mortality Rate	Realized Fishing Mortality Rate
0	0	0	0	0	0
0.1	0.063496	0.1	0.078102	0.1	0.080762
0.2	0.126383	0.2	0.147666	0.2	0.152202
0.3	0.185606	0.3	0.211068	0.3	0.216051
0.4	0.239784	0.4	0.269639	0.4	0.273605
0.5	0.288599	0.5	0.324198	0.5	0.325853
0.6	0.332303	0.6	0.375294	0.6	0.373578
0.7	0.371395	0.7	0.423317	0.7	0.417404
0.8	0.406427	0.8	0.468575	0.8	0.457852
0.9	0.437917	0.9	0.511305	0.9	0.495352
1	0.466315	1	0.551705	1	0.530276
1.1	0.492001	1.1	0.589944	1.1	0.562938
1.2	0.515288	1.2	0.626163	1.2	0.593607
1.3	0.53644	1.3	0.660485	1.3	0.622523
1.4	0.555682	1.4	0.693015	1.4	0.649883
1.5	0.5732	1.5	0.723856	1.5	0.675874
2	0.640013	2	0.855332	2	0.790026

Table V.5. Polynomial fitting models and outputs for three lobster assessment areas.

Model 1: Relation between Freal and Fnom

>model freal=a+b*fnom+c*fnom^2+d*fnom^3+e*fnom^4+f*fnom^5

Parameter	GOM	GB	SLIS
A	-0.00075	0.000312	0.000134
B	0.666022	0.814588	0.853576
C	-0.09753	-0.44431	-0.52023
D	-0.23441	0.27462	0.275817
E	0.168039	-0.11255	-0.09296
F	-0.03483	0.018967	0.013889

Model 2 : Relation between EPR and Freal

>model epr=a+b*freal^(-1)+c*freal^(-2)+d*freal^(-3)

Parameter	GOM	GB	SLIS
A	-2755.14	-2335.75	-235.833
B	2431.99	2771.65	1691.19
C	-57.289	-74.2526	-47.7234
D	0.054902	0.071532	0.046066

Model 3: Relation between YPR and Freal

>est ypr=a+b*freal+c*freal^2+d*freal^3+e*freal^4

Parameter	GOM	GB	SLIS
A	352.112	826.862	375114
B	2499.13	-95.6398	543298
C	-8618.18	-1208.32	-1290140
D	11758.4	1696.4	1155430
E	-5789.72	-680.423	-354959

Where GOM is the Gulf of Maine, GB is Georges Bank and South (Offshore), and SCCLIS is South of Cape Cod to Long Island Sound.

Table V.6. Modeled effects of a 40% reduction in nominal effort with respect to yield and egg production for three American lobster stock assessment areas.

	GOM	GB	SCCLIS
Current Level of Fnom	1.80	0.88	3.05
Current Level of Freal	0.62	0.50	1.21
Current Level fo EPR	1013.46	2884.16	1127.76
Current Level of YPR	535.46	645.47	429.61
New Level of Fnom	1.08	0.53	1.83
New Level of Freal	0.49	0.34	0.75
New Level fo EPR	1998.16	5195.88	1926.48
New Level of YPR	557.68	712.68	431.90
Percent Change in Fnom	-40.0%	-40.0%	-40.0%
Percent Change in Freal	-21.6%	-32.6%	-37.9%
Percent Change in EPR	97.2%	80.2%	70.8%
Percent Change in YPR	4.1%	10.4%	0.5%
Maximum EPR@F=0	41734.70	48429.70	33959.40
Percent of Max EPR@Fold	2.4%	6.0%	3.3%
Percent of Max EPR@Fnew	4.8%	10.7%	5.7%

	1991-93 F (females)		SAW22
	GOM	GB	SLIS
Fnom	1.80	0.88	3.05
Freal	0.62	0.50	1.21
Reduction in Effort	40%	40%	40%
Reduced Fnom	1.08	0.53	1.83
Reduced Freal	0.49	0.34	0.75

Where GOM is the Gulf of Maine, GB is Georges Bank and South (Offshore), and SCCLIS is South of Cape Cod to Long Island Sound.

Table V.7. Changes in Yield.

Landings in pounds ($x10^3$)

		INSHORE			OFFSHORE			
	Region/Year	GOM Inshore	GB Inshore	SCCLIS	GOM OFF	GB Offshore	Grand Total	Change in Total Yield
	1992	40344	181	8238	21	8514	57299	
Status Quo [1]	1993	41648	40	8001	414	7906	58009	
	1994	51898	96	10437	548	7005	69983	
	1992-94	133890	317	26676	983	23425	185291	
	1992	42768	181	8282	21	8709	59962	4.6%
Best [2]	1993	44042	40	8044	416	8091	60632	4.5%
	1994	54811	96	10492	551	7199	73149	4.5%
	1992-94	141621	317	26818	988	23999	193744	4.6%
	1992	40344	181	8238	21	8709	57494	0.3%
Worse [3]	1993	41648	40	8001	416	8091	58196	0.3%
	1994	51898	96	10437	551	7199	70180	0.3%
	1992-94	133890	317	26676	988	23999	185870	0.3%

1 Status Quo: Assumed current conditions based on SARC22 analyses
2 Best: Assuming a 40% reduction in nominal fishing effort through the US range of lobsters
3 Worse: Assuming a 40% reduction in nominal fishing effort only in th EEZ

Where GOM is the Gulf of Maine, GB is Georges Bank and South (Offshore), and SCCLIS is South of Cape Cod to Long Island Sound, Inshore is within State waters and Offshore is in the EEZ.

Economic Benefits of Lobster Management

Procedures used to estimate aggregate domestic landings of American lobster were described above. Note that the landings reported in Table V.7 may be thought as being long-run equilibria assuming fishing mortality rates remain at the associated levels. Economic benefits were calculated using the three-year average from Table V.7. Specifically, the status quo (SQ) landings were taken to be 61.76 million pounds. Similarly, average landings were 64.59 and 61.97 million pounds under the "Best" and "Worse" scenarios described above. The economic benefits of the potential action consist of the increased industry revenues associated with the yield increases that follow reduced fishing mortality rates and cost savings associated with lower capital costs due to reduced purchase and replacement of traps. Except for the status quo (Alternative 1) and the

fishing ban (Alternative 6) each of the potential alternatives (PA) are assumed to have roughly equivalent conservation measures. Therefore, the analysis of gross benefits presented below is assumed to be applicable to Alternatives 2-5. Also, since the non-trap alternatives are designed to keep that sector within its historic participation levels, the gross benefit estimates are similarly applicable for the lobster fishery as a whole. The analysis compares the projected gross benefits relative to the SQ under a scenario in which the state-waters fishery adopts fishing mortality equivalent measures and another in which states are assumed to maintain current fishing mortality levels. The procedures used to estimate gross economic benefits are described below.

Gross Revenue Changes

Projected revenue changes associated with management action were evaluated for Amendment 5 to the American Lobster Fishery Management Plan and similar methods were employed to evaluate the current action. Reductions in fishing mortality rates are expected to result in increased landings which are likely to result in changes in ex-vessel prices. These price changes were estimated by using price flexibilities reported in Cheng and Townsend (1993). A price flexibility measures the percentage change in ex-vessel price associated with a one percentage change in quantities. For example, a price flexibility of -0.2 means that for every one percent increase in quantities, the ex-vessel price of lobster would decrease by 0.2 percent.

Monthly Landings Shares

Since the Cheng and Townsend results were based on a monthly price response model, the projected landings had to be converted to a monthly basis. Monthly domestic landings from all sources were estimated from dealer weighout data for the years 1992, 1993, and 1994. These data were then used to compute a monthly average share of total annual landings. Since none of the alternatives create any obvious tendencies to change the annual distribution of lobster landings, the 1992-94 average shares were assumed to hold for all alternatives and scenarios.

Prices

A price flexibility defines the relationship between landings and ex-vessel prices. This requires establishing a baseline price and landings from which percentage changes in landings and the resulting price changes can be calculated. Monthly average prices were calculated from 1992-1994 weighout data. These prices were assigned to the SQ (Alternative 1) since they are consistent with the time period from which the SQ fishing mortality rates and landings were generated.

Projected Revenues

Projected revenues for the SQ and the two PA scenarios are reported in Table V.8. Column 1 shows row labels. Column 2 reports the estimated 1992-94 average monthly landings shares. Column 3 reports the price flexibilities from Cheng and Townsend (1993 p. 108). Column 4 reports 1992-94 monthly average prices. Column 5 reports monthly landings for the SQ. The monthly SQ landings are the product of the total projected SQ landings (61.76 million pounds) and the associated monthly share (column 2). Column 6 reports the estimated monthly revenues

for the SQ. The SQ revenues are the product of monthly landings (column 5) and 1992-94 monthly average price (column 4). Column 7 reports projected monthly landings under the PA scenario where states are assumed to adopt equivalent fishing mortality reductions. These PA landings are the product of the projected total landings (64.59 million pounds) and landings share (column 2). Column 8 reports the associated PA monthly revenues. The monthly revenues in column 8 are computed as follows. The percentage change in landings in a given month is multiplied by the price flexibility for that month to estimate the total percentage change in ex-vessel price. For example, the PA results in a 4.56% change in landings in June. This results in a 1.95% (-0.42*4.56) reduction in the June ex-vessel price. This estimated change in price is then applied to the PA landings for the month. To carry on with the June example, the 1.95% reduction in June price results in a forecasted price of $3.53 per pound ($3.60*0.98). This price is applied to the June landings of 3.07 million pounds to get the revenues of $10.86 million reported in column 8. Column 9 reports the estimated monthly landings for the PA under the assumption that states do not implement a fishing mortality reduction program. Column 10 reports the associated PA revenues based on the landings reported in column 9 and using the same procedures just explained.

The annual totals provide an estimate of the gross revenues associated with the SQ and the two PA scenarios. The difference between the SQ and the PA provides a measure of the value of fishing mortality reduction. Assuming that states implement a comparable fishing mortality reduction program industry revenues were projected to increase $2.13 million annually. Projected over a 10 year period at a discount rate of 7.0%, the PA would exceed the SQ by $16.09 million in present value. If states do not implement any fishing mortality rate reduction initiatives the expected benefit of implementing the PA in the EEZ only will be greatly diminished but is still positive. Specifically, an EEZ-only effort reduction program would result in an annual net gain of $0.18 million. Projected over 10 years at 7.0%, the present value of an EEZ-only effort reduction program would be $1.22 million.

Table V.8. Revenue Projections for SQ and PA (with and without state waters reduction)

						EEZ & State Water Reduce		EEZ Only	
Mth	Landings Share (%)	Price Flexi-bility	Average Price ($/lb)	SQ Landings (million lbs)	SQ Revenues (million $)	PA Landings (million lbs)	PA Revenues (million $)	PA Landings (million lbs)	PA Revenues (million $)
Jan	2.14	-0.30	3.65	1.33	4.84	1.39	4.99	1.33	4.85
Feb	1.02	-0.14	4.30	0.63	2.72	0.66	2.83	0.64	2.73
Apr	0.96	-0.12	5.43	0.59	3.23	0.62	3.35	0.60	3.23
Mar	1.74	-0.21	4.65	1.08	5.01	1.13	5.19	1.08	5.03
May	3.51	-0.52	3.22	2.17	6.98	2.27	7.12	2.17	6.99
Jun	4.76	-0.42	3.60	2.94	10.59	3.07	10.86	2.95	10.61
Jul	12.18	-0.61	2.86	7.52	21.54	7.87	21.90	7.55	21.57
Aug	21.69	-0.79	2.56	13.07	33.54	13.67	33.80	13.12	33.56
Sep	21.01	-0.97	2.53	12.98	32.83	13.57	32.80	13.02	32.83
Oct	17.09	-0.80	2.46	10.56	25.97	11.04	26.17	10.59	25.99
Nov	9.58	-0.68	2.52	5.92	14.92	6.19	15.12	5.94	14.93
Dec	4.81	-0.57	3.07	2.97	9.14	3.11	9.31	2.98	9.15
Total				61.76	171.31	64.59	173.44	61.97	171.49

SQ = Status Quo
PA = Potential Alternatives

Capital Cost Savings Associated with Trap Reduction

The trap reduction plan will lower the capital costs associated with the buildup and replacement of traps. Permit data current to 1995 indicate that there were 632,737 traps reported as being fished by EEZ permit holders. Since, reporting of trap numbers has never been mandatory and given the industry-wide buildup in traps it seems likely that the numbers of traps actually fished in the EEZ are more than that reported. Assuming an average annual replacement rate of 10% and an average cost per trap of $65 (based on unpublished cost/earnings data collected by University of Rhode Island as part of lobster market research project), the capital costs for replacement of reported traps alone would average $4.1 million per year in the EEZ fishery. The trap reduction plan is projected to result in a net reduction of 37% in reported traps to an estimated 401,447 traps assuming that the distribution of trap numbers for vessels below the cap remains constant. Assuming the same replacement rate and cost of traps, the cost of replacing traps would go down to $2.6 million a cost savings of $1.5 million per year. The present value of a ten year stream of $1.5 million discounted at 7% is $11.3 million. Considering the likelihood that the numbers of traps fished in the EEZ is larger than that considered here, this provides a conservative estimate of the capital costs savings over time that would be associated with trap reduction in the EEZ.

Note that the above estimate was based on consideration of EEZ trap reduction alone. If trap reductions of similar magnitude were implemented in state waters, the cost savings would be considerable. For example, approximately 3 million traps were fished in state and EEZ waters in 1991 (Krouse, 1994). At the replacement rate of 10% and $65 per trap the cost of replacing gear would be $19.5 million per year. Note that 3 million traps is probably quite conservative given the fact that 1996 estimates place trap numbers in Maine alone at nearly 2.7 million (Krouse, personal communication). Assuming a 37% reduction in total traps from the 3 million base would result in a total of 1.89 million traps. At 1.89 million traps, annual replacement costs would be $12.3 million, a savings of $7.2 million per year. Applying a discount rate of 7% over a ten year period these cost savings would be $54.1 million.

Gross Economics Benefits

Based on the above findings, the gross economic benefits could range between $11.5 and $70.2 million. Both of these estimates include the joint benefit of gains in industry revenues and reduced capital costs. The $11.5 million gross benefit is based on the assumption that trap reductions are implemented only in the EEZ and fishing mortality remains at their assessed levels in state waters. By contrast, the $70.2 million benefit estimate is based on the assumption that equivalent trap reductions are implemented throughout the range of the resource.

Gross economic benefits refer to aggregate economic benefits prior to subtracting economic costs (operating costs, compliance and enforcement costs, and administrative costs). If vessel operators were to make no changes in their fishing practices then there may be additional savings in terms of lowered operating costs. For example, if vessel owners make no changes in soak time then trap hauls would go down and operating costs for items like bait would go down. However, vessels

owners are more likely to alter their fishing practices to the extent practicable to maintain output levels. It seems quite likely that instead of keeping soak time constant, operators would reduce soak times so that the number of trap hauls would actually remain relatively constant or could increase. In this instance bait costs would not be affected. There are numerous other adaptive strategies that might result from a reduction in traps. The extent to which any one of these strategies would reduce, maintain, or increase operating costs cannot be predicted. However, there may be distinct features of each of the alternatives that would make one more costly than another. The potential differences in costs among the alternatives are discussed below.

Differences in Economic Costs Among Alternatives

Costs among the alternatives under discussions include three general categories: costs to the lobster industry, administrative costs and enforcement burden. The costs to the industry focus on (1) costs of trap tags and tag replacement for the EEZ fishery and (2) costs to fish dealers for reporting lobster purchase data.

Costs to the industry

Trap tag and tag replacement costs

Among the six alternatives, Alternative 1 and 6 will not incur costs of trap tags and tag replacement due to no trap tag requirement. The other alternatives (Alternative 2-5) will require permit holders to purchase trap tags from an independent contractor.

Alternative 1 (Status Quo) : There would be no costs for trap tags because there will be no trap tag requirement under this alternative.

Alternative 2:
Alternative 2 represents the ASMFC plan which contains seven management areas. At this time, the plan proposes a variable trap reduction schedule depending on the area. For simplicity, two basic trap reduction schedules are evaluated here. For most (inshore/nearshore) management areas, this alternative calls for 1000 traps in 1999 dropping to 800 traps in the year 2000 and beyond, pending possible substitution of conservation equivalent measures. In the ASMFC Plan Area 3 (the federal offshore waters), this alternative calls for a limit of 2000 traps in 1999 and thereafter, pending possible substitution of conservation equivalent measures.

For most inshore/nearshore management areas, the cost associated with the purchase of 1000 near-shore tags at $0.14 per tag including shipping is estimated to be $140.00 per lobster permit holder in the near-shore trap sector (1000 tags x $0.14 = $140.00). The total tag cost for the first year, therefore, for all 2500 permits in the near-shore sector is estimated at $350,000.00 ($140.00 x 2,500=$350,000.00). The permit holders are expected to replace trap tags due to tag losses. It is expected that one third of the permit holders would lose half of their tags. The costs for the tag replacement at $0.14 per tag for the first year would be about $60,000.00 (833 permit holders x

(500 tags x $0.14 + $2.00) =$60,000.00). Total tag and tag replacement costs for the first year for the near shore sector would be about $410,000.00. The permit holders are expected to replace trap tags due to tag losses. It is expected that one third of the permit holders would lose half of their tags. The costs for the tag replacement at $0.14 per tag for the second and subsequent years would be about $48,300.00 (833 permit holders x (400 tags x $0.14 + $2.00) =$48,300.00). Until such time as the ASMFC further defines area management effort reduction measures, trap limits will remain at 800.

With the same assumption, total tag and tag replacement costs for the first year for 200 permit holders in the offshore sector fishing 2000 traps would be approximately $65,500.00 including $56,000 for the tags and $9,500.00 for the tag replacement. Therefore, total tag and tag replacement costs to the lobster near- and offshore sectors would be about $475,500.00 ($410,000.00 + $65,500.00 = $475,500.00) for the first year. For the second and subsequent years, total tag replacement costs to the lobster near- and offshore sectors would be about $57,800.00 ($48,300.00 + $9,500.00 = $57,800.00).

The presented value of total trap tag and tag replacement costs to the EEZ lobster trap fishery under this alternative for 10 years at 7% discount would be approximately $852,080.00.

Alternative 3: The cost associated with the purchase of 800 near-shore tags at $0.14 per tag including shipping is estimated to be $112.00 per lobster permit holder in the near-shore trap sector (800 tags x $0.14 = $112.00). The total tag cost for the first year, therefore, for all 2500 permits in the near-shore sector is estimated at $280,000.00 ($112.00 x 2,500=$280,000.00). The permit holders are expected to replace trap tags due to tag losses. It is expected that one third of the permit holders would lose half of their tags. The costs for the tag replacement at $0.14 per tag for the first year would be about $48,300.00 (833 permit holders x (400 tags x $0.14 + $2.00) =$48,300.00). Total tag and tag replacement costs for the first year for the near shore sector would be about $328,300.00.

With the same assumption, total tag and tag replacement costs for the first year for 200 permit holders in the offshore sector would be approximately $65,500.00 including $56,000 for the tags and $9,500.00 for the tag replacement. Therefore, total tag and tag replacement costs to the lobster near- and offshore sectors would be about $393,800.00 ($328,300.00 + $65,500.00 = $393,900.00) for the first year.

The out-year tag replacement cost would be reduced according to the trap-tag reduction schedule, a reduction of 10% each year up to a 40% reduction in total. This means that the tag replacement cost would be 90% of the replacement cost of the first year for the second year, 80% for the third year, 70% for the fourth year, and 60% for the fifth year and later years. The tag replacement cost, therefore, would be $52,000.00 for the second year, $46,200.00 for the third year, $40,500.00 for the fourth year, and $34,700.00 for the fifth year and future years.

The presented value of total trap tag and tag replacement costs to the EEZ lobster trap fishery under this alternative for 10 years at 7% discount would be approximately $650,800.00.

Alternative 4: Under this alternative, we assume that a half of the near-shore permit holders would be allocated 400 traps and the another half, 800 traps. Also assumed is that a half of the offshore permit holders would be allocated 1,000 traps while the another half, 2,000 traps. With the assumptions above, total number of trap tags would be 25% lower under this alternative than the alternative 3, implying the trap tag and tag replacement costs to the industry would be reduced by the same percent (25%). In other words, the trap tag and tag replacement costs under this alternative would be at 75% of the costs under Alternative 3. Therefore, total trap tag and tag replacement costs under this alternative in the first year would be $246,200.00 for the near-shore sector and $49,100.00 for the offshore sector. The total trap tag and tag replacement costs for the fishery would be $295,300.00 ($246,200.00 + $49,100.00) for the first year, 75% of the costs under Alternative 3. For the same reason, the out-year tag replacement cost each year would be 75% of the tag replacement cost under Alternative 3.

The present value of the trap tag and tag replacement costs for 10 year discounted at 7% would also be 75% of total costs under Alternative 3 and is calculated to be $488,100.00 under this alternative.

Alternative 5: For the near-shore sector, the trap tag allocation program would be the same for Alternatives 3 and 5. Therefore, trap tag and tag replacement costs under this alternative would be the same at $328,300.00. For the offshore sector, 75% of the historical trap possession by permit holders would be calculated and allocated to each permit holder. The average trap possession for the offshore sector in 1995 was 1,353 traps per permit holder and thus the offshore allocation of traps (75% of the 1,353 traps) averages to be 1,010 traps per offshore permit holder. With a total of 200 offshore permit holders in the sector, total offshore traps would be 202,950 traps, about 50.7% of the total under the Alternative 3. Therefore, the offshore trap tag and tag replacement costs under this alternative would be 50.7% of the costs ($65,500.00) estimated for Alternative 3 and are calculated to be $37,300.00.

Total trap tag and tag replacement costs to the EEZ lobster trap fishery for the first year would be $365,600.00 for the two sectors ($328,300.00 + $37,300.00 = $365,600.00), about 93% of the costs under Alternative 3. The out-year tag and tag replacement costs would also be at about 93% of the costs estimated for Alternative 3.

The presented value of the tag and tag replacement costs under this alternative for 10 years at 7% discounting would be $604,200.00.

Alternative 6: Since there will be no trap tag requirement under this alternative, no trap tag and tag replacement costs to the industry would be accrued.

Mandatory reporting costs

As discussed in Section II.1 of this DEIS, mandatory reporting at the vessel and dealer level on a trip by trip basis is an essential component for monitoring the eventual success of fishery management systems under consideration. The associated reporting requirements for such a program from a coast wide state/federal perspective are currently being developed under the auspices of ASMFC's Atlantic Coastal Cooperative Statistics Program (ACCSP). The ACCSP activities are genetic in nature and would not only cover the data requirement for the lobster fishery management but also include the data requirements for managing the species under the ASMFC jurisdiction. The mandatory reporting cost to the industry would not be incurred with any alternative lobster management systems because the mandatory system has not been developed exclusively for the lobster fisheries and would not be implemented until the ACCSP is in place in the future. Therefore, there would be no increases in reporting costs in regard to the selection of the lobster management alternatives.

Administrative costs

Administrative costs included here are additional burden to the Federal government resulting from various management alternatives. Since issuance of vessel fishing permits is already a requirement, issuing vessel permits does not constitute an additional burden nor increase administrative costs to the government. However, two components of the lobster management system will impose an additional burden to the government: a trap tag program and a fishing zone certification program. These two components are only prescribed for Alternatives 3, 4 and 5, and not prescribed for Alternatives 1 (Status Quo) and 6 (no lobstering in EEZ). As a result, there will not be additional administrative costs for Alternatives 1 and 6. The additional administrative costs are presented below.

Alternative 1:

There are no additional costs to the government as indicated above.

Alternative 2:
Table VI.1 lists necessary tasks and estimated procedures for the burden and costs to the government. With total traps estimated to be fished under this alternative in year one at 2.9 million lobster traps with tags (2.5 million near-shore traps = 1000 traps x 2,500 vessels; 0.4 million offshore traps = 2000 traps x 200 vessels), the estimated costs for administrating the 2.9-million tag program would be $111,732.00 for the first year. In year two, total traps estimated to be fished under this alternative are 2.4 million lobster traps with tags (2 million near-shore traps = 800 traps x 2,500 vessels; 0.4 million offshore traps = 2000 traps x 200 vessels), the estimated costs for administrating the 2.4-million tag program would be $92,468.00 for the second year and about $3,000.00 for each of the out years.

Alternative 3:

Table VI.1 lists necessary tasks and estimated procedures for the burden and costs to the government. With total traps estimated to be fished under this alternative at 2.4 million lobster traps with tags (2 million near-shore traps = 800 traps x 2,500 vessels; 0.4 million offshore traps = 2000 traps x 200 vessels), the estimated costs for administrating the 2.4-million tag program would be $92,468.00 for the first year and about $3,000.00 for each of the out years. Detailed procedures of the estimation are shown in Table VI.1.

Alternative 4:

The number of trap tags to be administrated under this alternative is estimated to be 1.8 million, 75% of 2.4 million trap tags estimated for Alternative 3. Assuming the administrative costs would be proportional to the number of trap tags to be administrated, the administrative cost under this alternative is estimated to be 75% of the administrative cost under Alternative 3 and, thus, would be $69,351.00 for the first year and $2,250.00 for each of the out years.

Alternative 5:

The number of trap tags to be administered under this alternative is estimated to be 2.2 million (2,000,000 trap tags = 800 trap tags x 2,500 vessels; 202,950 trap tags = 1,010 trap tags x 200 vessels) and is about 92% of 2.4 million the trap tags for Alternative 3. Assuming the administrative costs would be proportional to the number of trap tags to be administrated, the administrative cost under this alternative would be 92% of the cost estimated for Alternative 3, $85,000.00 for the first year and $2,800.00 for each of the out years.

Also, it should be noted that this alternative will have an additional requirement to identify and verify the recent historical trap possession by about 200 offshore permitted vessels and allow the vessel owners to appeal to resolve trap tag allocation. The additional requirement would accrue an additional administrative task which is estimated to require a ½ staff year at the GS -7 level at the cost to the government approximately $16,000.00 for the first year.

The total administrative cost to the government under this alternative would be $101,000.00 ($85,000.00 + $16,000.00) for the first year and $2,800.00 for each of the out years.

Alternative 6:

There will be no additional costs to the government as indicated above.

Enforcement costs and burden

The enforcement activities focus on enforcing the trap tag requirement and lobster fishing zones (Zones A, B, & C and a buffer zone). Since Alternatives 1 (the status quo) and 6 (no trap

lobstering in EEZ) do not require trap tags nor have a buffer zone designated between the near shore zone (Zone A & B) and the offshore zone (Zone C). Therefore, there will be no additional burden for enforcement and thus no additional enforcement costs. The additional enforcement burden is discussed for each of six alternatives below:

Alternative 1:

No increase in enforcement burden and costs as indicated above.

Alternative 2:

Enforcement burden under this alternative would increase from the status quo alternative (Alternative 1) because enforcement will be required to check if a lobster vessel exceeds its trap tag allocation and is properly fishing in the designated management area(s). The enforcement burden under this alternative would increase approximately 20% over Alternative 3 because of the larger number of trap tags expected to be enforced (2.9 million trap tags under Alternative 2 verses 2.4 million trap tags under Alternative 3).

Alternative 3:

Enforcement burden under this alternative would increase from the status quo alternative (Alternative 1) because the enforcement will be required to check if a lobster vessel exceeds its trap tag allocation and is properly fishing in the authorized zone and/or if the prohibition against lobstering in the bluffer zone is violated.

Alternative 4:

Similar to Alternative 3, the enforcement burden under this alternative would increase from the status quo alternative (Alternative 1) because of the additional enforcement requirement. However, the burden under this alternative might be slightly reduced relative to Alternative 3 due to a smaller number of trap tags to be accounted for, a 75% of the Alternative 3 level.

Alternative 5:

Similar to Alternatives 3 and 4, the enforcement burden under this alternative would increase from the status quo alternative (Alternative 1) for the additional enforcement requirement. The additional burden under this alternative is estimated to be less than Alternative 3 because the number of the traps and tags under this alternative is only 75% of the level under Alternative 3, but higher than Alternative 4 because a larger number of trap tags is expected to be enforced (2.2 million trap tags under Alternative 5 verse 1.8 million trap tags under Alternative 4),

Alternative 6:

This alternative of banning lobstering in EEZ would not incur an additional enforcement burden relative to a trap allocation and trap tag program and a zoning system because lobstering is banned. Among the alternatives, this alternative has the most cost savings in terms of the enforcement burden and effectiveness.

VI. PAPERWORK REDUCTION ACT ANALYSIS

READER NOTICE: This draft Paperwork Reduction Act analysis is included in the American lobster draft EIS to provide the public with an increased understanding of a trap tag program and encourage public comment on the logistics of implementing the program for federal lobster permit holders.

Supporting Statement for Revisions to OMB Approval Number 0648-0202
American Lobster Requirements

1. Introduction

This submission requests the Office of Management and Budget (OMB) to authorize processing of this submission for a collection of information under the procedures set forth under the Paperwork Reduction Act of 1995 (PRA). This submission would revise the OMB approval for Northeast Region Permits (OMB Control No. 0648-0202) as it pertains to permit requirements. The family of forms currently covers the Northeast Region's permit requirements for fishing vessels, operators, and dealers. This submission includes measures that will be implemented under the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA). Specifically, the action would transfer Federal management authority for American lobster from the Magnuson-Stevens Act to ACFCMA. The action would address regulatory measures in the EEZ to cap and incrementally reduce fishing effort, and implement a trap tag management program in Federal waters to help prevent overfishing of the American lobster resource. The measures will be in effect starting January 1, 1999, with incremental reductions in effort through December 31, 2003.

2. Justification

Why is the information necessary?

The collections of information required for this action are intended to prevent uncontrolled increases in the number of traps used by lobster vessels. The first portion of this action would require that lobster vessels select one of three lobster fishing zone designations Zone A (State/EEZ nearshore lobstering), Zone B (EEZ nearshore lobstering), or Zone C (EEZ Offshore lobstering). To aid in enforcement and administration of the program, lobster vessel owners will be required to carry a Lobster Fishing Certificate onboard their vessel. This Certificate will identify what category designation the vessel is enrolled in and the amount of tags and tags

numbers that were issued. If enrolled under Zone A, the certificate would cite the amount of traps fished in state waters or tags and tags numbers that were issued for federal waters and the amount of tags issued by the respective state jurisdiction(s), as appropriate. The second provision would be to require that each lobster trap fished carry one tag.

To begin the effort reduction program, owners must declare that their lobster vessel will either be Zone A (State/EEZ nearshore lobstering), Zone B (EEZ nearshore lobstering), or Zone C (EEZ Offshore lobstering), (i.e., elect a designation on a form provided by NMFS).

The second lobster vessel effort reduction program involves trap tags. Owners that declare into Zone B or Zone C must request an appropriate number of uniquely numbered tags -- up to, but not exceeding, 800 tags and 2000 tags respectively. Owners that declare into Zone A must also request an appropriate number of uniquely numbered tags, minus any traps fished in state waters or state issued tags, not to exceed the 800 trap limit. Federal permit holders would then be required to tag all lobster traps with one tag. If the original tags are lost -- weather, gear conflicts and unforeseen events occasionally cause the loss of lobster traps -- the vessel owner or representative must report lost tags as soon as possible after tags have been discovered missing, via letter or fax, to the Regional Administrator (R.A.). The vessel owner may also make a request for replacement tags via a letter to the R.A., including a check for the cost of the replacement tags. The use of a restricted number of tags will prevent uncontrolled increases in numbers of traps used by federal permit holders. This provision can only be promulgated by requiring that federal permit holders submit an additional form electing their lobster vessel category designation. Additionally, on that same form, federal permit holders will request an appropriate number of trap tags and send a check for the cost of the tags. If the maximum number of tags are not requested on the initial form, supplemental requests for additional tags via an additional form may or may not be allowable. Public comments on the possibility, as well as other issues concerning trap tag administration are being requested as part of an Environmental Impact Statement concerning Federal lobster management. In subsequent years, the request for tags will be part of the annual permit renewal applications.

How, and by whom, will the information be used?

After the initial start-up, trap tag requests will be incorporated into the annual permit application. The information requested on the annual permit application forms is used by several offices of NMFS, the Fish and Wildlife Service, the Council and/or the ASMFC to evaluate the management program and future management proposals. The information may also be used by the U.S. Coast Guard to monitor compliance with the provisions of this action. In most cases, aggregated summaries are made available, but for law enforcement, mailings, or resource allocation problems, individual permit information is often required. In addition to the uses specifically relating to lobster management, the data collected through the effort monitoring will be incorporated into NMFS databases which are used in many analyses by NMFS offices, the Regional Fishery Management Councils, ASMFC, the states, the Departments of State and Commerce, the Fish and Wildlife Service, OMB, the Corps of Engineers, Congressional staffs, the fishing industry, and the

public.

The information requested with regard to lobster fishing zone designations will enable NMFS, ASMFC, and the states to monitor and track the level of participation in this fishery, and its effect on the effort reduction and stock rebuilding goals of the action.

Can improved technology reduce the burden?

Except for the initial change in 1999 that would require an additional form the requests for traptags will be incorporated onto the computer-generated preprinted renewal permit form. Therefore, a permit change would be simple for both the public and the issuing office. The information obtained from current permits is used to prepare a pre-printed renewal application which is sent to the permit holder for updating prior to the start of each new fishing year. Where there is no change to the information required on the permit, renewal requires no more than a signature from the applicant, a request for a number of tags, and potentially, writing/securing a payment for the administration of the trap tag program. Changes to the permit application are a matter of marking the desired lobster fishing zone designation. This format minimizes the reporting burden on the public as well as the administrative burden on the agency. No improved information collection technology has been identified to reduce this burden further. Every effort will be made in the future to use computer technology to reduce the public burden. Collections will be done via mail, phone or fax transmission.

Describe any duplication of effort.

Other than information such as the vessel owner's name and caller's name, vessel name and permit number needed to initially identify participants, no information will be collected that is already collected through another means.

How are the impacts on small businesses minimized?

Only the minimum data to meet the requirements of the above measures are requested from all respondents. Since most of the respondents are small businesses, separate requirements based on the size of business have not been developed.

What are the consequences of no, or a less frequent, collection?

An annual request for tags will be required of vessel owners. It is not useful to conduct this collection less frequently, as it is expected that tags will be routinely lost as part of doing business, and the number of traps fished by a vessel frequently changes. Further, annual requests allow for incremental reductions in the number of traps to reduce effort. If no collection is made, it will be impossible to monitor or enforce trap limits aimed at reducing the possibility of a collapse of the lobster resource.

Explain if request is not consistent with OMB guidelines.

The data collection is consistent with OMB guidelines.

Describe efforts to get comments from outside the agency.

Public hearings will be held on this and other potential federal lobster management regulations for this action in the major lobster ports and lobster producing regions. Public agencies consulted will include a NOAA/NMFS, USFWS, and fisheries agencies in all the Northeast coastal states from North Carolina through Maine.

Explain any payment or gifts provided to respondents.

Neither payments nor gifts are given to the respondents.

Describe any assurances of confidentiality.

All data will be kept confidential as required by NOAA Directive 88-30, Confidentiality of Fisheries Statistics, and will not be released for public use except in aggregate statistical form (and without identifying the source of data, i.e., vessel name, owner, etc.).

Provide justification for any questions of a sensitive nature.

There are no questions of a sensitive nature.

Provide an estimate in hours of the burden of the collection of information.

Regulatory changes contained in this action alter previously approved burden estimates for this family of forms. This submission adds estimates of the new burdens (Table VI.1) associated with these changes. New numbers reflect estimates for the lobster fishery only, thus previously approved estimates for other species (e.g. multispecies) are unaffected.

The declaration of lobster fishing zone designations and the request for the appropriate number of trap tags will be made initially by mail on a form provided by NMFS. To aid in enforcement and administration of the program, lobster vessel owners will be required to carry a Lobster Fishing Certificate onboard their vessel during the period of participation. This Certificate will identify the lobster fishing zone designation and the amount of tags and numbers that were issued. The burden associated with this requirement is estimated at approximately 5 minutes per response, and includes both the selection of category designation, request for a number of tags, and preparing payment for cost of the tags. The number of tags requested is dependent upon the number and location of traps fished, and whether the vessel fishes any traps in state waters or was issued state tags, as described in item 1.

The burden associated with reporting lost tags and requesting replacement tags is estimated at 3 minutes per response. NMFS will provide a replacement tag order form which enables the respondent to indicate the lost tag number(s) and request replacement tags. Regardless of whether replacement tags are needed, a respondent must notify NMFS that "x" amount of tags were lost, and the tag numbers associated with those tags. The burden associated with this requirement is estimated at 1 minute per response. It is estimated that every lobster vessel (2700) is likely to lose trap tags at some point in the year and will need to report those lost tags and request additional tags.

TABLE VI.1. Summary of estimated burden of information collections

	Number of Participants	Items/ entity	Total # of Items	Response Time (Hrs)	Total Burden (Hrs)	Costs to Govt.
Initial permit category designation change	2700	1	2700	.083	224.1	$89,100
Request for tags	2700	1	2700	n/a	n/a	n/a
Request for additional tags	1350	1	1350	.033	45.6	$1,140
Requests for replacement tags	2700	1	2700	.033	89.1	$2,228
Attachment of tag(s) (Inshore)	2500	800	2,000,000	0.017	34,000	n/a
Attachment of tag(s) (Offshore)	200	2000	400,000	0.017	6,800	n/a
Totals					41,159	$92,468

Provide estimates of the total annual cost burden to the respondents.

Regulatory changes contained in this action alter previously approved burden estimates for this family of forms. This submission adds estimates of the new burdens associated with these changes. New numbers reflect estimates for the lobster fishery only, thus previously approved estimates for other species (e.g. multispecies) are unaffected.

For the most part, this information collection does not require respondents to purchase new or additional equipment or services. Most computers, telephones and/or facsimile machines utilized by the respondents would have already been purchased as part of customary and usual business practices, thus start up costs associated with these programs are negligible. The notable exception to this is the purchase of trap tags.

Nearshore Lobstering

Trap tags will be purchased from, and supplied to industry by, an independent contractor. The

added costs associated with the purchase of the tags is $0.14, includes shipping, and a $2.00 fee for providing replacements tags on demand at a maximum annual cost of $114.00 (800 tags x $0.14 + $2.00). Maximum annualized costs, therefore, for all 2500 respondents is estimated at $285,000. The burden associated with the initial request for and purchase of tags is incorporated into the burden associated with the initial fishing zone designation, as these can be done at the same time. The attachment of these tags to a trap is estimated at approximately 1 minute/tag. Respondents may request replacement tags as needed for an additional cost of $0.14/tag. It is estimated that one third of the enrolled fishermen will lose half of their tags per annum for a total maximum cost of $46,648 (833 respondents x 400 tags x $0.14/tag).

Offshore Lobstering

Trap tags will be purchased from, and supplied to industry by, an independent contractor. The added costs associated with the purchase of the tags is $0.14, includes shipping, and a $2.00 fee for providing replacements tags on demand at a maximum annual cost of $282.00 (2000 tags x $0.14 + $2.00). Maximum annualized costs, therefore, for all 200 respondents is estimated at $56,400. The burden associated with the initial request for and purchase of tags is incorporated into the burden associated with the initial fishing zone designation, as these can be done at the same time. The attachment of these tags to a trap is estimated at approximately 1 minute/tag. Respondents may request replacement tags as needed for an additional cost of $0.14/tag. It is estimated that one third of the enrolled fishermen will lose half of their tags per annum for a total maximum cost of $9,380 (67 respondents x 1000 tags x $0.14/tag).

Provide estimates of annualized costs to the federal government.

Regulatory changes contained in this action alter previously approved burden estimates for this family of forms. This submission adds estimates of the new burdens (Table VI.1) associated with these changes. New numbers reflect estimates for the lobster fishery only, thus previously approved estimates for other species (e.g. multispecies) are unaffected.

Estimated annualized costs to the Federal government assumes that the average cost for issuance of a permit is $33/permit, based on the most recent Northeast Region cost analysis (includes labor, printing, distribution, computer time and handling). The lobster vessel permit is not new to this action so there is no new burden associated with the existence of the permit. The increased burden is a result of the fact that lobster vessel owners will have to select a new fishing zone designation prior to the start of the 1999 fishing year. It is not expected that subsequent annual permit renewals will be impacted by this change.

There are no costs to the federal government associated with the requirement to tag traps. Annualized costs to the federal government for these programs include staff costs and system operation associated with processing the information.

The total estimated costs to the government are $**92,468** (Table VI.1).

Explain potential changes in burden.

In the past three years, the collection of information approved under this family of forms have been revised several times as a result of amendments and revisions to the reporting requirements approved. All burden figures are based on the estimated number of individuals affected. The actual number of vessel operators may differ from these estimates.

Describe any plans for any statistical use of the information.

Results from this collection may be used in scientific, management, technical or general informational publications such as Fisheries of the United States which follows prescribed statistical tabulations and summary table formats. Data are available to the general public on request in summary form only; data are available to NMFS employees in detailed form on a need-to-know basis only.

Explain the reasons why display would be inappropriate.

All forms will display the OMB control number and expiration date along with information relevant to the Paperwork Reduction Act of 1995.

Explain each exception to the certification statement.

All instances of this submission comply with 5 CFR 1320.9.

3. Collection of Information Employing Statistical Methods

No statistical methods are employed in the information collection procedures; the requirements are mandatory for all participants in the indicated fisheries.

VII. SUMMARY

1. Rationale for Alternatives

The alternatives for Federal management of American lobster in the EEZ involve a transfer of the federal legislative authority from the MSA to Section 804 of the ACFCMA; continuation of existing federal lobster regulations; an extension of the existing moratorium on new entrants in the EEZ lobster fishery through December 31, 2003; and implementation of mandatory vessel and dealer reporting requirements concurrent with development of ASMFC's Atlantic Coastal Cooperative Statistics Program. Other provisions, including alternatives for area management in regions encompassed by both federal and state waters, are discussed in Section III.5.

The American lobster since 1983 has been managed in federal waters under the provisions of the

MSA, as amended. Since then, it has been increasingly apparent that Federal regulatory measures alone will not restore the resource, since approximately 80% of lobsters are taken from waters under state vs. Federal jurisdiction. Accordingly, successful rebuilding of American lobster stocks throughout their range requires concurrent resource protection and fishing mortality reduction measures by the Atlantic coastal states from Maine to North Carolina.

The ACFCMA was enacted in December 1993 (seventeen years after passage of the MSA) and, in its preamble, recognized that because no single government entity has exclusive management authority for most Atlantic coastal fishery resources, harvesting of such resources is frequently subject to disparate, inconsistent, and intermittent State and Federal regulation that has been detrimental to resource conservation and sustainable use, and to interests of fishermen. Unlike the MSA, the ACFCMA focuses on interjurisdictional fisheries management for fish and shellfish which occur predominantly in state waters; and assigns responsibility to the federal government (Secretary of Commerce, through NMFS) to support and facilitate effective stewardship of interjurisdictional fisheries throughout their range. The ACFCMA acknowledged the importance for the federal government to complement management actions for species found primarily in state waters by providing the authority to implement regulations in the EEZ portion of the species range which are compatible with the effective implementation of a CFMP and which are consistent with the national standards set forth in the MSA.

As indicated in Section II of the draft EIS, Amendment 3 of the CFMP was approved in December 1997. During development of this amendment, NMFS provided recommendations to ASMFC for revising the Plan to more effectively address the CFMP objectives for ending overfishing and rebuilding American lobster stocks, and for facilitating effective state-federal regulatory collaboration under the ACFCMA. The ASMFC did not accept the NMFS recommendations. The lack of agreement between NMFS and the states on the extent of measures needed to prevent the proliferation of lobster fishing effort and the related failure to agree on continued effort reduction beyond the year 2000, precludes the timely implementation of specific state/federal collaborative initiatives, such as the area management provisions of the CFMP. Nevertheless, the ASMFC at the time of approving Amendment 3, recommended that the Commission's Lobster Board immediately begin developing additional management measures to address overfishing with implementation beginning in 1998.

Given these circumstances, the identification of the appropriate federal legislative authority for American lobster is problematic. However, the overall consensus of the industry and the public management sectors is that existing federal management measures should continue and lobster fishing effort must be capped and reduced, to protect the biological integrity of the resource and the economic viability of the industry. NMFS concludes that on the basis of the best available information, additional resource protection is justified and necessary for ending overfishing of the American lobster and rebuilding stocks to a level that will produce optimum yield.

The current and future prognosis for a sustainable American lobster fishery is necessarily contingent upon ASMFC and state actions, concurrent with federal regulatory authority by NMFS

for EEZ waters, to afford the required level of protection to the American lobster resource. The subsequent ability of NMFS and the ASMFC member states to effectively manage the Northeast's most valuable fishery resource, including state/federal collaboration in the implementation of an improved lobster statistics database and area management alternatives, is dependent upon their collective commitment to manage the American lobster in a unified manner across all jurisdictional boundaries. State and federal approaches for management of American lobster are conceptually consistent; the specific differences concern primarily the magnitude and timing of trap reduction measures. The success of federal and state management efforts in minimizing the potential for a stock collapse of the American lobster are mutually dependent. The federal effort to prevent overfishing in accordance with congressional and legislative requirements is dependent upon timely state implementation of compatible management measures in waters under state jurisdiction. Conversely, the state (ASMFC) efforts are dependent upon federal partnership, including implementation of potential area management for waters that are subject to both state and federal jurisdictional authority. Unfortunately, neither effort can effectively succeed without first closing the gap between current differences between federal and state management actions. The purpose of this EIS is to further solicit industry and public comments concerning the nature of federal regulations to prevent overfishing, and how best to complement interjurisdictional actions with ASMFC to effectively protect the resource.

Since the current and future management of American lobster can not succeed by state or federal regulations alone, complementary federal management in partnership with ASMFC is one which is most effectively accommodated by the interjurisdictional stewardship provisions of the ACFCMA.

2. Consistency with National Standards

The ACFCMA states that the Secretary may implement regulations to govern fishing in the EEZ that are consistent with the national standards set forth in Section 301 of the Magnuson-Stevens Act. The following is a general discussion of the consistency of the alternatives with each of the 10 national standards:

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. The American lobster fishery is currently overfished throughout its range. Management in the EEZ to continue existing regulatory measures, supplemented by measures to cap and reduce lobster fishing effort in the EEZ, would initiate steps to increase egg production in accordance with CFMP management objectives. Since lobsters are harvested predominantly in state waters, the success in ending overfishing will depend upon the implementation of effort reduction measures in both state and federal waters. A trap reduction program over a five year period is envisioned to encourage and expedite a state/federal partnership approach in a time frame which minimizes the potential for a stock collapse of the resource throughout its range. Complementary interjurisdictional actions to reduce fishing effort would also have the added benefit of enhancing the effectiveness of alternative (conservation equivalent) management measures to end overfishing.

A total closure of the EEZ lobster fishery may not provide increased assurance of meeting stock rebuilding goals; may unduly penalize user groups which fish in waters under federal jurisdiction; and may alienate current and future collaborative partnerships between NMFS and the states to effectively manage this interjurisdictional resource. Continuation of existing EEZ management measures alone would not address scientific recommendations to reduce lobster fishing effort and increase egg production to end overfishing.

National Standard 2 requires that conservation and management measures shall be based upon the best scientific information available. The information base for the alternatives to reduce lobster fishing effort incorporates the most up-to-date information available on the stock status of the American lobster, including the results of Stock Assessment Workshop No. 22 (July 1996) and a report on the population dynamics of American lobster, prepared by an independent panel of stock assessment experts. This information confirms the overfished status of American lobster stocks and advocates a reduction of fishing effort to minimize the potential for a stock collapse.

National Standard 3 requires, to the extent practicable, that 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. The alternatives pertain to management of American lobster in federal waters throughout the range of the population from Maine to North Carolina. Three stock areas for the American lobster have been defined: (1) Gulf of Maine; (2) Southern Cape Cod to Long Island Sound; and (3) Georges Bank and south to Cape Hatteras. Only the third stock component is located entirely in federal waters. The other two stocks will be managed as a unit with the third in federal waters, and also in coordination with state jurisdictional management through ASMFC's American Lobster Fishery Management Plan.

National Standard 4 states that conservation and management measures shall not discriminate between residents of different states and, if it becomes necessary to allocate or assign fishing privileges among various U.S. fishermen, such allocation shall be: (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such a manner that no particular individual, corporation, or other such entity acquires an excessive share of such privileges. The possible regulations proposed for the EEZ under the alternatives have been developed to acknowledge the social and economic distinction between the nearshore and offshore EEZ fisheries, and (with the exception of alternatives to ban fishing for and possession of lobster) strive to maintain historical participation levels in the U.S. American lobster fishery. Alternative EEZ regulations, e.g., predicated on area management, can also be considered which can be shown to be conservation equivalent to the uniform measures (see Section III.5).

National Standard 5 provides that conservation and management measures shall, where practicable, promote efficiency in the utilization of fishery resources; except that no measure shall have economic allocation as its sole purpose. The excess of fishing gear is the is the primary reason for the overfished condition of the American lobster resource. The increase in the number of lobster traps in recent years has likely reduced the net income of most lobster fishermen. The

alternatives which involve effort reduction provide a means to reduce excessive levels of fishing gear and to improve economic efficiency. The capping and reduction of fishing effort (e.g., under Alternative 3 in Section III.2.C), however, will likely reduce gross revenues by more than 5%, or require significant changes in business operations for a substantial number of individual entities for at least some portion of the 4-year reduction schedule (see Section V of this EIS). The primary intent of the trap reduction schedule is to afford the necessary level of resource protection to prevent overfishing, and promote rebuilding, of the American lobster population.

National Standard 6 states that conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches. This standard is most applicable to the alternatives outlined in Sections III.2.B-E, and III.3.A-B. These alternatives provide for consideration of variations in fisheries, fishery resources and catches between the "nearshore" and "offshore" EEZ fisheries through the implementation of differential trap limits for the trap gear sector; and through the establishment of a possession limit to maintain historical participation by the nontrap fishery. A higher trap limit for federal permit holders in the offshore EEZ fishery would be predicated upon the historical character and economics of that industry sector. Additionally, alternative management measures enable future consideration of state/federal collaborative efforts, in consultation with the lobster industry, to accommodate specific industry needs on an area by area basis.

National Standard 7 states that conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication. Alternatives which implement a lobster traptag program will increase industry costs (see Section III.2.C and Section VI of this EIS). The program and associated cost would assist in ending overfishing and uncontrolled increases in numbers of traps used by vessel operators. Additional requirements relating to mandatory reporting for federal permit holders would be addressed by NMFS and state fishery management agencies during the development of ASMFC's Atlantic Coastal Cooperative Statistics Program in a manner to avoid unnecessary duplication between state and federal reporting requirements. A Regulatory Impact Review to provide an assessment of costs and benefits of potential regulations is included in Section V of this draft EIS.

National Standard 8 - Fishing Communities states that conservation and management measures shall, consistent with fishery conservation requirements, take into account the importance of fishery resources to fishing communities, with a goal of providing for the sustained participation of such communities, and minimizing adverse economic impacts to the extent practicable. Alternatives involving trip limits for mobile gear impact so few vessels (21) that even their concentration in Massachusetts does not create a recognizable impact for any individual fishing community.

Alternatives which involve trap (effort) reductions may have some initial negative effects on federal lobster permit holders residing in communities and/or industry sectors, which have used more than 800 or 2000 lobster traps per vessel owner in the nearshore and offshore EEZ, respectively in early years. Later years of those alternatives involving trap limits of 480 and 1200

affect greater numbers of vessels. Affected trap vessels are located primarily in Rhode Island, Massachusetts and Maine, with the ports of Point Judith, RI and Gloucester, MA showing the largest numbers of affected vessels under the most restrictive of the trap limits. Generally, however, both total numbers in each sector and numbers per primary port community tend to be small.

Data currently available cannot fully describe levels of fishing effort in the EEZ. However, the provisions associated with the management alternatives allow, in collaboration with ASMFC and state fishery agencies, potential consideration of alternative conservation-equivalent management measures on an area by area basis to meet industry needs and help alleviate any adverse impact the trap reduction schedule might otherwise have on fishing communities.

National Standard 9 - Bycatch states that 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. The alternatives will have no anticipated adverse impacts on bycatch in the EEZ lobster fishery.

National Standard 10 - Safety at Sea states that conservation and management measures shall, to the extent practicable, promote the safety of human life at sea. Some of the alternatives intend to cap and reduce the number of lobster traps used by fishermen over a four-year period. This reduction may result in more frequent tending (reduced soak time) of lobster gear by individual fishermen, but the specific effects of the potential regulations on fishing activities are unknown. The alternatives are not anticipated to impose increased risks upon human life at sea.

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XI. DEFINITIONS AND ACRONYMS

The terms used in this draft EIS have the following meanings:

ACFCMA means the Atlantic Coastal Fisheries Cooperative Management Act.
ALWTRP means the Atlantic Large Whale Take Reduction Plan.
American lobster or lobster means the species Homarus americanus.
ASMFC means Atlantic States Marine Fisheries Commission.
ASRR means Annual Status of the Resource Review.
Berried female means a female American lobster bearing eggs attached to the abdominal appendages.
Carapace length is the straight line measurement from the rear of the eye socket parallel to the center line of the carapace to the posterior edge of the carapace. The carapace is the unsegmented body shell of the American lobster.
CFMP means Coastal Fishery Management Plan for American Lobsters, as amended.
CFR means Code of Federal Regulations.
charter/head boat means any vessel carrying fishing persons or parties for a per capita fee or for a charter fee.
CMT means Conservation Management Team, see also EMT and LCMT.
Dealer means any person who receives American lobsters for a commercial purpose from the owner or operator of a vessel issued a valid Federal vessel permit under this part, other than exclusively for transport on land.
Dive vessel means any vessel carrying divers for a per capita fee or a charter fee.
EEZ means Exclusive Economic Zone contiguous to the territorial sea of the U.S. and extending seaward 200 nautical miles.
EFH means Essential Fish Habitat, those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.
EIS means Environment Impact Statement.
EMT means Effort Management Team, see CMT and LCMT also.
ESA means Endangered Species Act.
Escape vent means an opening in a lobster trap designed to allow lobster smaller than the legal minimum size to escape from the trap.
Fishery Management Plan (FMP) means the Fishery Management Plan for American Lobsters, as amended.
Fishing trip or trip means a period of time during which fishing is conducted, beginning when the vessel leaves port and ending when the vessel returns to port.
Ghost panel means a panel, or other mechanism, designed to allow for the escapement of lobster after a period of time if the trap has been abandoned or lost.
Gross registered tonnage means the gross registered tonnage specified on the U.S. Coast Guard documentation for a vessel.
Land means to enter port with fish on board, to begin offloading fish, or to offload fish.

LBZ means Lobster Buffer Zone, a ten mile wide area dividing the EEZ Nearshore Zone from the EEZ Offshore Zone.

Lobster Conservation Management Team (LCMT) means a group of technical experts made up of representatives from the Commission, NMFS, the appropriate states, and a group of American lobster industry representatives (appointed by the Commission), per management area, to each LCMT.

Lobster pot trawl means a number of lobster traps, all attached to a single groundline.

Lobster Scientific Monitoring Committee (LSMC) means a group of technical experts made up of representatives knowledgeable on the American lobster fishery.

LOF means a List of Fisheries which classifies U.S. fisheries according to the rate of serious injury and mortality of marine mammal stocks incidental to each fishery.

MFCMA means Magnuson-Stevens Fishery Conservation Management Act.

MMPA means the Marine Mammal Protection Act

MSA means Magnuson-Stevens Fishery Conservation Management Act.

NEFMC means New England Fishery Management Council

Net tonnage means the net tonnage specified on the U.S. Coast Guard documentation for a vessel.

Offload means to begin to remove, to remove, to pass over the rail, or otherwise take away fish from any vessel.

Overfishing definition the American lobster resource is recruitment overfished when, throughout its range, the fishing mortality rate (F), given the regulations in place at that time under the suite of regional management measures, results in a reduction in estimated egg production per recruit to 10 percent or less of a non-fished population ($F_{10\%}$).

Operator means the master or captain of the vessel, or other individual on board the vessel, who is in charge of that vessel's operations.

PBR means Potential Biological Removal, or the number of animals which can be removed from a stock annually by human activities without preventing that stock from reaching or maintaining its optimum sustainable population size.

Postmark means independently verifiable evidence of date of mailing, such as U.S. Postal Service postmark, United Parcel Service (U.P.S.) or other private carrier postmark, certified mail receipt, overnight mail receipt, or receipt received upon hand delivery to an authorized representative of NMFS.

Recreational fishing means fishing that is not intended to, nor results in the barter, trade, or sale of fish.

Recreational fishing vessel means any vessel from which no fishing other than recreational fishing is conducted. Charter and party boats and dive boats are not considered recreational fishing vessels.

Regional Administrator means the Administrator, Northeast Region, NMFS, 1 Blackburn Drive, Gloucester, MA 01930-2298, or a designee.

Re-rig or re-rigged means physical alteration of the vessel or its gear in order to transform the vessel into one capable of fishing commercially for American lobsters.

SAR means Stock Assessment Report.

SAW means Stock Assessment Workshop.

Scrubbing is the forcible removal of eggs from a berried female American lobster.

SFA means Sustainable Fisheries Act.

TAC means Total Allowable Catch, where harvest rates or landings are monitored and may be used as a tool in evaluating the effectiveness of management regulations.

Under agreement for construction means that the keel has been laid and that there is a written agreement to construct a fishing vessel.

V-notched American lobster means any female American lobster bearing a V-shaped notch in the flipper next to and to the right of the center flipper as viewed from the rear of the lobster (underside of the lobster down and tail toward the viewer).

V-shaped notch means a straight-sided triangular cut, without setal hairs, as least 1/4 inch (0.64 cm) in depth and tapering to a point.

Whole American lobster means a lobster with an intact and measurable body (tail and carapace). A cull whole American lobster is an American lobster with one or both claws missing.