

AMENDMENT #1 TO THE ATLANTIC SQUID FISHERY MANAGEMENT PLAN

AND

SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

November, 1979

Mid-Atlantic Fishery Management Council

in cooperation with the

National Marine Fisheries Service

Draft Approved by MAFMC: 9 August 1979

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ABBREVIATIONS USED IN THIS DOCUMENT

CFR - Code of Federal Regulations
DAH - Domestic Annual Harvest - the capacity of US fishermen to harvest squid and their intent to use that capacity
DAP - Domestic Annual Processing - the capacity of US processors to process squid and their intent to use that capacity
EIS - Environmental Impact Statement
fathom - 6 feet
FCMA - Fishery Conservation and Management Act
FCZ - Fishery Conservation Zone
fishing year - the 12 month period beginning April 1
FMP - Fishery Management Plan
FRG - Federal Republic of Germany
GDR - German Democratic Republic
GIFA - Governing International Fishery Agreement
ICNAF - International Commission for the Northwest Atlantic Fisheries
km - kilometer
mt - metric ton = 2204.5 pounds
MSY - Maximum Sustainable Yield
NMFS - National Marine Fisheries Service
NOAA - National Oceanic and Atmospheric Administration
OY - Optimum Yield
PMP - Preliminary Fishery Management Plan
RA - Regulatory Analysis
SA - Subarea or Statistical Area
Secretary - Secretary of Commerce
SEIS - Supplemental Environmental Impact Statement
TAC - Total Allowable Catch
TALFF - Total Allowable Level of Foreign Fishing

II. SUMMARY

The Fishery Management Plan (FMP) for Atlantic Squid was approved by the Assistant Administrator for Fisheries, National Oceanic and Atmospheric Administration (NOAA) on 6 June 1979. The FMP is for fishing year 1979-1980 (1 April 1979 - 31 March 1980). The basic purpose of Amendment #1 is to extend the FMP beyond fishing year 1979-1980.

The management unit for the FMP is all Loligo pealei and Illex illecebrosus under US jurisdiction in the northwestern Atlantic.

The objectives of the FMP are to:

1. Achieve and maintain optimal stocks for future recruitment.
2. Prevent destructive exploitation of squid species.
3. Minimize capture of nontarget species.
4. Achieve efficiency in harvesting and use.
5. Maintain adequate food supplies for predator species, recognizing that squid are also predators.
6. Minimize user conflicts.
7. Improve understanding of the condition of the stocks.
8. Encourage increased American participation in the squid fishery.

The management measures in the FMP are:

1. The 1979-1980 fishing year Optimum Yield (OY) for Illex is 30,000 metric tons (mt) and the 1979 - 1980 fishing year Optimum Yield for Loligo is 44,000 mt. The US capacity, both harvesting and processing, is 10,000 mt of Illex and 14,000 mt of Loligo. The foreign surplus (TALFF) is 20,000 mt of Illex and 30,000 mt of Loligo.
2. Any vessel owner or operator (foreign or domestic) desiring to catch squid or transport or deliver for sale any squid, must possess the appropriate valid registration or permit from the NMFS. This does not apply to individual US fishermen catching squid for their personal use.
3. Foreign fishing for squid is restricted to five designated areas.
4. Appropriate gear restrictions are imposed on foreign vessels fishing for squid.
5. Periodic reports on squid catches must be filed by foreign and domestic fishermen. Domestic dealers and processors must submit weekly reports on any transactions involving squid.
6. Incentives are provided, as discussed in Section XIII-8, to encourage development of the domestic squid industry.
7. A reassessment of the estimated US harvesting capacity for squid will be conducted annually.

Alternative management measures considered for Amendment #1 were:

1. Take No Action At This Time - This alternative would mean that the FMP would lapse. The NMFS would be required to prepare a Preliminary Management Plan (PMP). PMPs regulate foreign, but not domestic, fishermen. The effect of this alternative would be that the data that would be collected on domestic fishing and processing efforts as a result of this plan could not be collected as effectively, and assessments of the scope and development of the domestic fishery would not be as accurate as they would be with the FMP.

2. Continue The FMP For Fishing Year 1980 - 1981 With No Other Changes - This would mean that the FMP would need to be amended again prior to the beginning of fishing year 1981 - 1982. The following quantities would apply to fishing year 1980 - 1981:

	<u>Illex</u>	<u>Loligo</u>
OY	30,000 mt	44,000 mt
DAH	10,000	14,000
DAP	10,000	14,000
TALFF	20,000	30,000

3. Continue The FMP Without Time Limits With No Other Changes - This would eliminate the need for annual amendments to the FMP unless necessitated by new biological or other data. The following annual quantities would result:

	<u>Illex</u>	<u>Loligo</u>
OY	30,000 mt	44,000 mt
DAH	10,000	14,000
DAP	10,000	14,000
TALFF	20,000	30,000

4. Provide A Reserve For Illex and Loligo - This concept is useful in a developing US fishery when accurate estimates of DAH and DAP cannot be made at the beginning of the fishing year. A portion of the OY would be placed in reserve and distributed during the fishing year to DAH and TALFF based on performance of the US harvesting sector and the most recent stocks assessments. This alternative could be combined with a one year extension, a two year extension, or an indefinite extension of the FMP. The following annual quantities would result:

	<u>Illex</u>	<u>Loligo</u>
OY	30,000 mt	44,000 mt
DAH	5,000	7,000
DAP	5,000	7,000
TALFF	12,000	18,000
RESERVE	13,000	19,000

5. Increase OYs - This may result in a reduction in future productivity of the stocks assuming a moderate stock-recruitment relationship. The relationship, however, between stock size and recruitment for either species is unknown. If recruitment is independent of spawning stock, increases in OYs could occur without risk to future productivity. Sufficient information is not now available with which to estimate the impact of increased OYs for Loligo or Illex until responses of the squid populations, particularly Illex, to present OY levels are observed.

6. Reduce OYs - This would decrease the chances of a reduction in future productivity of these stocks, but unless there is a strong stock recruitment relationship, the most likely result is that a resource available for harvest would be underutilized. This is in part predicated on the fact that the OYs selected for

both Loligo and Illex take into consideration the short life spans of the species. Based on past catch estimates and trends in abundance, there is little justification for reducing the OYs for Loligo or Illex below these levels.

7. Combine The Squid And Butterfish FMPs - The Atlantic squid and butterfish fisheries are currently managed separately. The fisheries are related. Coordinated management of these fisheries would have substantive advantages in the long-run because it could facilitate comprehensive evaluation of both fisheries together. From an administrative standpoint, the regulatory process would be simplified by having one set of regulations rather than two sets of identical regulations. Merger should also result in administrative cost savings, not only in the area of regulations, but also in the amendment process.

8. Combine Objectives 5 And 7 Into A New Objective 5 And Designate Objective 8 As Objective 7 - The new Objective 5 would read "Improve understanding of the condition of the stocks, including predator-prey relationships."

The Council has adopted Alternatives 4 and 8, with an indefinite extension of the FMP, as the final management measures for Amendment #1. In addition, the Council intends to combine the Squid and Butterfish FMPs as soon as possible following approval of the Butterfish FMP by the Secretary of Commerce.

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IV. INTRODUCTION

This Amendment #1 to the Atlantic Squid FMP is designed to extend the FMP beyond the end of fishing year 1979-1980 (31 March 1980) and to make appropriate changes to Optimum Yield and quotas. The basic data about the fishery has not changed since the FMP was approved.

The latest stock assessment is presented in Appendix I of Amendment #1. That assessment indicates that the condition of the stock does not warrant a change in the Maximum Sustainable Yields established in the FMP and does not place a biological constraint on the specification of Optimum Yields (OY) up to the MSY levels.

The alternatives presented in Amendment #1 are essentially refinements of the regime in the FMP.

V. DESCRIPTION OF STOCKS

The most recent stock assessment prepared by the Northeast Fisheries Center, NMFS, is presented as Appendix I to this Amendment. This document presents information regarding the squid stocks from the Gulf of Maine through the Midle Atlantic area, and updates the assessment presented in the original FMP. The assessment appended to this Amendment provides information on US and foreign catches, catch per unit of effort indices, 1978 spring, summer and autumn NMFS research trawl survey results, and 1979 spring survey results.

This assessment indicates the abundance of Loligo in 1979 to be probably of a magnitude "comparable to the long-term average". The NMFS survey data also suggest that Illex abundance may be at a near-record level in 1979. There are no data available from this assessment which would warrant, in the opinion of the Council, any changes from the Optimum Yields specified by the FMP.

VI. DESCRIPTION OF HABITAT

No data are available which would necessitate a change to this section of the FMP.

VII. FISHERY MANAGEMENT JURISDICTION, LAWS, AND POLICIES

No data are available which would necessitate a change to this section of the FMP.

VIII. DESCRIPTION OF FISHING ACTIVITIES

No data are available which would necessitate a change to this section of the FMP.

IX. DESCRIPTION OF ECONOMIC CHARACTERISTICS OF THE FISHERY

No data are available which would necessitate a change to this section of the FMP.

X. DESCRIPTION OF BUSINESSES, MARKETS, AND ORGANIZATIONS ASSOCIATED WITH THE FISHERY

No data are available which would necessitate a change to this section of the FMP.

XI. DESCRIPTION OF SOCIAL AND CULTURAL FRAMEWORK OF DOMESTIC FISHERMEN AND THEIR COMMUNITIES

No data are available which would necessitate a change to this section of the FMP.

XII. DETERMINATION OF OPTIMUM YIELD

XII-1. Specific Management Objectives

The Mid-Atlantic Council has adopted eight objectives to guide management and development of the squid fishery in the northwestern Atlantic. They are:

1. Achieve and maintain optimum stocks for future recruitment.
2. Prevent destructive exploitation of squid species.
3. Minimize capture of nontarget species.
4. Achieve efficiency in harvesting and use.
5. Maintain adequate food supply for predator species, recognizing that squid are also predators.
6. Minimize user conflicts.
7. Improve understanding of the condition of the stocks.
8. Encourage increased American participation in the squid fishery.

XII-2. Description of Alternatives

Alternative management measures considered for Amendment #1 were:

1. Take No Action At This Time - This alternative would mean that the FMP would lapse. The NMFS would be required to prepare a Preliminary Management Plan (PMP). PMPs regulate foreign, but not domestic, fishermen. The effect of this alternative would be that the data that would be collected on domestic fishing and processing efforts as a result of this plan could not be collected as effectively, and assessments of the scope and development of the domestic fishery would not be as accurate as they would be with the FMP.

2. Continue The FMP For Fishing Year 1980-1981 With No Other Changes - This would mean that the FMP would need to be amended again prior to the beginning of fishing year 1981-1982. The following quantities would apply to fishing year 1980-1981:

	<u>Illex</u>	<u>Loligo</u>
OY	30,000 mt	44,000 mt
DAH	10,000	14,000
DAP	10,000	14,000
TALFF	20,000	30,000

3. Continue The FMP Without Time Limits With No Other Changes - This would eliminate the need for annual amendments to the FMP unless necessitated by new biological or other data. The following annual quantities would result:

	<u>Illex</u>	<u>Loligo</u>
OY	30,000 mt	44,000 mt
DAH	10,000	14,000
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TALFF	20,000	30,000

4. Provide A Reserve For Illex And Loligo - This concept is useful in a developing US fishery when accurate estimates of DAH and DAP cannot be made at the beginning of the fishing year. A portion of the OY would be placed in reserve and distributed

during the fishing year to DAH and TALFF based on performance of the US harvesting sector and the most recent stocks assessments. This alternative could be combined with a one year extension, a two year extension, or an indefinite extension of the FMP. The following quantities would result:

	<u>Illex</u>	<u>Loligo</u>
OY	30,000 mt	44,000 mt
DAH	5,000	7,000
DAP	5,000	7,000
TALFF	12,000	18,000
RESERVE	13,000	19,000

5. Increase OYs - This may result in a reduction in future productivity of the stocks assuming a moderate stock-recruitment relationship. The relationship, however, between stock size and recruitment for either species is unknown. If recruitment is independent of spawning stock, increases in OYs could occur without risk to future productivity. Sufficient information is not now available with which to estimate the impact of increased OYs for Loligo or Illex until responses of the squid populations, particularly Illex, to present OY levels are observed.

6. Reduce OYs - This would decrease the chances of a reduction in future productivity of these stocks, but unless there is a strong stock recruitment relationship, the most likely result is that a resource available for harvest would be underutilized. This is in part predicated on the fact that the OYs selected for both Loligo and Illex take into consideration the short life spans of the species. Based on past catch estimates and trends in abundance, there is little justification for reducing the OYs for Loligo or Illex below these levels.

7. Combine The Squid And Butterfish FMPs - The Atlantic squid and butterfish fisheries are currently managed separately. The fisheries are related. Coordinated management of these fisheries would have substantive advantages in the long-run because it could facilitate comprehensive evaluation of both fisheries together. From an administrative standpoint, the regulatory process would be simplified by having one set of regulations rather than two sets of identical regulations. Merger should also result in administrative cost savings, not only in the area of regulations, but also in the amendment process.

8. Combine Objectives 5 And 7 Into A New Objective 5 And Designate Objective 8 As Objective 7 - The new Objective 5 would read "Improve understanding of the condition of the stocks, including predator-prey relationships."

XII-3. Analysis of Beneficial And Adverse Impacts Of Potential Management Options

Alternative 1 would remove regulation of the US fishery. This could lead to overfishing as this fishery expands. It would remove the data reporting requirements on US fishermen and processors. Since this alternative would not regulate US fishermen and processors, there would be a governmental cost saving.

Alternatives 2 and 3 are similar in their impacts, except that Alternative 2 would require an amendment to extend the FMP beyond fishing year 1981 - 1982, even though no other changes were required. The primary adverse impact from these alternatives is that they could lead to a closure of the US fishery if landings reached the DAH level. US squid landings have been increasing, although data are too limited to warrant increases in DAH and DAP above those proposed at this time. The Council has conducted a limited survey of processors and believes that the DAP quantities specified are reasonable. Since the TALFFs specified in these alternatives are the same as the TALFFs in the original FMP, the impacts of these alternatives should not differ from those of the original FMP on foreign fishermen.

Alternative 4 is intended to address the developing nature of the US fishery. While

available data support conservative estimates of DAH and DAP, the developing nature of the US fishery leads to the conclusion that provision should be made for such development, even though it cannot be accurately projected. By including a Reserve, this possible growth in the US fishery is provided for. A portion of the Reserve not needed by the US fishery could be reallocated to TALFF if the latest stock assessments available at the time of reallocation indicate that such action is warranted. This alternative would have an adverse impact of foreign fishermen relative to the original FMP in that the initial TALFFs would be substantially smaller than the TALFFs in the original FMP. However, the condition of the stock (see Appendix I) does not justify an increase in the OYs proposed.

Alternatives 5 and 6 address the question of alternative OYs. The Council has concluded that, given the latest assessment of stock condition (Appendix I), there is no reason to change the OYs from those in the original FMP. Lowering the OYs could lead to wasted resources and increased OYs could lead to overfishing.

Alternative 7 has two advantages. The first is a governmental cost saving associated with one FMP and amendments thereto, one set of regulations, one set of reports, and one permit system rather than two. The second advantage is that the combination of the two FMPs could facilitate joint management of two related fisheries. For example, the TALFF in the original Butterfish FMP was primarily intended to meet foreign by-catch requirements in the Loligo fishery. This problem could be addressed in a more meaningful fashion if both species were managed jointly in one FMP. In addition, the developing US fisheries for both butterfish and squid seem to involve the same fishermen and processors. A joint FMP could greatly facilitate future impact assessments on the US fishery.

Alternative 8 is intended to address the lack of information on predator-prey relationships. Objective 4, "Maintain adequate food supply for predator species, recognizing that squid are also predators" implies there is adequate knowledge so that management measures to achieve objective 4 could be implemented. The revised objective "Improve understanding of the condition of the stocks, including predator-prey relationships" seems more realistic at this time.

XII-4. Tradeoffs between The Beneficial And Adverse Impacts Of The Preferred Management Option

The preferred option is a combination of alternatives 4, 7, and 8 with a multi-year extension of the FMP. This option would provide for growth of the US fishery. While the DAH for Illex is 5,000 mt and the DAH for Loligo is 7,000 mt, the Reserve amounts added to DAH allow for a maximum US harvest of 18,000 mt of Illex and 26,000 mt of Loligo. The initial DAH and DAP estimates are considered reasonable, given available data. It must be noted that, in this FMP, processing is defined to include freezing. Therefore, since virtually all squid is at least frozen, DAP is estimated equal to DAH. It must be recognized that this is an estimate based on the best data available to the Council at the time Amendment #1 was finalized and that during the implementation of the amended FMP the fishery may develop so that DAH exceeds DAP. Such difference should not be considered a conflict with the objectives of the amended FMP. For example, the management measures set forth in Section XIII-3 specifically provide for the development of joint ventures, the approval of which would require that DAH exceed DAP.

The Council recognizes that joint ventures for squid may be developed. Given the uncertain rate of development of the domestic harvesting and processing sectors, it is impossible to reasonably estimate any difference between DAH and DAP at this time. However, the combined values of the DAHs plus Reserves for both species should permit the development of the US fishery as well as any joint ventures. The Council's first priority is the development of the US harvesting and processing sectors in a coordinated fashion. However, it is the Council's intent that joint ventures be considered for both species on a case by case basis, with the primary

criterion for approval of such joint ventures being the extent to which domestic processors can process the catch of US harvestors. If, during the life of the plan, US harvesting capacity in fact exceeds US processing capacity and if the development of a joint venture to use the excess harvesting capacity would not harm the development of the US processing sector, such joint venture proposals could be considered.

It is recognized that the initial TALFFs specified under the preferred option could have an adverse impact on foreign fishermen relative to the quantities specified in the original FMP. However, there is a possibility that foreign fishermen would receive some of the Reserve. This management strategy seems justified in light of the need to address the needs of the developing US fishery while not setting OYs at levels that would lead to overfishing.

XII-5. Specification of Optimum Yield

The Mid-Atlantic Fishery Management Council has determined that the annual optimum yield of Loligo should be set at 44,000 mt. This is equal to the best conservative estimate of MSY for this species. The Mid-Atlantic Council has determined that OY should be equivalent to MSY for this species for the following reasons: (1) the best and most recent scientific evidence indicates that this species is neither overfished nor depleted in abundance, (2) the short life-span of this species suggests that the portion of the MSY not taken through fishing would be lost (with no resultant benefit to future recruitment) through natural mortality, and (3) overall demand for squid is great and probably surpasses the combined OYs described in this FMP. Thus, harvesting at the MSY level should allow for the greatest benefit to the nation while guarding against overfishing.

Scientific information for Illex is much less complete than that for Loligo. Information available to date suggests that the MSY for Illex in ICNAF SA 5 and 6 (equivalent for all practical purposes to the management unit specified for this FMP) may be approximately 40,000 mt for a moderate to strong stock-recruitment relationship. In some years this amount may be too high, based on USSR estimates of stock size and the application of a 37% exploitation rate (section V-2 of the original FMP).

The Council has determined that an Illex harvest of 30,000 mt will be the Optimum Yield. The Council has determined that this is the greatest harvest consistent with sound conservation and management principles. The following factors were taken into consideration in the establishment of this OY: (1) uncertainties as to Illex population structure in the northwest Atlantic and stock-recruitment relationships; (2) environmental considerations stemming from the uncertainties of (1) and recognition of the important role Illex plays as prey in the ecosystem; (3) recognition of the fact that current NMFS autumn and spring survey systems are suboptimal for this species and produce untimely biological data for Illex; (4) recognition of the developing nature of this fishery; (5) the intent to accommodate to a limited degree the foreign squid fishery which will experience declines in its Loligo catches over historic levels. This OY for Illex is greater than the peak total catch of this species in ICNAF SA 5 and 6, while simultaneously it is conservative biologically.

It is the Council's intention to provide for a cautious development of this fishery, at least until such time as biological and ecological information about this species is more fully developed.

The Council made these determinations of Optimum Yield in light of the biological and socio-economic data and analyses presented earlier in the plan. In estimating DAH the Council has considered not only the historical domestic harvest but also the development of the fishery. The Council has been advised by fishermen and through the recently completed survey of processors that a number of US vessels will be

added to this fishery in the near future.

In setting the initial DAH for Loligo at 7,000 mt and for Illex at 5,000 mt, the Council has attempted to reflect not only the past performance of US fishermen in this fishery, but the anticipated change in traditional fishing patterns and practices which the Council reasonably anticipates will take place in the next few years. The Council has set these levels in accordance with the provision of a Reserve of 19,000 mt for Loligo and 13,000 mt for Illex to allow for an expansion of domestic effort in the fishery. As shown in Figure 1 and Tables 1 and 2, US squid landings have been increasing, with catches for the first nine months of 1979 about 3 times and 2.5 times the 16-year average for Loligo and Illex, respectively.

Traditionally, squid has usually been harvested only as an incidental catch to commercially more valuable species. Consequently, domestic catch has been small in comparison with the total catch of squid by vessels of foreign nations. For example, the US domestic catch of squid in both 1975 and 1976 amounted to only five percent of the total catch of squid in the northwest Atlantic Ocean (ICNAF SA 5 and 6). Recently, however, squid has become a more sought after commercial species due, at least in part, to an increase in ex-vessel price. The average ex-vessel price of squid has been on the rise for a number of years. Within the past year or so, the availability of foreign markets to US-caught squid has caused a dramatic increase in this price. The Council believes that ex-vessel squid prices will remain at attractive levels. This belief stems from the continuing great demand for squid by foreign markets and the diminution in allocations of squid in the northwest Atlantic Ocean available to foreign nations as represented by the TALFF.

In the past, top quality squid has commanded a good price, competitive with other finfish species so long as total quantity remained small. As a result, domestic fishermen have had no incentive to harvest squid intensely. Whenever catch rates increased even slightly, significant decreases in price would occur because of the domestic market's inability to absorb increased product supply. With an expanded market from exports, ex-vessel price structures of Loligo and Illex should change. So long as domestic fishing interests can assure foreign markets of an adequate product supply meeting all specified product criteria, prices will remain at stable levels throughout the fishing season. This should be an added inducement to develop further the domestic squid fishery.

Aside from the incentive represented by current squid ex-vessel prices, the Council expects the current restrictive quotas for regulated species such as groundfish and surf clam and a decline in abundance of presently non-regulated species such as scallop will provide inducement for fishermen and investors to transfer effort and capital into the squid fishery. The Council has been advised that significant numbers of vessels in the New England and Mid-Atlantic areas are currently being outfitted to fish exclusively for squid. In consequence, both the incidental nature and brief duration of the domestic fishery are expected to change. This will have a dramatic effect on the level of catch by domestic fishermen.

In addition to accommodating any increase in effort in the domestic squid fishery, the present level of domestic capacity is intended to provide for that part of the domestic catch which is as yet unquantified. Squid represent an important source of bait in the recreational fishery. While data on the recreational fishery are not well developed, reports indicate a minimum of 8,400 pounds of squid landed by private recreational anglers as bait in 1973 in the States of Massachusetts and Rhode Island alone. The Council believes that this figure, when expanded to include those unreported amounts of squid caught as bait by private recreational vessels coupled with the increased levels of recreational catch since 1973, may realistically be 50 mt for these two States. Once this bait squid catch is projected for the entire east coast, the level may be substantial. These factors must be considered from a fishery management standpoint. Other aspects of the domestic squid fishery for which there are no data include catch by private

recreational anglers for their own use and the incidental catch of squid in other bottom-trawl fisheries which is discarded at sea as trash.

While the Council may adopt a different management strategy to address the various components of the domestic squid fishery in the future, the Council has determined, based upon the facts and opinions presented to it, that the present level of domestic capacity is reasonable to account for both increases in effort and the unquantified components of the fishery discussed above. As effort levels stabilize, reporting provides a more comprehensive view of the fishery, and angler surveys provide some estimate of the magnitude of the private recreational catch, the Council will be better able to estimate the anticipated domestic harvest for an upcoming fishing year. Until that time, however, the Council believes that the most reasonable approach in light of the uncertainties concerning domestic catch is to set a domestic harvesting capacity which is as realistic as possible, and to use a Reserve to provide for adjustment to DAH if the fishery grows more rapidly than current data indicate. If US fishermen do not harvest their entire quota plus the Reserve, and if biological conditions warrant, then reallocations to TALFF are provided for in Section XIII-3 of the this Amendment.

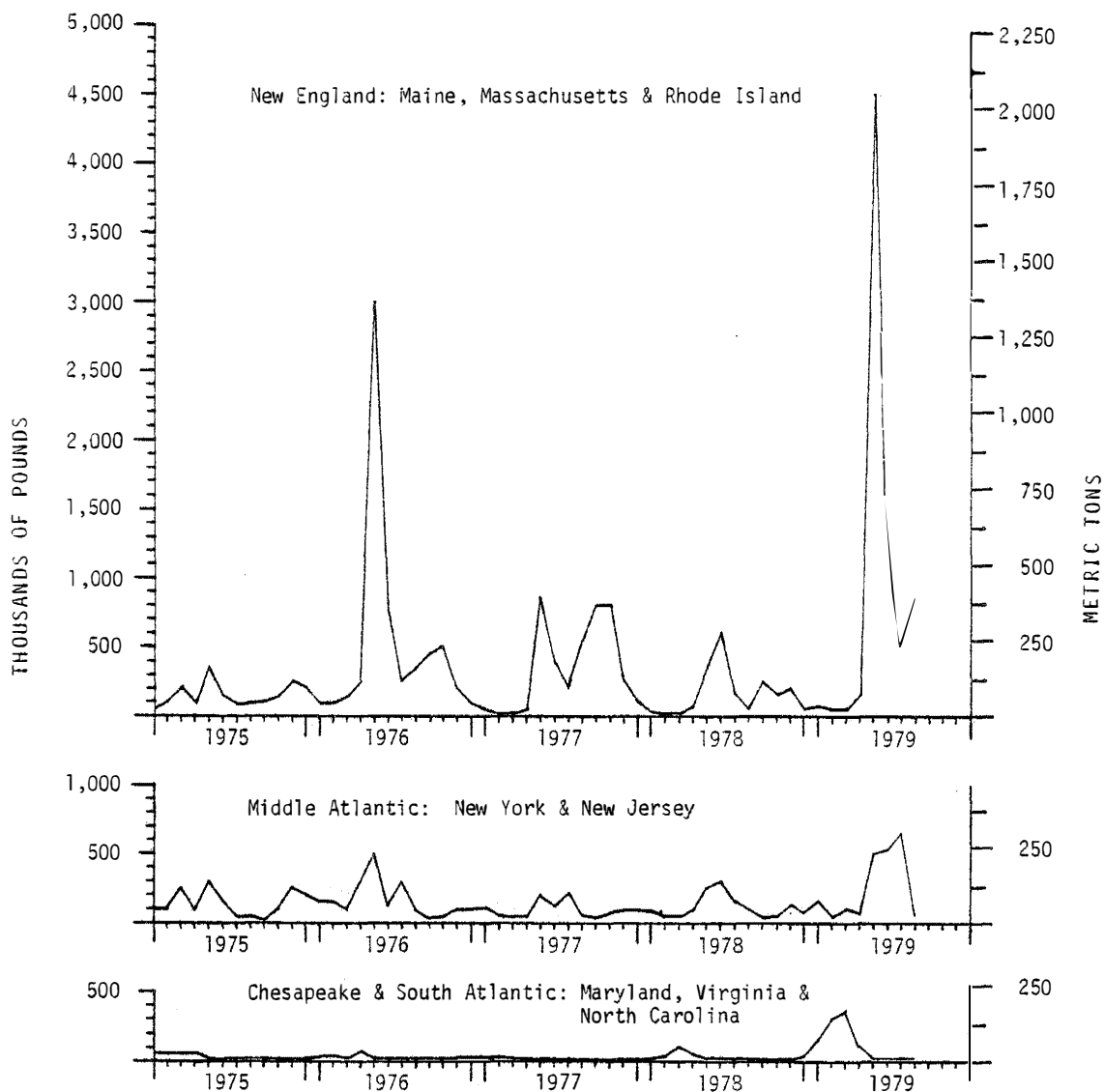


Figure 1. US Squid (*Loligo pealei* and *Illex illecebrosus*)
Landings By Region By Month
January, 1975 -- August, 1979

Table 1. US And Foreign Catches Of Loligo In US Waters, 1963 - 1979
(metric tons)

<u>Year</u>	<u>US Landings</u>	<u>US Landings: % of Total</u>	<u>Foreign Landings</u>	<u>Foreign Landings: % of Total</u>	<u>Total Landings</u>
1963	1,249	100	0	0	1,249
1964	572	100	4	0	576
1965	709	88	99	12	808
1966	722	76	226	24	948
1967	1,125	67	553	33	1,678
1968	1,083	31	2,366	69	3,449
1969	898	10	8,205	90	9,103
1970	652	2	35,532	98	36,184
1971	727	4	16,020	96	16,747
1972	742	2	36,047	98	36,789
1973	1,100	3	41,840	97	42,940
1974	2,141	6	32,613	94	34,754
1975	1,621	5	32,181	95	33,802
1976	3,602	14	21,682	86	25,284
1977	1,088	7	15,586	93	16,674
1978 ¹	1,476	14	9,356	86	10,832
1979 ^{1,2}	3,583	27	9,784	73	13,367

¹ Preliminary

² 1 January - 15 October for Maine - Virginia; 1 January - 30 September for States south of Virginia; 1 January - 20 October for foreign countries

Table 2. US And Foreign Catches Of Illex In US Waters, 1963 - 1978
(metric tons)

<u>Year</u>	<u>US Landings</u>	<u>US Landings: % of Total</u>	<u>Foreign Landings</u>	<u>Foreign Landings: % of Total</u>	<u>Total Landings</u>
1963	810	100	0	0	810
1964	358	100	0	0	358
1965	444	85	78	15	522
1966	452	79	118	21	570
1967	704	71	288	29	992
1968	678	20	2,712	80	3,390
1969	562	40	847	60	1,409
1970	408	58	293	42	701
1971	455	8	4,984	92	5,439
1972	472	4	11,441	96	11,913
1973	530	4	13,166	96	13,696
1974	148	1	20,375	99	10,523
1975	107	1	17,779	99	17,886
1976	229	1	24,707	99	24,936
1977	1,024	4	23,293	96	24,317
1978 ¹	385	2	17,310	98	17,695
1979 ^{1,2}	1,231	9	12,544	91	13,785

¹ Preliminary

² 1 January - 15 October for Maine - Virginia; 1 January - 30 September for States south of Virginia; 1 January - 20 October for foreign countries

Table 3. Maximum Sustainable Yield, Optimum Yield, Domestic Annual Harvest, Domestic Annual Processing, Reserve, and TALFF (metric tons)

Species	MSY	OY	DAH	DAP	Reserve	TALFF
<u>Illex</u>	40,000	30,000	5,000	5,000	13,000	12,000
<u>Loligo</u>	44,000	44,000	7,000	7,000	19,000	18,000

Relationships Between This FMP and The National Standards

Section 301(a) of the Fishery Conservation and Management Act states that: "Any fishery management plan prepared, and any regulation promulgated to implement such plan ... shall be consistent with the following national standards for fishery conservation and management." The following is a discussion of the standards and how this FMP meets them:

"(1) Conservation and management measures shall prevent overfishing while achieving, on a continuous basis, the optimum yield from each fishery." The best scientific evidence available indicates that neither species of squid is currently overfished nor at a reduced level of abundance. Harvests of both species at the Optimum Yield levels described in this Amendment should not endanger future harvests at comparable levels.

"(2) Conservation and management measures shall be based upon the best scientific information available." This FMP is based on the best and most recent scientific evidence currently available.

"(3) To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination." This FMP meets the requirements of this standard by simultaneously managing Loligo and Illex in a complementary manner.

"(4) Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, 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 entity acquires an excessive share of such privileges." The OYs and DAH estimates described in this Amendment will accommodate all US demand for squid in the commercial and recreational fisheries without prejudice to residents of any State. The seasonal movements of these species make it extremely unlikely that fishermen of any State or region could harvest the US capacity before the species become available to other domestic fishermen.

"(5) Conservation and management measures shall, where practicable, promote efficiency in the utilization of the fishery resources; except that no such measure shall have economic allocation as its sole purpose." Since domestic fisheries presently harvest both squid species significantly beneath the respective OY levels, no economic inefficiencies due to surplus investment or fishing effort, or similar considerations, should result from the provisions of this Amendment. As US capacity estimates for squid anticipate some redirection to these species of domestic commercial fishing effort from traditional and currently depleted resources, such as groundfish, this Amendment will promote greater overall economic efficiency in domestic commercial fisheries.

"(6) Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches." This Amendment and the OYs and allocations described herein take into account possible fluctuations in species abundance and expected trends in US demand for

squid.

"(7) Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication." The management measures outlined in this Amendment are consistent with and complement, but do not duplicate, management measures contained in other FMPs or PMPs. Costs of management should not differ significantly from the costs associated with implementing the original FMP.

XIII. MEASURES, REQUIREMENTS, CONDITIONS, OR RESTRICTIONS PROPOSED TO ATTAIN MANAGEMENT OBJECTIVES

Note: All references to the Foreign Fishing Regulations are intended to adopt by reference the Foreign Fishing Regulations as they may exist at the time of the adoption of this FMP by the Secretary of Commerce and as they may be amended from time to time following FMP adoption.

XIII-1. Permits and Fees

No changes are proposed in Amendment #1.

XIII-2. Time and Area Restrictions

Foreign nations fishing for squid shall be subject to the time and area restrictions set forth in part 611.50 of Title 50 Code of Federal Regulations (CFR).

Fixed Gear Avoidance

Foreign nations fishing for squid shall be subject to the fixed gear avoidance regulations set forth in part 611.50(e) of 50 CFR.

XIII-3. Catch Limitations

The fishing year for both species shall be the twelve (12) month period beginning 1 April.

The initial annual Total Allowable Levels of Foreign Fishing are 12,000 mt of Illex and 18,000 mt of Loligo.

The initial annual quotas for US fishermen are 5,000 mt of Illex and 7,000 mt of Loligo.

It is the policy of the Mid-Atlantic Fishery Management Council that the Assistant Administrator for Fisheries, NOAA, be allowed to make an in-season adjustment to the estimated Domestic Annual Harvest (DAH) and Total Allowable Level of Foreign Fishing (TALFF) for Loligo and Illex based on the criteria specified by the Council as set forth below. The Council further establishes that any allocation made by the Assistant Administrator in consultation with the Council must be consistent with the objectives of this FMP. Any in-season adjustment will be made on a species-specific basis due to the differing life cycles of and fisheries for Loligo and Illex. An adjustment is a temporary in-season increase of DAH and annual domestic quota, a temporary in-season increase of TALFF, and a temporary in-season decrease in Reserve for the affected species. At the end of the fishing year (31 March), DAHs, annual domestic quotas, TALFFs, and Reserves shall revert to the amounts specified by the Mid-Atlantic Fishery Management Council in Section XII-5 of this FMP.

The Council's criteria to guide the Assistant Administrator in the allocation process are as follows:

ALLOCATIONS FROM RESERVE:

The National Marine Fisheries Service (NMFS) shall review reported domestic harvest (including off-loadings at sea) for Loligo and Illex on a monthly basis. Domestic harvest shall be determined based upon vessel and processor reports required by Section XIV of this FMP and additional port sampling data collected by NMFS.

The Assistant Administrator shall project the total amount of Atlantic squid that will be harvested by US fishermen during the entire fishing year. In making these projections the Assistant Administrator shall consider not only the actual reported domestic harvest, but also the ability and intent of domestic harvestors and processors to harvest and process squid for domestic consumption and export for the remainder of the fishing year. It is the Council's intent that no reallocation shall be made from Reserve to TALFF if domestic harvestors and processors are able and willing to sell squid for export at a reasonable price and acceptable quality but foreign nations are unwilling to purchase such squid in anticipation of receiving additional allocations from the Reserve.

If joint ventures are proposed, the Assistant Administrator shall determine if approval of such proposals will have a negative impact on the US squid processing industry. If the joint ventures will not have a negative impact on the US squid processing industry, the Assistant Administrator shall allocate from the Reserve to DAH the amount of the appropriate squid species as required by such joint ventures.

If the estimated amount of Atlantic squid to be harvested by US fishermen exceeds domestic annual harvest for either or both species, the Assistant Administrator shall allocate a sufficient quantity of the affected species to domestic annual harvest. Such allocation shall ensure that the US fishery for that species of squid will not be subject to closure except in the event that domestic landings of that species of squid threaten to exceed domestic annual harvest plus the Reserve for that species of squid.

At the end of the first six months of the fishing year, if the estimated total amount of Atlantic squid to be harvested by US fishermen is less than 80 per cent of total of domestic annual harvest plus the Reserve (i.e., 14,400 mt for Illex and 20,800 mt for Loligo), for either or both species of squid, then the Assistant Administrator shall consider an allocation of part of the Reserve for Loligo and/or Illex to TALFF.

The Assistant Administrator shall accomplish any allocation of Loligo and/or Illex through the regulatory process. Notice of proposed rulemaking stating the amount of either or both species to be allocated shall be published in the Federal Register. The public shall be given a 15-day comment period from the date of publication. During this time the Assistant Administrator or his designee shall consult with the appropriate committee of the Council to ensure that the proposed allocation is consistent with the objectives contained in the FMP. The Assistant Administrator shall publish final regulations in the Federal Register to accomplish any allocation after taking into account as appropriate: (1) the intent and capability of the domestic industry to harvest Loligo and/or Illex during the latter portion of the fishing year as expressed during the public comment period; (2) the status of the squid populations; and (3) the current harvest of Loligo and Illex by foreign nationals. The Council believes these final regulations should be published in the Federal Register in a timely manner to allow for proper notice. When the final regulations are published in the Federal Register, all comments and relevant information received including catch statistics shall be summarized.

The Council has determined that it is inappropriate to provide for allocation of the

entire Reserve for both Loligo and Illex for the following reasons:

- (1) Squid harvested by private domestic recreational vessels for use as bait usually goes unreported and thus is not quantifiable.
- (2) The uncertainties which presently exist whereby the Council is unable to manage squid throughout the range of the Illex stock because of its transboundary nature.
- (3) The unknown amount of incidental catch from both squid stocks which goes unreported by vessels using bottom gear.
- (4) The possibility of unforeseen entry into the squid fishery by domestic fishermen late in the season.

The Council anticipates that the Assistant Administrator, after consultation with the Council, will implement the intent of the FMP to restrict US harvest in excess of DAH plus the Reserve by imposing such measures including, but not limited to, trip limitations, quarterly or half yearly quotas, and closed areas, as she deems appropriate in the final regulations. Such measures should ensure the achievement of OY in a manner that does not result in a sudden dislocation of those involved in the fishery. The Council intends that these measures will enable fishermen to redirect their effort in a timely manner should a closure of the fishery or a substantial diminution in allowable catch become necessary.

XIII-4. Types of Gear

Foreign nations fishing for squid shall be subject to the gear restrictions set forth in part 611.50(c) of 50 CFR.

XIII-5. Incidental Catch

Foreign nations fishing for squid shall be subject to the incidental catch regulations set forth in parts 611.13, 611.14, and 611.50 of 50 CFR.

XIII-6. Restrictions

No operator of any foreign fishing vessel, including those catching squid for use as bait in other directed fisheries, shall conduct a fishery for squid outside the areas designated for such fishing operations in this FMP.

XIII-7. Habitat Preservation, Protection and Restoration

The Council is deeply concerned about the effects of marine pollution on fishery resources in the Mid-Atlantic Region. It is mindful of its responsibility under the Fishery Conservation and Management Act to take into account the impact of pollution on fish. The extremely substantial quantity of pollutants which are being introduced into the Atlantic Ocean poses a threat to the continued existence of a viable fishery. In the opinion of the Council, elimination of this threat at the earliest possible time is determined to be necessary and appropriate for the conservation and management of the fishery, and for the achievement of the other objectives of the Fishery Conservation and Management Act as well. The Council, therefore, urges and directs the Secretary to forthwith proceed to take all necessary measures, including but not limited to, the obtaining of judicial decrees in appropriate courts, to abate, without delay, marine pollution emanating from the following sources: (1) the ocean dumping of raw sewage sludge, dredge spoils, and chemical wastes; (2) the discharge of raw sewage into the Hudson River, the New York Harbor, and other areas of the Mid-Atlantic Region; (3) the discharge of primary treated sewage from ocean outfall lines; (4) overflows from combined sanitary and storm sewer systems; and (5) discharges of harmful wastes of any kind, industrial or

domestic, into the Hudson River or surrounding marine and estuarine waters.

XIII-8. Development of Fishery Resources

No changes are required as a result of Amendment #1.

XIII-9. Management Costs and Revenues

It is expected that the costs of implementing Amendment #1 should be similar to the cost of implementing the original FMP. The licensing and recordkeeping provisions are continued by the Amendment. There will be costs associated with monitoring catch levels for purposes of allocating the Reserve, but these should not differ significantly from the costs of monitoring under the original FMP for purposes of allocating from initial DAH to TALFF. The merger of the Atlantic Squid and Atlantic Butterfish FMPs should reduce governmental costs in the long-run.

XIV. SPECIFICATIONS AND SOURCES OF PERTINENT FISHERY DATA

It is recommended that the reporting and recordkeeping requirements of the original FMP continue unchanged.

XV. RELATIONSHIP OF THE RECOMMENDED MEASURES TO EXISTING APPLICABLE LAWS AND POLICIES

XV-1. Fishery Management Plans

This Amendment #1 to the Atlantic Squid FMP is related to other FMPs, PMPs, and proposed FMPs as follows:

1. It will amend the FMP regulating fishing for squid within the FCZ.
2. All fisheries of the northwest Atlantic are part of the same general geophysical, biological, social, and economic setting. Domestic and foreign fishing fleets, fishermen, and gear often are active in more than a single fishery. Thus, regulations implemented to govern harvesting of one species or a group of related species may impact upon other fisheries by causing transfers of fishing effort.
3. Many fisheries of the northwest Atlantic result in significant non-target species fishing mortality. Therefore, each management plan must consider the impact of non-target species fishing mortality on other stocks and as a result of other fisheries.
4. Squid are a food item for many commercially and recreationally important fish species. Also, squid utilize young hake, mackerel, and herring, and possibly many other finfish species, as food items.
5. Present ongoing research programs often provide data on stock size, levels of recruitment, distribution, age, and growth for many species regulated by the PMPs, FMPs, and proposed FMPs.

XV-2. Treaties or International Agreements

No treaties or international agreements, other than GIFAs entered into pursuant to the FCMA, relate to this fishery.

XV-3. Federal Laws and Policies

The only Federal law that controls the fisheries covered by this management plan is the FCMA.

Marine Sanctuary and Other Special Management Systems

The USS Monitor Marine Sanctuary was officially established on January 30, 1975, under the Marine Protection, Research, and Sanctuaries Act of 1972. Rules and

regulations have been issued for the Sanctuary (15 CFR Part 924). They prohibit deploying any equipment in the Sanctuary, fishing activities which involve "anchoring in any manner, stopping, remaining, or drifting without power at any time" (924.3 (a)), and "trawling" (924.3(h)). Although the Sanctuary's position off the coast of North Carolina at 35°00'23" N latitude - 75°24'32" W longitude is located in the plan's designated management area, it does not occur within, or in the vicinity of, any foreign fishing area. Therefore, there is no threat to the Sanctuary by allowing foreign squid fishing operations under this plan. Also, the Monitor Marine Sanctuary is clearly designated on all National Ocean Survey (NOS) charts by the caption "protected area". This minimizes the potential for damage to the Sanctuary by domestic fishing operations.

Current and/or Proposed Oil, Gas, Mineral, and Deep Water Port Development

While Outer Continental Shelf (OCS) development plans may involve areas overlapping those contemplated for offshore fishery management, we are unable to specify the relationship of both programs without site specific development information. Certainly, the potential for conflict exists if communication between interests is not maintained or appreciation of each other's efforts is lacking. Potential conflicts include, from a fishery management position: (1) exclusion areas, (2) adverse impacts to sensitive, biologically important areas, (3) oil contamination, (4) substrate hazards to conventional fishing gear, and (5) competition for crews and harbor space. The Council has recommended that the nomination for the Georges Bank Sanctuary be reinstated and that an EIS be prepared for it.

We are not aware of pending deep water port plans which would directly impact offshore fishery management goals in the areas under consideration, nor are we aware of potential effects of offshore fishery management plans upon future development of deep water port facilities.

Potential Impact on Marine Mammals and Endangered Species

Numerous species of marine mammals occur in the northwest Atlantic Ocean, yet definitive species composition is unknown. Indications are that the most numerous species in the area are the common (saddleback) dolphin (Delphinus delphis), harbor porpoise (Phocoena phocoena), and harbor seal (Phoca vitulina). Data on population abundance for various species, however, is sketchy at best, and for some species is non-existent. In addition, feeding behavior and preference for certain prey species are not well understood. These facts in combination make it extremely difficult to assess, even qualitatively, the potential impact of the squid management program on marine mammal populations.

The harvest levels proposed in Amendment #1 are not expected to cause any declines in abundance of these species. Therefore, no change in the availability of these species to those toothed cetaceans and pinnipeds that utilize squid as a food item is expected to occur. The Illex OY has been reduced from MSY to in part allow for the fact that Illex is a prey species for many species, including pilot whales.

Whenever fishing gear and marine mammals occur in the same area, there always exists a potential for an incidental kill of marine mammals. Except in unique situations (e.g., tuna-porpoise in the central Pacific), the incidental kill as a result of commercial fishing activities usually has an insignificant impact upon the stability of marine mammal populations. This is because the number of animals killed is relatively small compared to total population size.

Outside of certain marine mammals, the only threatened/endangered species occurring in the northwest Atlantic are the shortnose sturgeon (Acipenser brevirostrum) and several species of sea turtles. Because data on occurrences of shortnose sturgeon are vital to understanding its current status, the Council urges fishermen to report

any incidental catch of this species to the Shortnose Sturgeon Recovery Project of the NMFS.

Available data appear to indicate that several species of sea turtles are regularly found in New England waters. These turtles are the Kemp's ridley (Lepidochelys kempii), leatherback (Dermochelys coriacea), loggerhead (Caretta caretta), and green (Chelonia mydas). In addition, hawksbill turtles (Eretmochelys imbricata) occasionally stray into the area. The Kemp's ridley sea turtle, while probably the most endangered reptile on earth (total population estimated at several thousand adult individuals), is also the most frequently observed sea turtle in New England waters, especially Cape Cod Bay. Strandings of Kemp's ridley are routine, have been known to occur for some time, and result in some mortality to the stranded animals. One hypothesis is that individuals remain in the Bay until late autumn, and with the decrease in water temperature as winter approaches, these animals become subject to hypothermia and subsequently die.

In late autumn, 1978, seven Kemp's ridley turtles were found on the beaches along Cape Cod Bay. While several of these individuals were reportedly cut and bleeding when first observed, recent examination of the preserved specimens did not reveal any major physical damage to the individuals. It is possible that these animals were injured by fishing activity either through entanglement in the trawl nets or by contact with a vessel's propeller. However, there is no solid evidence to indicate that fishing operations were responsible for the kills. Based on inquiries to fishermen conducted by NMFS and Massachusetts Division of Marine Fisheries personnel, the general conclusion can be drawn that regular and numerous killings of Kemp's ridley turtles in Cape Cod Bay do not occur as a result of normal commercial fishing operations. Additional monitoring of turtles is needed.

In conclusion, the Council does not believe that continuation of the Squid FMP will have any adverse impact upon populations of marine mammals and endangered species. As additional understanding of the status and dynamics of marine mammal and sea turtle populations becomes available, the Council will integrate this information in examining potential impacts upon the environment as a result of FMPs.

XV-4. State, Local, and Other Applicable Laws and Policies

No State or local laws control the fisheries that are the subject of this management plan.

State Coastal Zone Management (CZM) Programs

The proposed action entails management of squid stocks in an effort to ensure sustained productivity at some optimum level. In order to achieve this goal, all management plans must incorporate means to achieve integrity of fish stocks, related food chains, and habitat necessary for this integrated biological system to function effectively. Inasmuch as CZM plans are presently in the developmental stages, we are not aware of specific measures on the part of the individual states which would ultimately impact this fishery plan. However, the CZM Act of 1972, as amended, is primarily protective in nature, and provides measures for ensuring stability of productive fishery habitat within the coastal zone. Therefore, each State's CZM plan will probably assimilate the ecological principles upon which this particular fishery management plan is based. It is recognized that responsible long-range management of both coastal zones and fish stocks must involve mutually supportive goals. At the time that the draft of Amendment #1 was distributed for review, the Council had been advised that Maine, Massachusetts, Rhode Island, New Jersey, Maryland, and North Carolina have approved CZM programs. Copies of the draft were sent to the CZM agencies in those States for review and no comments were received.

XVI. COUNCIL REVIEW AND MONITORING OF THE PLAN

The Council will review the plan each year. The review will include the most recent cruise survey data and data on the US harvesting and processing industries. This will permit a review of MSY, OY, US Capacity, and TALFF and the development of any required modifications to the FMP. These reviews will be carried out so that any amendments to the FMP can be reviewed by the Council and the public and be implemented by the Secretary of Commerce by April 1 of each year. This schedule may be modified in the future as the fishery evolves.

XVII. REFERENCES

All requests for background information, biological assessments, etc., should be directed to the offices of the Mid-Atlantic Fishery Management Council. Additions to the references listed in the original FMP are:

Mid-Atlantic Fishery Management Council. 1978. Atlantic Squid Fishery Management Plan.

Lange, Anne M. T., Squid (Loligo pealei and Illex illecebrosus) stock status update: July, 1979. NMFS, Northeast Fisheries Center, Woods Hole Laboratory. Lab. Reference No. 79-30.

APPENDIX I. SQUID (LOLIGO PEALEI AND ILLEX ILLECEBROSUS)
STOCK STATUS UPDATE: JULY 1979¹

INTRODUCTION

This document presents recent information regarding the squid stocks Loligo pealei and Illex illecebrosus from the Gulf of Maine to the Middle Atlantic area (ICNAF areas 5 + 6, Figure 1). It is an update of the squid stock status report of June 1978 (Lange, NEFC, Lab. Ref. No. 78-36)² and provides 1978 USA and foreign commercial catches and length frequency samples by month and USA monthly catch per effort indices; current 1979 USA and foreign commercial catches; 1978 spring, summer, and autumn USA research bottom trawl survey results, including autumn abundance and pre-recruit indices; and 1979 USA spring survey results.

RESULTS AND DISCUSSION

Commercial Fishery

Provisional USA squid catches totaled 1,861 mt (Table 1) in 1978, compared with 2,553 mt reported in 1977. This total consisted of 1,476 mt of Loligo and 385 mt of Illex. Illex catches decreased 67% from the 1977 level while Loligo catches increased about 8%. Though some squid were caught in every month, the greatest USA catches occurred in May and June, while Loligo were inshore to spawn and Illex were in shallow waters to feed. Through April 1979, preliminary USA squid catches totaled 258 mt of Loligo and 20 mt of Illex.

US catch per effort of each squid species, based on vessel trips where 50% or more of the catch was Loligo or Illex, is presented in Table 2. In 1978, overall catch per effort, especially in the southern New England area, decreased for all vessel types from the 1976 and 1977 values.

Preliminary 1978 squid catches for other countries totaled 26,666 mt: 9,356 mt of Loligo and 17,310 of Illex. This represents a 43% decline in Loligo and a 27% decline in Illex catches when compared to 1977 values (1977 total--41,237 mt). These preliminary estimates show only 42.1% of the foreign allocation for Loligo and 54.6% of the Illex quota were taken in 1978. Even when considering only the catches and allocations of those countries with a directed squid fishery (Italy, Japan, Mexico, and Spain), only 45.8% and 76.5% of the Loligo and Illex quotas, respectively, were caught. It should be noted, however, that Japanese and Italian catches may have been restricted by limits on bycatch (97% and 71%, respectively, of their butterfish allocations were taken).

Preliminary catches in the foreign fishery through June 1979, however, totaled 9,707 mt of Loligo (53% of the TALFF) and 3,804 mt of Illex (20% of the TALFF). This is about twice the catch of Loligo and about the same catch of Illex for the same time period in 1978. Based on vessel activities information reported to the NMFS for January and February 1979, there was also a 64.7% increase in the number of vessel-days on the fishing grounds for the directed squid fishery compared with January and February 1978. Therefore, overall catch per effort (mt per vessel days on grounds) increased about 1.5 times the January-February 1978 value.

Length frequency samples for Loligo from the US commercial fishery are summarized in Table 3. Length frequencies from the foreign squid fisheries, obtained by US observers throughout the fishing year, are presented in Tables 4a or 4b for Loligo

¹ Lange, Anne M. T., NMFS, Northeast Fishery Center, Woods Hole Lab., Laboratory Ref. No. 79-30, July 23, 1979

² Lange, A.M.T. MS, 1978. Squid (Loligo pealei and Illex illecebrosus) stock status: June, 1978, NMFS, NEFC. Lab. Ref. No. 78-36.

and Illex, respectively. The mean lengths for Loligo from the inshore US fishery, directed primarily at mature spawning individuals, are generally larger than those from the offshore fishery, which is focused on this species prior to inshore spawning individuals. Mean length of Illex from the offshore fishery increased through the year (January through December) from 15.1 to 23.7 cm.

Research Vessel Surveys

Results of US bottom trawl surveys, conducted during the springs of 1977 and 1978, indicated great reductions in catch per tow of Loligo (Table 5) when compared with previous years since 1968. Stratified mean catches per tow of Illex were also well below the 10 year average in all but the southern New England area. However, great variability in spring Illex catches may reflect changes in availability to the survey rather than fluctuations in total population size, since this species ranges to depths beyond the scope of the survey during that time of year.

Decreased catch per tow in the 1978 US autumn bottom trawl survey indicated a great decline in Loligo abundance (Lange and Sissenwine, 1979).¹ Overall abundance, as indicated by stratified mean number per tow, of all sizes from the Middle Atlantic through Georges Bank strata (Figure 1) decreased from a 7 year (1971-1977) average of 353.2 to 144.2 in autumn 1978 (Table 6). This was due primarily to a great drop in the pre-recruit index (mean number per tow of individuals less than 9 cm) from a 7 year average of 314.4 to 93.4. This represented a decrease in the pre-recruit portion of the population from an average of 89% to 65%, while the index for recruited individuals was above average. Stratified mean number of Illex per tow (Table 6) increased from 1977 to 1978 to a level comparable to that of 1976, when high abundance of this species was observed. However, the mean weight per tow was about 39% less than the 1976 level, indicating smaller individuals. In fact, the proportion of those taken which were of pre-recruited size in 1978 was the second highest in the time series, indicating the possibility of a good age group entering the fishery in 1979.

Stock size estimates, based on stratified mean number per tow from the autumn survey, are presented in Tables 7 and 8 for Loligo and Illex, respectively. The estimated population size for Loligo ($1,251 \times 10^6$) is the lowest since 1971, while that for Illex is the second highest since 1968, the first year that estimates were available for these species.

Preliminary analysis of spring 1979 USA survey results indicate a significant increase in the mean catch (in kilograms) per tow of Loligo (Table 5) when compared to the spring 1977-1978 mean (2.72 vs. 1.49). Though this is below the high 1975-1976 levels, it is comparable to other years in the time series. There was also a decrease in the mean length of Loligo in the 1979 spring survey compared with all other years from about 15 to about 6 cm. This may indicate the presence of a late (autumn 1978) spawned brood which is not available at the time of the autumn survey. Catches of Illex during the spring survey were comparable to the 1968-1978 average.

CONCLUSIONS

The continued downward trend in Loligo abundance in 1978 from recent (1973-1976) levels was evidenced in both commercial fishery and US bottom trawl survey data. The directed foreign fishery only caught 46% of its 1978 allocation, while US inshore catches and catch per effort were well below the 1976 and 1977 values. Research vessel survey results indicated a possible 59% drop in the abundance of Loligo in autumn 1978 (even though there were more recruited (greater than 8 cm) individuals than the 7 year average). This was primarily the result of a 70%

¹ Lange, A.M.T. and M.P. Sissenwine. 1979. Decreased Abundance of Long-finned Squid off the Northeastern United States. Coastal Oceanog. and Climat. News. Vol.1 (2):18.

decline in pre-recruit sized individuals which would be contributing to the fishery through next autumn. Catches thus far in 1979 are above those for the same time period in 1978, but estimates of effort applied to obtain this catch were also greater than in 1978. The USA spring 1979 survey results indicate a level of Loligo biomass comparable to the long-term average, with mean lengths smaller than normally found at that time of year. The high number of small squid appear to be from the brood which would normally have appeared in the autumn survey and will probably contribute to the fishery for the remainder of this year. Late appearance of these individuals may account for the apparent decrease in abundance noted in autumn 1978.

The autumn 1978 Illex survey abundance index was again well above historic levels and comparable to the 1976 "record" level. There was also a great increase in pre-recruit sized individuals, second only to the 1975 level which preceded the great abundance in 1976. If a relationship exists between this index and availability to the fishery, Illex may be very abundant in 1979. In fact, catches of Illex thus far in 1979 are running above the historical average. While Illex ranges into Canadian waters, the relationships between the stocks in these two areas is as yet unknown. Catches off Canada in 1978 totaled 98,600 mt, less than the allowable level of 100,000 mt but a 23% increase over the 1977 level and more than twice the 1976 catch.

Table 1. USA 1978 Monthly Squid Landings¹ in Metric Tons by Area

	<u>5Y</u>	<u>5Ze</u>	<u>5Zw</u>	<u>6</u>	<u>Total</u>
			<u>Loligo</u>		
Jan			9.2	76.5	85.7
Feb			2.2	59.7	61.9
Mar		1.3	1.9	80.5	83.7
Apr		0.2	34.5	98.6	133.3
May		2.1	157.4	118.8	278.3
Jun		0.4	81.5	177.4	259.3
Jul		0.1	19.9	98.8	118.8
Aug			10.3	44.6	54.9
Sep	1.0		28.9	11.2	41.1
Oct	4.5	2.7	64.6	26.7	98.5
Nov	5.8	0.9	80.5	81.2	168.4
Dec	1.2	0.5	25.1	64.2	91.0
Total	13.5	8.2	516.0	938.2	1,475.9
			<u>Illex</u>		
Jan				3.2	3.2
Feb				6.6	6.6
Mar					
Apr					
May			0.1		0.1
Jun	3.5	0.5	189.9		193.9
Jul	16.0	29.4	0.1		45.5
Aug	6.5	7.5	1.2		15.2
Sep	6.8	93.5			100.3
Oct	7.4	2.1	0.4		9.9
Nov	9.7	0.4			10.1
Dec	0.3				0.3
Total	50.2	133.4	191.7	9.8	385.1

¹ Preliminary landings, non-specified squid catches prorated to species by month and area.

Table 2

Monthly And Annual Catch Per Effort (Metric Tons Per Days Fished) In The US Directed¹ Squid Fisheries,
By Area And Vessel Size², 1976-1978, Including Total Annual Number Of Days Fished

AREA	VESSEL SIZE	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	TOTAL DAYS
<u>ILLEX</u>																
Gulf Of Maine	Small	1976							1.76	4.55	6.66	13.61	5.63		9.30	10.0
		1977							0.68	0.78	1.81	7.43	9.85		3.85	4.5
		1978														0.68
	Medium	1977							2.83	7.62	15.31	11.83		7.77	3.5	
So. New England	Small	1977						2.59							4.06	2.3
	Medium	1976						6.39							6.39	1.2
<u>LOLIGO</u>																
Georges Bank	Small	1978						1.59							1.59	0.8
	Medium	1977						1.51	4.27						2.50	7.0
So. New England	Small	1976					6.66	7.33		3.44	0.76				6.62	41.6
		1977					5.31	3.53		0.59	1.24	1.24	0.23	6.89	4.57	35.0
		1978					2.59	1.67	2.36		1.07	1.13	1.56		2.21	52.5
Mid-Atlantic	Medium	1976				1.56	7.79	5.34							6.41	58.8
		1977				1.00	6.33	2.49	4.57		1.39	0.50	4.66		4.57	55.7
		1978					2.71	1.19				1.89	1.59		1.61	15.1
Mid-Atlantic	Small	1976			1.84	14.97			1.33		2.10			3.38	2.4	
	1978									1.40				1.40	0.3	
	Medium	1976			1.41	1.48								1.47	4.0	
	1978											2.89	0.89	1.11	1.8	

(1) Individual trips with Loligo or Illex composing 50% or more of the total catch

(2) Small vessels = 0.0 - 49.9 gross registered tons Medium vessels = 50.0 - 149.9 gross registered tons

Table 3. 1978 US Commercial Loligo Length Frequencies¹, From The Southern New England Area, By ICNAF Subdivision, And Month

Length (cm)	5ZW					6A				
	APR	MAY	JUN	JUL	SEP	OCT	MAY			
1	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-
5	-	-	3	-	-	-	-	-	-	-
6	-	-	12	-	-	-	-	-	-	-
7	-	-	6	10	-	30	-	-	-	-
8	-	-	12	30	-	60	-	-	-	-
9	10	-	33	30	-	120	-	-	-	-
10	20	-	12	40	-	260	-	-	-	-
11	25	-	24	120	-	230	-	-	-	-
12	45	-	93	150	-	120	-	-	-	-
13	40	-	102	100	-	80	-	-	-	13
14	40	10	108	100	-	60	-	-	-	-
15	95	10	81	100	-	80	-	-	-	13
16	65	59	75	50	-	150	-	-	-	-
17	104	49	78	50	-	150	-	-	-	38
18	104	59	69	50	-	150	-	-	-	38
19	65	147	72	50	-	40	-	-	-	64
20	119	137	48	10	-	40	-	-	-	115
21	40	98	21	40	-	-	-	-	-	64
22	45	78	33	20	-	10	-	-	-	77
23	65	88	21	10	-	10	-	-	-	77
24	30	29	18	10	-	30	-	-	-	38
25	25	49	33	20	-	20	-	-	-	38
26	10	20	15	-	-	90	-	-	-	90
27	25	20	6	10	-	10	-	-	-	51
28	-	29	12	-	-	40	-	-	-	77
29	10	39	3	-	-	70	-	-	-	64
30	5	39	3	-	-	-	-	-	-	26
31	5	29	9	-	-	10	-	-	-	13
32	-	10	-	-	-	-	-	-	-	38
33	-	-	-	-	-	-	-	-	-	26
34	-	-	-	-	-	-	-	-	-	-
35	5	-	-	-	-	-	-	-	-	-
36	5	-	-	-	-	-	-	-	-	13
37	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	13
39	-	-	-	-	-	-	-	-	-	13
40	-	-	-	-	-	-	-	-	-	-
Total	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
No. Fish Measured	201	102	334	100	100	100	100	100	78	78
Landed Weight (mt)	26.4	155.4	81.5	19.6	20.8	60.9	60.9	60.9	9.3	9.3
Est. No. Landed (x10 ³)	188.3	800.1	726.6	244.9	138.1	1205.9	1205.9	1205.9	37.3	37.3
Mean Length (cm)	18.4	21.8	16.4	14.5	19.5	10.8	10.8	10.8	24.4	24.4
Mean Weight (g)	141	195	113	82	150	50	50	50	250	250

(1) Length frequencies, per mille, expanded over the entire US Loligo catch in the area and month

Table 4a. 1978 Loligo Length Frequencies¹ (Per Millie) From The Foreign Squid Fishery

Length (cm)	M O N T H											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	0.4	-	-	-	-	-	-	-	-	-
4	1.2	0.5	2.8	6.9	-	-	-	-	-	0.7	-	-
5	7.1	4.2	10.5	18.1	18.1	-	-	-	-	5.8	-	-
6	19.0	13.5	21.6	26.2	26.2	-	-	-	0.9	11.0	47.4	-
7	39.9	41.1	35.6	31.9	31.9	-	-	-	5.2	19.7	28.8	-
8	64.4	69.0	58.7	34.8	34.8	-	-	-	28.3	48.1	51.6	-
9	102.6	102.7	49.8	28.1	28.1	-	-	-	60.4	103.5	97.2	-
10	119.3	138.1	72.1	33.6	33.6	-	-	-	110.7	149.0	124.8	-
11	108.2	138.6	83.1	40.2	40.2	-	-	-	220.0	160.5	203.9	-
12	94.7	127.3	94.2	34.9	34.9	-	-	-	241.6	154.6	137.5	-
13	79.3	99.0	86.8	85.4	85.4	-	-	-	20.5	143.9	84.3	-
14	59.2	87.0	88.3	93.8	93.8	-	-	-	28.8	90.7	55.6	-
15	48.6	59.2	103.3	164.5	164.5	-	-	-	39.0	61.5	45.7	-
16	43.7	36.3	82.7	103.3	103.3	-	-	-	-	55.0	22.2	-
17	40.6	26.7	65.9	75.6	75.6	-	-	-	52.9	40.9	22.2	-
18	30.2	16.5	38.1	66.1	66.1	-	-	-	37.7	39.9	32.7	-
19	25.6	12.7	33.6	32.2	32.2	-	-	-	26.6	22.6	25.8	-
20	22.7	10.8	29.1	67.6	67.6	-	-	-	18.3	14.7	7.8	-
21	19.0	6.4	15.1	12.5	12.5	-	-	-	13.6	11.5	7.6	-
22	17.1	2.5	8.7	11.9	11.9	-	-	-	6.4	10.5	7.4	-
23	9.4	2.1	10.3	14.1	14.1	-	-	-	5.0	4.9	2.8	-
24	9.6	2.4	3.6	7.3	7.3	-	-	-	1.6	2.7	2.8	-
25	6.8	0.9	1.7	4.4	4.4	-	-	-	3.5	1.1	2.0	-
26	6.0	0.6	0.5	-	-	-	-	-	1.1	0.4	0.7	-
27	3.5	0.4	1.3	6.8	6.8	-	-	-	0.2	0.1	2.0	-
28	4.5	0.5	0.7	-	-	-	-	-	0.8	1.3	0.4	-
29	4.6	0.4	0.3	-	-	-	-	-	-	-	1.6	-
30	4.6	-	0.6	-	-	-	-	-	0.6	-	0.3	-
31	3.2	0.1	-	-	-	-	-	-	-	-	0.2	-
32	1.1	0.2	0.2	-	-	-	-	-	-	-	-	-
33	2.1	-	0.5	-	-	-	-	-	-	-	-	-
34	1.0	0.1	-	-	-	-	-	-	-	-	-	-
35	0.4	-	-	-	-	-	-	-	-	-	-	-
36	0.3	0.2	-	-	-	-	-	-	-	-	-	-
37	0.1	-	-	-	-	-	-	-	-	-	-	-
38	0.1	-	-	-	-	-	-	-	-	-	-	-
39	0.1	-	-	-	-	-	-	-	-	-	-	-
40	0.2	-	-	-	-	-	-	-	-	-	-	-
Total Number	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Total Number in Catch ²	807.2	366.7	362.6	20.7	-	-	-	-	11.0	198.4	180.5	58.4
Total Weight in Catch ³	97.6	21.2	27.3	1.9	-	-	-	-	0.4	13.2	10.8	3.3
Mean Length (cm)	13.18	11.87	13.38	14.52	-	-	-	-	8.77	12.84	12.20	11.66

(1) From samples taken by US observers, expanded over the total sampled catch, and summed over all countries and vessels
(2) Estimated total number in sampled catch, all countries and vessels, in thousands of squid
(3) Total weight of catches which were sampled, in metric tons

Table 4b. 1978 *Illex* Length Frequencies¹ (Per Mille) From US Observer Samples During The Foreign Squid Fishery

Length (cm)	M O N T H											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	0.90	-	-	-	-	-
4	-	-	-	-	-	-	1.80	-	-	-	-	-
5	-	-	-	-	-	-	-	0.2	-	-	-	-
6	-	-	-	-	-	-	0.9	2.5	-	-	-	-
7	-	-	-	-	-	-	2.7	12.4	-	-	-	-
8	0.5	-	-	-	-	-	1.8	23.1	16.8	0.9	0.1	-
9	0.5	35.0	-	10.1	-	-	1.0	12.2	14.5	0.1	-	0.1
10	57.4	35.0	-	31.9	-	0.12	0.4	5.0	42.7	-	-	-
11	71.6	259.2	117.2	124.2	-	0.4	1.7	1.7	114.2	-	-	0.4
12	75.0	194.4	25.5	208.1	-	1.00	3.4	1.3	120.8	-	-	0.1
13	97.9	229.4	165.9	251.7	-	4.3	13.0	1.9	38.0	1.6	0.4	1.2
14	188.4	190.9	162.2	182.9	-	16.8	30.0	4.2	44.9	4.0	-	0.1
15	99.5	-	223.6	117.5	-	75.4	84.0	10.0	20.5	7.0	0.4	0.3
16	67.8	56.0	176.8	58.7	-	229.3	206.6	58.5	16.9	7.2	1.4	0.1
17	88.7	-	67.5	25.2	-	314.1	281.9	188.1	40.6	21.5	11.8	4.0
18	117.2	-	61.3	-	-	167.7	193.4	280.1	121.2	105.0	33.9	12.7
19	63.5	-	-	-	-	81.1	92.0	177.1	152.1	231.1	116.0	105.2
20	27.4	-	-	-	-	65.8	40.0	94.8	113.2	271.0	186.6	106.8
21	16.4	-	-	-	-	24.4	20.8	47.3	87.0	151.0	203.6	237.7
22	14.2	-	-	-	-	16.1	14.0	31.9	33.4	77.0	157.5	235.2
23	8.8	-	-	-	-	2.3	6.0	26.1	15.2	63.6	128.4	139.0
24	6.2	-	-	-	-	1.1	3.1	13.2	6.9	36.4	73.1	78.2
25	-	-	-	-	-	-	0.8	5.0	1.0	18.2	51.7	47.8
26	-	-	-	-	-	-	0.1	1.9	-	4.3	18.4	21.1
27	-	-	-	-	-	-	-	0.5	-	0.2	2.6	8.9
28	-	-	-	-	-	-	-	0.5	-	-	3.0	-
29	-	-	-	-	-	-	-	0.1	-	-	1.1	1.1
30	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-
32	-	-	-	-	-	-	-	-	-	-	-	-
Total Number	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Total Number In Catch ²	126.2	0.6	12.4	0.6	-	1075.2	1294.5	1384.5	251.2	393.0	160.5	170.6
Total Weight In Catch ³	10.78	0.03	1.06	0.04	-	142.60	194.05	244.27	36.26	87.71	41.25	45.75
Mean Length (cm)	15.12	13.40	15.46	14.10	-	18.27	19.06	19.97	18.23	22.14	23.26	23.72

(1) Expanded over total catch which was sampled and summed over all countries and vessels
(2) Estimated total number in sampled catch, all countries and vessels, in thousands of squid
(3) Total weight of catches which were sampled, in metric tons

Table 5. Loligo Stratified Mean Weight (kilograms) per tow from USA Spring Bottom Trawl Surveys (1968-1979).

Year	Area Strata		
	Mid-Atlantic (61-76)	Southern New England (1-12)	Southern Georges Bank (13-15)
1968	2.5	1.2	1.1
1969	1.7	0.3	5.3
1970	1.5	1.1	0.7
1971	2.8	1.4	1.8
1972	3.6	5.9	2.8
1973	2.8	4.9	3.4
1974	2.8	1.0	0.1
1975	4.9	7.6	2.0
1976	7.2	7.6	0.9
1977	1.0	1.2	0.6
1978	2.4	1.8	0.4
1979	1.7	3.4	4.8

Table 6. Total Abundance and Pre-Recruit Indices of Squid. (Stratified mean number per tow of Loligo and Illex of all sizes and of Loligo <8-cm and Illex <10-cm mantle length in autumn bottom trawl survey, Middle Atlantic to Georges Bank.)

Year	<u>Loligo</u> (#/tow)		<u>Illex</u> (#/tow)	
	All Sizes	<8 cm	All Sizes	<10 cm
1967	134.5	126.9	2.1	0.7
1968	176.5	159.9	2.3	0.6
1969	237.3	217.4	0.8	0.3
1970	85.6	79.3	3.4	0.2
1971	163.3	161.5	1.9	0.6
1972	271.4	258.5	3.5	1.8
1973	372.0	353.9	1.3	0.3
1974	251.7	233.3	3.0	2.1
1975	614.4	593.3	12.4	9.6
1976	410.9	302.5	28.7	0.6
1977	388.5	297.7	15.8	1.1
1978	144.2	93.4	28.4	5.1

Table 7. *Loligo* biomass estimates (mean weights in kg and numbers per tow by strata set).

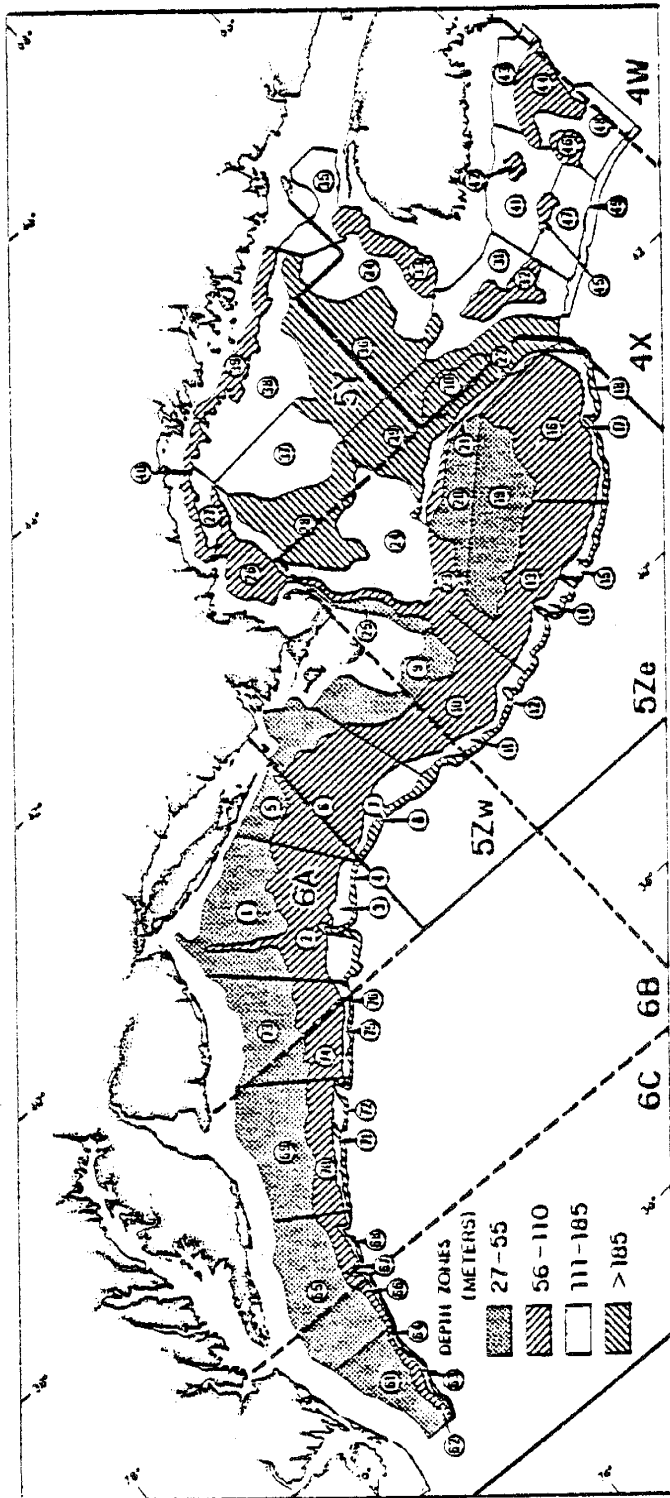
Year	Area	Total			Day			Night			B ₁ Wt MT	B ₁ # x10 ⁶	B ₂ Wt MT	B ₂ # x10 ⁶
		# tows	Wt/tow	#/tow	# tows	Wt/tow	#/tow	# tows	Wt/tow	#/tow				
1968	SNE/Mid-At1	124	10.86	267.57	40	16.23	362.60	43	2.51	30.58	28,073	692.6	29,114	1,211.9
	Geo. Bank	69	0.40	10.73	22	0.77	17.13	25	0.02	0.12				
	Gulf Maine	50	0.01	0.09	18	0.01	0.10	15	0.00	0.11				
1969	SNE/Mid-At1	119	13.99	347.50	38	27.32	777.30	39	3.29	51.29	37,643	931.6	48,053	2,393.1
	Geo. Bank	73	1.56	36.70	25	2.49	60.37	32	0.54	9.70				
	Gulf Maine	51	0.03	0.40	17	0.06	0.90	16	0.00	0.00				
1970	SNE/Mid-At1	122	4.13	105.40	38	5.55	168.10	40	2.98	63.70	12,095	337.9	19,640	1,946.2
	Geo. Bank	70	1.12	49.40	23	2.99	133.73	24	0.22	6.40				
	Gulf Maine	53	0.05	1.46	18	0.06	1.55	16	0.00	0.00				
1971	SNE/Mid-At1	125	4.04	234.20	43	8.55	515.70	41	0.27	11.29	11,752	641.4	14,050	1,106.1
	Geo. Bank	73	1.06	34.10	27	1.51	63.75	24	0.51	9.69				
	Gulf Maine	55	0.03	0.57	16	0.08	1.08	20	0.01	0.42				
1972	SNE/Mid-At1	114	9.41	398.90	31	13.14	524.10	40	1.24	31.25	25,400	1,065.1	21,039	1,533.3
	Geo. Bank	73	1.13	39.30	29	1.70	68.71	21	0.28	5.08				
	Gulf Maine	55	0.00	0.20	18	0.00	0.00	18	0.00	0.02				
1973	SNE/Mid-At1	111	14.20	542.90	38	17.47	817.10	35	3.68	66.94	42,338	1,460.9	44,252	3,092.0
	Geo. Bank	73	4.53	60.90	27	7.16	96.15	28	2.31	30.44				
	Gulf Maine	54	0.05	0.91	16	0.08	1.56	21	0.02	0.48				
1974	SNE/Mid-At1	108	11.41	355.90	33	16.33	896.10	38	5.38	130.00	32,014	989.0	46,442	4,757.0
	Geo. Bank	74	2.21	62.07	20	2.67	96.20	26	2.93	22.10				
	Gulf Maine	57	0.03	0.78	19	0.03	0.63	21	0.03	0.23				
1975	SNE/Mid-At1	115	15.55	895.50	41	20.27	1,548.40	36	6.11	115.20	41,912	2,412.0	48,636	7,789.0
	Geo. Bank	73	1.80	102.56	23	1.64	142.70	25	0.47	1.82				
	Gulf Maine	65	0.81	0.81	19	0.03	1.56	23	0.02	0.40				
1976	SNE/Mid-At1	123	15.79	579.79	37	22.05	979.90	40	3.65	90.74	44,935	1,632.0	51,436	4,372.0
	Geo. Bank	67	3.14	103.52	27	5.82	207.53	19	2.18	54.94				
	Gulf Maine	55	0.36	12.67	14	0.51	16.00	21	1.37	8.58				
1977	SNE/Mid-At1	119	11.92	577.89	46	14.20	729.54	35	1.89	94.67	31,600	1,526.0	27,421	3,157.0
	Geo. Bank	101	0.95	43.76	38	1.34	84.06	33	0.23	7.31				
	Gulf Maine	71	0.06	0.81	23	0.04	0.48	22	0.02	0.11				
1978	SNE/Mid-At1	134	5.68	198.36	41	8.93	362.00	52	1.37	23.26	16,583	566.0	18,800	1,251.0
	Geo. Bank	156	1.57	45.63	53	4.04	116.10	50	0.41	11.01				
	Gulf Maine	120	0.01	0.18	39	0.06	2.08	45	0.00	0.01				

Table 8. Illex Biomass Estimates (Mean Weights In Kg And Numbers Per Tow By Strata Set)

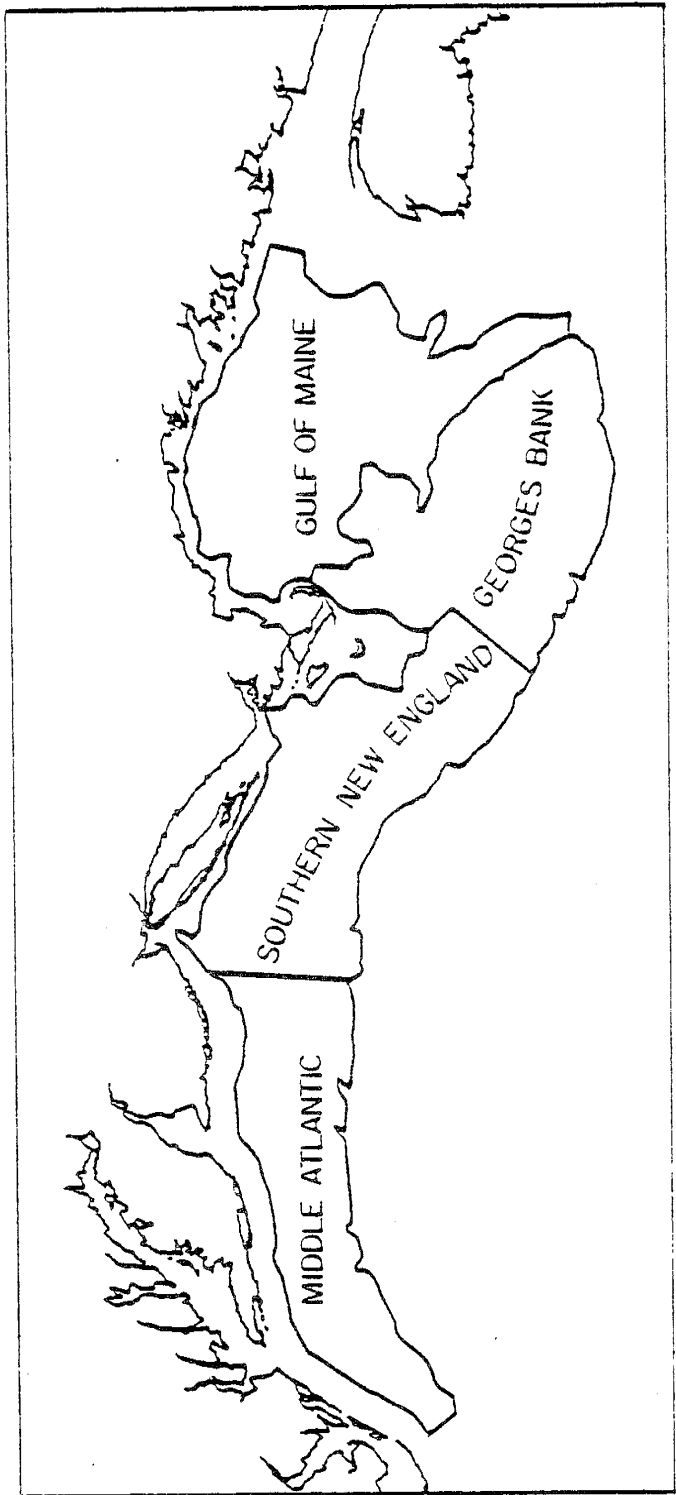
Year	Area	TOTAL			DAY			NIGHT			B ₁ wt (mt)	B ₁ # (x10 ⁶)
		# tows	wt/tow	#/tow	# tows	wt/tow	#/tow	# tows	wt/tow	#/tow		
1968	SNE/Mid-At1	124	0.48	2.62	40	0.28	1.69	43	0.13	0.60	1,845.4	9.70
	Geo. Bank	69	0.34	1.68	22	0.72	2.35	25	0.04	0.26		
	Gulf Maine	50	0.10	0.46	18	0.18	1.49	15	0.04	0.25		
1969	SNE/Mid-At1	119	0.10	0.98	38	0.17	1.64	39	0.06	0.50	418.8	3.60
	Geo. Bank	73	0.04	0.48	25	0.04	0.57	32	0.06	0.43		
	Gulf Maine	51	0.07	0.27	17	0.14	0.51	16	0.00	0.07		
1970	SNE/Mid-At1	122	0.29	3.83	38	0.21	4.53	40	0.14	1.54	1,523.6	14.60
	Geo. Bank	70	0.24	2.62	23	0.60	4.89	24	0.05	0.56		
	Gulf Maine	53	0.29	0.82	18	0.50	1.36	16	0.02	0.11		
1971	SNE/Mid-At1	125	0.28	1.95	43	0.24	1.94	41	0.13	0.71	2,024.1	10.10
	Geo. Bank	73	0.46	1.70	27	0.55	2.23	24	0.25	0.93		
	Gulf Maine	55	0.43	1.81	16	1.21	4.44	20	0.16	0.85		
1972	SNE/Mid-At1	114	0.45	4.86	31	0.42	8.12	40	0.27	1.57	1,776.1	15.00
	Geo. Bank	73	0.20	1.07	29	0.15	0.83	21	0.15	0.72		
	Gulf Maine	55	0.19	0.75	18	0.34	1.50	18	0.04	0.09		
1973	SNE/Mid-At1	111	0.07	0.62	38	0.08	0.66	35	0.03	0.30	1,862.0	8.20
	Geo. Bank	73	0.50	2.51	27	0.70	2.51	28	0.44	3.29		
	Gulf Maine	54	0.63	2.02	16	1.57	5.19	21	0.09	0.26		
1974	SNE/Mid-At1	108	0.18	4.07	33	0.11	7.98	38	0.20	1.23	2,500.0	19.02
	Geo. Bank	74	0.16	1.12	20	0.22	1.19	26	0.09	0.58		
	Gulf Maine	57	1.16	3.92	19	1.76	5.88	21	0.46	1.41		
1975	SNE/Mid-At1	115	0.99	15.74	41	1.11	23.08	36	0.23	1.58	8,306.0	60.25
	Geo. Bank	73	1.11	6.41	23	1.85	13.01	25	0.76	2.03		
	Gulf Maine	65	2.71	7.31	19	3.34	9.17	23	0.29	0.60		
1976	SNE/Mid-At1	123	6.23	19.79	37	2.60	11.23	40	3.90	10.49	42,929.0	134.34
	Geo. Bank	67	14.78	45.03	27	8.06	23.83	19	3.54	9.82		
	Gulf Maine	55	4.20	13.75	14	5.25	16.83	21	1.35	3.47		
1977	SNE/Mid-At1	119	4.46	15.79	46	3.93	16.21	35	2.32	7.71	21,747.0	73.34
	Geo. Bank	101	5.02	15.81	38	4.09	15.23	33	5.31	16.23		
	Gulf Maine	71	2.21	7.24	23	4.26	14.82	22	0.40	1.29		
1978	SNE/Mid-At1	134	2.57	19.50	41	2.53	24.66	52	1.97	8.54	26,435.0	120.68
	Geo. Bank	156	12.17	44.67	53	34.25	109.75	50	2.68	12.56		
	Gulf Maine	120	1.91	5.84	39	3.75	11.25	45	0.41	1.41		

Figure 1. A. US bottom trawl survey strata and ICNAF Subareas 4 and 5 and Statistical Area 6.

B. Geographical areas off the Northeast coast of the US.



A



B

APPENDIX II: SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
FOR AMENDMENT #1 TO THE ATLANTIC SQUID FISHERY MANAGEMENT PLAN

Responsible Federal Agency:

US Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service

Jurisdiction Where the Action is Applicable:

The northwest Atlantic Ocean

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Abstract of Statement:

The statement relates to Amendment #1 to the Atlantic Squid Fishery Management Plan. That FMP was approved by NOAA on 6 June 1979. The purpose of the amendment is to extend the FMP beyond the end of fishing year 1979-1980 (31 March 1980) and incorporate necessary changes to quotas and other provisions in the FMP.

Comments Must be Received by:

5 November 1979

SUMMARY

Description of the Action

The proposed action consists of amending the Atlantic Squid FMP to extend it beyond the end of fishing year 1979-1980 and to change quotas and other management measures as necessary. A summary of the action is presented in Section II of Amendment #1 and the amended management measures, including alternatives, are discussed in Sections XII and XIII of Amendment #1.

Summary of Impact

The measures recommended in the amended plan will provide for the long term viability of the Loligo and Illex resources while permitting the US fisheries for these species to develop fully.

Alternatives

The Fishery Management Plan (FMP) for Atlantic Squid was approved by the Assistant Administrator for Fisheries, National Oceanic and Atmospheric Administration (NOAA) on 6 June 1979. The FMP is for fishing year 1979-1980 (1 April 1979 - 31 March 1980). The basic purpose of Amendment #1 is to extend the FMP beyond fishing year 1979-1980.

The management unit for the FMP is all Loligo pealei and Illex illecebrosus under US jurisdiction in the Atlantic.

The objectives of the FMP are to:

1. Achieve and maintain optimal stocks for future recruitment.
2. Prevent destructive exploitation of squid species.
3. Minimize capture of nontarget species.
4. Achieve efficiency in harvesting and use.
5. Maintain adequate food supplies for predator species, recognizing that squid are also predators.
6. Minimize user conflicts.
7. Improve understanding of the condition of the stocks.
8. Encourage increased American participation in the squid fishery.

The management measures in the FMP are:

1. The 1979-1980 fishing year Optimum Yield (OY) for Illex is 30,000 metric tons (mt) and 44,000 mt for Loligo. The US capacity, both harvesting and processing, is 10,000 mt of Illex and 14,000 mt of Loligo. The foreign surplus (TALFF) is 20,000 mt of Illex and 30,000 mt of Loligo.
2. Any vessel owner or operator (foreign or domestic) desiring to catch squid or transport or deliver for sale any squid, must possess the appropriate valid permit from the NMFS. This does not apply to individual US fishermen catching squid for their personal use.
3. Foreign fishing for squid is restricted to five designated areas.

4. Appropriate gear restrictions are imposed on foreign vessels fishing for squid.
5. Periodic reports on squid catches must be filed by foreign and domestic fishermen. Domestic dealers and processors must submit weekly reports on any transactions involving squid.
6. Incentives are provided to encourage development of the domestic squid industry.
7. A reassessment of the estimated US harvesting capacity for squid will be conducted annually.

Alternative management measures considered for Amendment #1 were:

1. Take No Action At This Time - This alternative would mean that the FMP would lapse. The NMFS would be required to prepare a Preliminary Management Plan (PMP). PMPs regulate foreign, but not domestic, fishermen. The effect of this alternative would be that the data that would be collected on domestic fishing and processing efforts as a result of this plan could not be collected as effectively, and assessments of the scope and development of the domestic fishery would not be as accurate as they would be with the FMP.

2. Continue The FMP For Fishing Year 1980-1981 With No Other Changes - This would mean that the FMP would need to be amended again prior to the beginning of fishing year 1981 - 1982. The following quantities would apply to fishing year 1980-1981:

	<u>Illex</u>	<u>Loligo</u>
OY	30,000 mt	44,000 mt
DAH	10,000	14,000
DAP	10,000	14,000
TALFF	20,000	30,000

3. Continue The FMP Without Time Limits With No Other Changes - This would eliminate the need for annual amendments to the FMP unless necessitated by new biological or other data. The following annual quantities would result:

	<u>Illex</u>	<u>Loligo</u>
OY	30,000 mt	44,000 mt
DAH	10,000	14,000
DAP	10,000	14,000
TALFF	20,000	30,000

4. Provide A Reserve For Illex and Loligo - This concept is useful in a developing US fishery when accurate estimates of DAH and DAP cannot be made at the beginning of the fishing year. A portion of the OY would be placed in reserve and distributed during the fishing year to DAH and TALFF based on performance of the US harvesting sector and the most recent stocks assessments. This alternative could be combined with a one year, a two year, or an indefinite extension of the FMP. The following annual quantities would result:

	<u>Illex</u>	<u>Loligo</u>
OY	30,000 mt	44,000 mt
DAH	5,000	7,000
DAP	5,000	7,000
TALFF	12,000	18,000
RESERVE	13,000	19,000

5. Increase Optimum Yields (OYs) - This may result in a reduction in future productivity of the stocks assuming a moderate stock-recruitment relationship. The relationship, however, between stock size and recruitment for either species is unknown. If recruitment is independent of spawning stock, increases in OYs could

occur without risk to future productivity. Sufficient information is not now available with which to estimate the impact of increased OYs for Loligo or Illex until responses of the squid populations, particularly Illex, to present OY levels are observed.

6. Reduce OYs - This would decrease the chances of a reduction in future productivity of these stocks, but unless there is a strong stock recruitment relationship, the most likely result is that a resource available for harvest would be underutilized. This is in part predicated on the fact that the OYs selected for both Loligo and Illex take into consideration the short life spans of the species. Based on past catch estimates and trends in abundance, there is little justification for reducing the OYs for Loligo or Illex below these levels.

7. Combine The Squid and Butterfish FMPs - The Atlantic squid and butterfish fisheries are currently managed separately. The fisheries are related. Coordinated management of these fisheries would have substantive advantages in the long-run because it could facilitate comprehensive evaluation of both fisheries together. From an administrative standpoint, the regulatory process would be simplified by having one set of regulations rather than two sets of identical regulations. Merger should also result in administrative cost savings, not only in the area of regulations, but also in the amendment process.

8. Combine Objectives 5 And 7 Into A New Objective 5 And Designate Objective 8 As Objective 7 - The new Objective 5 would read "Improve understanding of the condition of the stocks, including predator-prey relationships."

The Council has adopted Alternatives 4 and 8, with an indefinite extension of the FMP, as the final management measures for Amendment #1. In addition, the Council intends to combine the Squid and Butterfish FMPs as soon as possible following approval of the Butterfish FMP by the Secretary of Commerce.

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PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The Mid-Atlantic Fishery Management Council has prepared this amendment to the Atlantic Squid FMP to incorporate in that FMP the results of new stock assessments for Loligo and Illex. Quotas for these species have been developed based on these revised assessments. It was also necessary to revise certain management measures to improve implementation of the FMP.

ALTERNATIVES INCLUDING THE PROPOSED ACTION

The alternatives including the proposed action are listed in Section XII-2 of the amended FMP. They are analyzed in Sections XII-3 and XII-4 of the amended FMP.

AFFECTED ENVIRONMENT

The environment affected by this amended FMP is the northwestern Atlantic Ocean. It is described in Section VI of the FMP.

ENVIRONMENTAL CONSEQUENCES

Direct Effects and Their Significance

The impacts of the alternatives are discussed in Section XII of Amendment #1. None of the alternatives, except No Action, appears to have direct effects that differ from the effects of the original FMP. The No Action alternative, since it would remove control over US fishermen, could lead to overfishing if the US fishery were to expand significantly.

Indirect Effects and Their Significance

Sufficient data are not available to predict effects of the proposed action on total productivity of the region. To do so would require knowledge of the trophic interactions among Loligo and Illex and other species beyond our present understanding. Therefore, the proposed action is designed to result in continued yields on at least the present level based on the best scientific evidence available. It is impossible to completely forecast the long-term effects of the proposed action.

No irreversible commitments of resources will result from the implementation of this Amendment. Implicit in the implementation of the FMP is the periodic monitoring of the catch to provide data for management decisions.

Biological Resources - No loss of aquatic flora or fauna populations has been identified. Periodic monitoring of the catch is required and the management plan is flexible and could be modified or amended if adverse impacts appeared.
Land Resources - No irreversible or irretrievable commitments of land resources have been identified in the proposed management plan.
Water and air Resources - No irreversible or irretrievable commitments of water or air have been identified.

Short-term irretrievable commitments of public funds, however, can be identified.

Loligo and Illex are public resources and, therefore, belong to no one particular interest group. The concept envisioned by Congress as stated in the FCMA is to conserve and manage the fisheries so as to maximize the benefits derived from these resources to all Americans. The species considered herein are treated much like any other natural resources of the public domain. Given these circumstances, the conservation measures proposed are examples of direct and responsible actions to ensure long-term resource availability at adequate levels for the foreseeable

future.

Possible Conflicts Between the Proposed Action and the Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

These issues are discussed in Section XV of Amendment #1.

Environmental Effects of Alternatives Including the Proposed Action

The only alternative that would have a negative effect on the natural environment would be no action since no control could lead to overfishing.

The alternatives, including the proposed action, are discussed in Sections XII-3 and XII-4 of the amended FMP.

Energy Requirements and Conservation Potential of Various Alternatives

None of the alternatives appear to have particular energy impacts greater or less than any other.

Urban Quality, Historic, and Cultural Resources, and the Design of the Built Environment Including the Reuse and Conservation Potential of Various Alternatives and Mitigation Measures

These considerations do not appear to be significant relative to the amended FMP.

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APPENDIX III. LIST OF PUBLIC MEETINGS, SUMMARY OF COMMENTS,
COMMENT LETTERS, AND RESPONSES TO COMMENTS

<u>Location</u>	<u>Date</u>	<u>Number of Public Attending*</u>
Galilee, RI	15 October 1979	7
Falmouth, MA	16 October 1979	1
Gloucester, MA	17 October 1979	8
Portland, ME	18 October 1979	4
Asbury Park, NJ	18 October 1979	3
Cape May, NJ	19 October 1979	21
Riverhead, NY	22 October 1979	7
Ocean City, MD	22 October 1979	6
Norfolk, VA	23 October 1979	7

* Does not include Council, Federal, or State personnel

15 OCTOBER 1979 - GALILEE, RI

The meeting was called to order at approximately 7:00 p.m. by Mr. Keene. Others present were Robert H. Lowry (New England Fishery Management Council), Glen K. Mahoney (Northeast Regional Office, NMFS), Anne M. Lange (NMFS, Northeast Fisheries Center, Woods Hole), and Anne Williams (MAFMC staff). Seven members of the public were present.

Amendment No. 1 To The Squid FMP

Mr. Coons asked what was intended by "periodic" reporting requirements. Ms. Williams replied that the frequency of the logbook and processor reporting would be determined by NMFS, but that the Council had suggested that logbooks should be supplied on a weekly basis. Mr. Coons asked if an additional squid logbook would be required. Mr. Keene responded that he thought not, that squid would be folded into the overall logbook system now under review by NMFS.

Dr. Holmsen asked what consideration had been given in the Amendment to the Squid FMP to the mixed fishery for squid and butterfish, i.e., if there were an incidental catch quota for butterfish in the Squid Plan. Ms. Williams replied that the fisheries for butterfish are to be managed under a separate butterfish FMP, which had not yet been officially approved, and that both Plans addressed the issue of interrelated fisheries. Mr. Keene stated that one alternative the Council is considering is eventual merger of the Squid and Butterfish Plans.

Dr. Holmsen stated that although the squid and butterfish fisheries are interrelated, the domestic fishermen and processors are presently primarily interested in the butterfish fishery for export. He stated that although butterfish exports were large last year, there were few exports to date this year. Dr. Holmsen stated that many people were of the opinion that this resulted from the reallocation procedures. Ms. Williams replied that the butterfish fishery had been operating under the same legal regime for the past three years, that the potential for reallocation to foreign nations is no different this year than last, and that the lack of export sales this year might be due to a change in policy by Japanese importers, or other unknown factors.

Mr. Macnow stated that there had been no change in strategy by any of the Japanese fishing or trading companies. Mr. Macnow said that because of restrictions on fishing off the US coast, the Japanese have sought other areas to fish for butterfish, e.g., off China, Australia, and New Zealand, and those butterfish compete with supplies from US waters in the Japanese marketplace. Mr. Macnow said this fishing in other countries' waters did not occur last year.

Mr. Stasiukiewicz inquired as to the exact wording of the butterfish reallocation

procedures in the FMP and its future Amendment. Mr. Stasiukiewicz expressed surprise that the Amendment to the Butterfish FMP was not being scheduled for the same public hearing as the Amendment to the Squid Plan, and/or that the two Plans had not been merged. Mr. Keene explained why the delay in approval of the original Butterfish Plan had precluded the Amendment being included in this group of public hearings. Mr. Stasiukiewicz asked if the proposed squid permits would just be added to the existing permits, and if squid permits would be restricted in any way. Mr. Keene responded that any domestic fisherman could apply for and receive a squid and/or mackerel permit. Mr. Mahoney added that the squid permit would simply be added on to a fisherman's existing federal license

Dr. Rorholm asked what measures in the Plan addressed Objective 3 ("minimize capture of non-target species"). Ms. Williams replied that the Plan's adoption of the Foreign Fishing Regulations addressed this issue, and that those regulations had been designed by NMFS to deal specifically with these problems. Dr. Rorholm also asked if there were any limit on how many times a year a review of US harvesting capacity could take place. Ms. Williams replied that such a review could take place at any time, but that the reallocation procedures in Amendment No. 1 were designed so that no closures to the American fishery would occur, even if the catches exceeded the initial estimate of harvesting capacity, as long as the US catch did not exceed the sum of the initial US capacity estimate and the Reserve. Dr. Rorholm asked if a similar provision is in the Butterfish Plan. Ms. Williams responded that it was not in the present Plan, but would be incorporated in the draft Amendment to the Butterfish Plan for next fishing year.

Dr. Holmsen asked if there were any possibility of the State Department obtaining tradeoffs between foreign fishing quotas and reduction of tariff barriers in other countries. Mr. Keene replied that this was outside of the purview of a FMP, but that he believed that the present State Department policy was to "trade fish for fish" (instead of tying fish to other commodities). He stated that he did not know whether this policy extended to tariffs on US fish products in other countries.

Mr. Macnow made a statement on behalf of the Japan Deep-Sea Trawlers Association: "My clients would like to point out that there has been a great deal of wastage of the squid resource because it is not being caught either by American fishermen or foreign fishermen. Foreign fishermen are having problems catching squid because of severe restrictions, limitations to five windows, and restrictions within those windows because of fixed gear conflicts. In the past two years of operating under the Preliminary Management Plan, they estimate that some 150-200 million pounds of squid available for harvest have gone uncaught and unutilized, a very large amount. This also resulted in a loss to the US of fishing fees from foreign fishermen which had to be rebated to them, since they could not catch the amounts of fish which they were originally allocated. The US lost about \$1 million in fees because of these restrictive regulations, and also because of late reallocations of fish which had been originally reserved for American fishermen but which were not caught. The FMP, we believe, continues to compound this situation by overestimating to a large degree the ability and intention of American fishermen to catch squid. There are 24,000 metric tons of squid reserved for US fishermen, but in the recent past, the annual US catch has not exceed 3,700 tons. This year the catch has gone up, to probably about 6,000 tons, but this is a far cry from 24,000 tons. Japanese fishermen do not want to take anything away from American fishermen, but if American fishermen are not going to catch these amounts, why not let other countries take it? Under the reallocation system proposed in the FMP and this Amendment, there is only one reallocation period per year, and that comes very late in the season. It only allows for a portion of the unused amount reserved for American fishermen to be reallocated to foreign fishermen. It makes the reallocation so late in the fishing season that Illex, for example, is unavailable by the time reallocation occurs. My clients would like to see a more equitable reallocation system, whereby the American and foreign catches are reevaluated at more frequent intervals, and reallocations are made more frequently, so as to utilize the resource which is available for

harvest, but which has been largely wasted in the past.

"My clients have been trying to help develop the market for fish among New England and Mid-Atlantic fishermen. Last month they sent a delegation to Gloucester to see which species of fish they could buy for the Japanese market, and to give advice on how to better handle squid and butterfish so that these species would be more acceptable to the Japanese market. Squid is caught by many fishermen here, usually as a by-catch. Apparently, the fishermen are treating it very badly, allowing it to get bruised, not getting it back to shore fast enough, and not freezing it fast enough. And although Japanese companies had contracted for squid last year, the product that they got from US processors was in such poor condition that most of the squid could not be sold for human consumption in Japan; it had to be used for pet food. The same is true of butterfish. Much of the butterfish that the Japanese had contracted to buy arrived in Japan in deteriorated condition, with bellies swollen and bruised skin, and much of it was sold at a loss or was thrown away. We're trying to set up a program which will show US fishermen and processors how these products should be handled and what the Japanese want to buy and pay top dollar for. My clients are making an effort to help US fishermen and processors, but I think they want to be treated fairly in return for helping to develop markets in Japan for these underutilized species. We would very much like to have the Regional Council reconsider its reallocation formulas, and work out something which is a lot more equitable.

"This Amendment proposes a Reserve concept, but here again, this concept hardly seems fair, because most of the Reserve comes out of the foreign allocation. In effect, it will reduce the ability of the foreign vessels to know at the beginning of the season how much they will be allowed to catch and make plans. It leaves untouched the 24,000 tons which have been reserved over the past two years for Americans, and which US fishermen haven't taken. I think it would be a lot more equitable to reduce the DAH figures to more realistic levels, and then put in a Reserve on top of that. If US fishermen can catch that Reserve, fine. But if they can't, we would like to see a faster, more equitable reallocation of that surplus."

Ms. Williams asked Mr. Macnow if his clients believed that the DAH estimates in the Squid FMP were too high, or if they also believed the estimates in the proposed Amendment were too high. He replied that both sets of estimates were unrealistically high.

Mr. Coons asked if the estimate of US capacity was based only on people presently active in the fishery, or if it included future activity. Ms. Williams responded that the Council had done a limited survey of US processors to estimate future activity, and that the DAH and DAP estimates were not limited to only those fishermen and processors already in the fishery.

Amendment No. 1 To The Atlantic Mackerel FMP

Mr. Macnow asked to make a statement on behalf of his clients, the Japan Deep-Sea Trawlers Association: "My clients feel that mackerel has been treated as a by-catch species for the foreigners. In view of the abundance of mackerel, they feel the TALFF has been set much too low for a realistic operation. Mackerel have been virtually swimming into the nets of Japanese fishermen fishing for squid. The very low mackerel allocations have been restricting their ability to catch their squid quotas. I think there is general agreement that there is a great deal of mackerel out there. Most of it is young and the Council, reasonably I think, wants to keep the OY down for another year and let these mackerel grow a bit. Even though the Council has increased the OY for next year, we would like to see a larger TALFF, because of the great abundance, and it will cause a problem unless foreign fishermen get enough to cover the problems in the squid fishery."

The hearing was adjourned at approximately 8:30 p.m.

16 OCTOBER 1979 - FALMOUTH, MA

The hearing was opened by Mr. Keene at approximately 7:00 p.m. Others present were Patrick L. Carroll (New England Fishery Management Council), Thomas D. Morrissey (Northeast Regional Office, NMFS), Anne M. Lange (NMFS, NEFC, Woods Hole), and Anne Williams (MAFMC staff). One member of the public was present.

Mr. Bridges asked if permits would have to be obtained for the squid and mackerel fisheries. Mr. Keene responded that the original FMPs for squid and Atlantic mackerel, which will soon go into effect, contain permitting provisions, and that these Amendments would continue those requirements. Mr. Bridges stated that he already had four permits, and that such requirements were very harassing, especially for a fisherman such as he, who works mainly inshore and who only fishes such species for at most ninety days per year. Mr. Bridges stated that he had to submit annual reports for the town and for the state, a monthly report for the Atlantic bluefin fishery, and a weekly report for groundfish, and that he felt these reporting requirements were unreasonable, especially for a fisherman who switches fisheries frequently and who may not know what he will be fishing for in the near future. He stated that his opinion was that the more the reporting requirements increased, the less accurate the information received from them would be. He suggested that the Council work towards some simple and uniform system, monthly rather than weekly, which would reduce the amount of paperwork required of fishermen.

17 OCTOBER 1979 - GLOUCESTER, MA

Mr. Keene called the hearing to order at approximately 7:00 p.m. Others present were Thomas A. Norris (New England Fishery Management Council), Anne Lange (NMFS, NEFC, Woods Hole), Glen Mahoney (Northeast Regional Office, NMFS), and Anne Williams (MAFMC staff). Eight members of the public were present.

Amendment No. 1 To The Atlantic Squid FMP

Ms. Campen asked that a statement be made for the record by Mr. Matsuzawa, representing Japan Deep Sea Trawlers Association. Mr. Matsuzawa read from a prepared statement (Attachment A).

Ms. Leber asked a question on behalf of her husband, Mr. Fred Leber, who could not attend the hearing because he was in Mississippi seeing to the construction of a boat being built for the squid fishery out of Gloucester. Ms. Leber asked what plans, if any, were underway to regulate fixed gear. She stated that there were apparently many lobster pots in areas that are good squid fishing grounds, but that the number of pots in these areas make towing very difficult. Mr. Keene responded that gear conflict regulations had been developed (separately from any one Fishery Management Plan) in conjunction with the New England Fishery Council, and that these regulations were almost ready for inclusion in FMPs and implementation. Mr. Mahoney stated that the NMFS had just recently completed a series of public hearings that were jointly sponsored by the NMFS, the Councils and the Coast Guard. As a result of the public comments at those hearings, the four co-sponsors will be revising the proposed regulations. Mr. Mahoney said that publication of these proposed regulations in the Federal Register for formal public comment should occur early next year, perhaps sooner.

Amendment No. 1 To The Atlantic Mackerel FMP

Mr. Santapaola commented that mackerel had not been abundant in recent years in inshore waters, and that his catches had decreased dramatically over the last ten years. Ms. Lange stated that in the last few years, water temperatures appear to have been warming each year more rapidly than usual, that mackerel may have migrated

north more rapidly than usual, and consequently that mackerel have not moved inshore as much as they have historically. Mr. Keene added that there have been several reports of good mackerel abundance offshore. Mr. Santapaola stated that he had been in the mackerel fishery for several decades, that he had witnessed low abundance periods before, but that the present scarcity since the foreign fishery began was the longest and most severe that he had ever known. Mr. Santapaola stated that a foreign fishery early in the spring would significantly decrease the amounts available to the inshore fishermen. Mr. Santapaola stated his opinion that no American fishery for squid or mackerel would develop if large allocations were given to foreign nations.

18 OCTOBER 1979 - PORTLAND, MAINE

Mr. Keene opened the public hearing at approximately 7:00 p.m. Others present were Robert C. Morrill (NMFS, Portland, Maine), Bruce C. Nicholls (Northeast Regional Office, NMFS), Stephen H. Clark (NMFS, NEFC, Woods Hole), and Anne Williams (MAFMC staff). Four members of the public were present.

Amendment No. 1 To The Atlantic Squid FMP

Ms. Campen introduced herself and representatives from the Japan Deep Sea Trawlers Association. Ms. Campen stated that this group had submitted an official statement at the public hearing on these Amendments at the 17 October 1979 public hearing in Gloucester, Massachusetts, and that copies of this statement had been made available to these audiences. She volunteered to have the statement repeated if any one wished it, and offered to answer any questions.

Mr. Taber asked what was meant by the "incentives for the domestic harvesting sector" that were referenced, but not discussed, in the Amendment to the FMP. Ms. Williams replied that this was discussed in the original Squid FMP, but that no economic incentives were or could be offered by a Fishery Management Plan itself.

Mr. Taber stated that while he had no basic disagreement that resources should not be wasted, it was important that the US not ruin the market potential for US fishermen and processors by giving large allocations to foreign fishing nations. He stated that any TALFF allocated should be conditional upon market development in a country, regardless of the species in question. He stated that while the squid export market was strong for a period of time, it had recently softened, and that there were sizable inventories of unsold squid.

Ms. Campen responded that the Japanese were cognizant of the fact that as the US fishery developed, the TALFF would be decreased. She stated that the reason that the export market is currently not strong is not because the Japanese will not buy US fish, but the quality was lacking. She stated that Japan is presently importing squid from eleven other countries, with whom the US has to compete. Ms. Campen stated that the quality of US squid at the present time is not competitive. She stated that reducing the TALFF by itself would not increase Japanese imports. Ms. Campen stated that last year the Japanese government assured the US government that if the quality of US squid improved, there would be a market for all the squid the US could sell.

Mr. Matsuzawa stated that Japanese vessels were working in Canadian waters in a cooperative fishery with the Canadians. Half of the catch by Japanese vessels in the cooperative venture was processed on land in Canada. The other half of the catch was taken home by Japanese vessels. Mr. Matsuzawa stated that Canadians had made very good profits from this arrangement.

Mr. Keene asked what price the Canadians got for that squid. Mr. Matsuzawa stated that the half of the catch that was taken home to Japan was priced depending on the market at the particular time. Mr. Matsuzawa gave an example of prices paid to

Canada for squid in August this year. The price varied according to the size of the squid. The F.O.B. price for Illex weighing more than 300 grams was \$700 per metric ton. The price for 250 - 300 gram squid was \$650 per metric ton. The price for 200 - 250 gram squid was \$600 per metric ton (US dollars).

Mr. Matsuzawa said that the situation this year is different, however. This year Japan is getting squid from New Zealand and other areas, and squid imports from Canada have decreased very rapidly. He said that the frozen squid inventories in Canada are very high. Mr. Matsuzawa stated that Japan had received trade missions from Canada pleading with the Japanese to buy those unsold inventories. He stated that the Minister of Agriculture in Canada is scheduled to come to Japan to ask the Japanese to buy these supplies. He stated that he questioned why Americans were not making a similar effort in Japan to expand sales. He stated that there was presently a mission in Japan from the US Department of Commerce, attempting to expand sales into the Japanese markets, but none of the sample goods is seafood. Mr. Matsuzawa said the impression was that the US was not particularly anxious to expand its sales of seafood. He stated that a reduction of the TALFF in US waters was not the right way to try to develop the market in Japan, and would actually hamper the development of the industry here.

Mr. Taber stated that his suggestion was not necessarily to reduce the TALFF, but perhaps to receive a guarantee that a certain allocation would insure a place in the Japanese market.

Amendment No. 1 To The Atlantic Mackerel FMP

There were no comments on this Amendment.

The meeting was adjourned at approximately 8:30 p.m.

18 OCTOBER 1979 - ASBURY PARK, NJ

The hearing was opened at approximately 7:20 pm by William Feinberg (MAFMC). Others present were Bruce Halgren (New Jersey Division of Fish, Game, and Shellfisheries), Glen Mahoney (Northeast Regional Office, NMFS), and David R. Keifer (MAFMC staff). Three members of the public were present.

Mr. Keifer reviewed proposed Amendment #1 to the Atlantic Squid FMP and proposed Amendment #1 to the Atlantic Mackerel FMP. There were several questions about the Plans and the Amendments, but no comments on any of the proposals.

The hearing was closed at approximately 8:15 p.m.

19 OCTOBER 1979 - CAPE MAY, NJ

The hearing was opened at approximately 7:15 pm by Capt. David H. Hart (MAFMC Chairman). Others present were Bruce Halgren (New Jersey Division of Fish, Game, and Shellfisheries), Glen Mahoney (Northeast Regional Office, NMFS), and David R. Keifer (MAFMC staff). Twenty-one members of the public were present.

Mr. Keifer reviewed proposed Amendment #1 to the Atlantic Squid FMP and proposed Amendment #1 to the Atlantic Mackerel FMP. There were several questions about the Plans and the Amendments. A representative of the Japan Deep-Sea Trawlers Association presented a paper commenting on proposed Amendment #1 to the Atlantic Squid FMP (Attachment A). There were no other comments on any of the proposals.

The hearing was closed at approximately 8:30 p.m.

22 OCTOBER 1979 - RIVERHEAD, NEW YORK

The hearing was opened at approximately 7:30 pm by Anthony Taormina (MAFMC). Also present was David R. Keifer (MAFMC staff). Seven members of the public were present.

Mr. Keifer reviewed the proposed amendments to the Atlantic Squid and Atlantic Mackerel FMPs.

There was considerable discussion on the recommended alternative for Amendment #1 to the Squid FMP dealing with the probability of developing a US fishery for export so long as there is a significant TALFF provided for in the Plan. Several persons present felt that no export fishery would be developed unless foreign nations could no longer harvest squid themselves. One person suggested that nations that agree to purchase US-caught squid should be allocated TALFF on an agreed upon basis so that TALFF would increase to the extent that foreign purchases of US caught squid increased. One person suggested that the FMP should be permitted to lapse, that PMP management should be reintroduced, and that there should be no TALFF, on the grounds that the US fishing fleet does have the capacity to harvest the OYs if there is a market.

It was suggested that the proposed Optimum Yield in the Council's proposed alternative for Amendment #1 to the Atlantic Mackerel FMP might be too high in light of the most recent stock assessment, since much of the basis for the increase is the NMFS fall 1978 survey cruise and no significant numbers of mackerel were found in the spring 1979 survey cruise.

It was also suggested that, while the 4,000 mt TALFF might be reasonable if there has, in fact, been an increase in abundance of Atlantic mackerel, the possible additional 6,000 mt TALFF provided in the Reserve in the recommended alternative might be high enough to provide for a directed foreign fishery for Atlantic mackerel. It might be more conservative to allow the 6,000 mt to go unharvested to accelerate stock rebuilding if the 6,000 mt are not harvested by US fishermen.

It was suggested that the reporting requirements be revised to require only catch and effort data rather than the data required on the current logbooks and that the word "logbook" not be used to describe the reporting requirements.

The hearing was closed at approximately 9:15 p.m.

22 OCTOBER 1979 - OCEAN CITY, MARYLAND

The hearing was opened at approximately 7:15 P.M. by Robert Rubelmann (MAFMC). Others present were Peter Colosi (Northeast Regional Office, NMFS) and John Bryson (MAFMC staff). Six members of the public were present.

Mr. Bryson reviewed proposed Amendment #1 to the Atlantic Squid FMP and proposed Amendment #1 to the Mackerel FMP.

The prime concern was over the allocation for foreigners, when it would take place and how it would affect the US fishermen. There were objections to any large allocation to the foreigners.

There were several questions about the Plans and Amendments.

The hearing was closed at approximately 8:45 p.m.

23 OCTOBER 1979 - NORFOLK, VA

The hearing was opened at approximately 7:20 P.M. by Arthur Fass (MAFMC). Others present were Peter Colosi (Northeast Regional Office, NMFS) and John Bryson (MAFMC staff). Seven members of the public were present.

Mr. Bryson reviewed proposed Amendment #1 to the Atlantic Squid FMP and proposed Amendment #1 to the Mackerel FMP.

Concern was expressed over the foreign allocation, when it would take place and how it would affect the US fishermen.

It was felt that the amount of TALFF should be as low as possible and no allocation should be given to the foreigners until the US fishermen received their share.

One individual stated he was advised by foreigners that his catch was of good quality but they would not buy from him. At this point he feels that they are simply waiting for a new allocation to occur.

Mr. Gustave Fritschie, Director of Government Relations for the National Fisheries Institute, read a statement into the record. (Attachment B).

Mr. McHugh expressed concern that the OY for mackerel was being raised too fast and it should be held down for another year and provide some safety factors for stock rebuilding.

The hearing was closed at approximately 9:10 p.m.

ATTACHMENT A

COMMENTS BY THE JAPAN DEEP-SEA TRAWLERS
ASSOCIATION ON AMENDMENT #1 TO THE
ATLANTIC SQUID FMP

A. Reserve System:

Amendment #1 to the Atlantic Squid FMP recommends the following reserve system as a management measure:

(In MT)	<u>ILLEX</u>	<u>LOLIGO</u>
OY	30,000	44,000
DAH	5,000	7,000
DAP	5,000	7,000
TALFF	12,000	18,000
Reserve	13,000	19,000

The reallocation of Reserve would be on the following basis:

- a) Reallocations from Reserves to U.S. (domestic) quotas--
...to be made continuously in such manner as will not disrupt fishing activity.
- b) Reallocations from Reserves to TALFF --
...to be limited in accordance with the following extremely strict criteria:

(NOTE: Items outside parentheses refer to Loligo; those inside parentheses to Illex.)

...When the U.S. catch from April to September inclusive (April - August) equals or exceeds

50% or more (40% or more) of the annual domestic quotas, no reallocations would be made.

...When the U.S. catch falls short of 50% (40%) of annual domestic quotas, reallocations would be limited to not more than half the difference between reported domestic harvest and annual domestic quota.

...Effective dates: Loligo -- January 1
 Illex -- December 1

B. Problem Areas:

The following problems would arise from application of the system described in (A) above:

- (1) With the TALFF volume greatly reduced in comparison with the present FMP, there would be an unduly severe impact on foreign vessels.

<u>TALFF:</u>	(In Metric Tons)	
FMP	20,000	30,000
Amendment #1	12,000	18,000

- (2) In view of the severe criteria for reallocating Reserves to TALFF, when U.S. catch is insufficient, a large amount of the total potential harvest would remain unutilized.

Example:

Estimating the U.S. catch of Loligo at 7,000 MT a year, if the April to September portion exceeded

3,500 MT, there would be no reallocation to TALFF and the 19,000 MT Reserve would be left unutilized.

- (3) The essential objective in taking the above measure (as per (1) and (2))--i.e., a policy of lowering TALFF for the purpose of developing the U.S. fishery -- is assumed to be to expand the U.S. squid fishery at a time when it is still in at an early stage of development as an export fishery. This policy is diagrammed in Figure 1 (1).

However, there is a danger that this policy may in fact thwart the development of the squid fishery as an industry and so run counter to this objective (as diagrammed in Figure 1 (2)).

Taking the Japanese market as an example, in 1978 domestic (Japanese) production was roughly 384,000 MT, while imports came to some 50,000 MT.

A slight increase in both production and imports is expected during 1979, so that the outlook is for total supply to exceed 450,000 MT.

Estimated import volume from January - July, 1979 was as follows:

<u>Country of Origin</u>	<u>Total Volume (MT)</u>
Canada	8,480
New Zealand	5,450
Singapore	4,000
Argentina	3,750
Republic of Korea	3,500
Cuba	2,770
Spain	2,000
Poland	1,500
U.S.A.	1,350
Federal Republic of Germany	1,100
Ireland	110
TOTAL	34,010

Furthermore, squid prices in Japan tend to be determined largely on the basis of the Japanese off-shore catch, which accounts for over 300,000 MT per year. Thus, for squid to be imported into Japan, both price and quality must be very competitive.

If, therefore, Japanese fishing vessels were to cease their squid operations off the U.S. coast, given the present situation in which the U.S. squid fishery is not competitive either in price or quality, the decline in supply resulting from a cessation of operations by the Japanese fishery would be promptly covered by imports from such countries as Argentina, New Zealand, and Canada which ^{also} have their eyes on the Japanese export market.

Far from contributing to an increase in exports by U.S. squid fishermen to Japan, the result would be to further reduce the already low share of "squid from U.S. waters" in the Japanese market (defining "squid from U.S. waters" as the sum of squid caught by Japanese fishing vessels in U.S. waters and the amounts exported by U.S. fishermen to Japan).

In that way, there is the danger that Japanese market acceptance of squid from U.S. waters would steadily decline, with a consequent loss of competitive strength.

Accordingly, given the above realities, it is our view that, rather than reducing TALFF, a policy providing for suitable reallocations from OY to TALFF would, in the final analysis, better serve the development of the U.S. squid export fishery (as per the pattern shown in Figure 1 (3)).

FIGURE 1 (1)

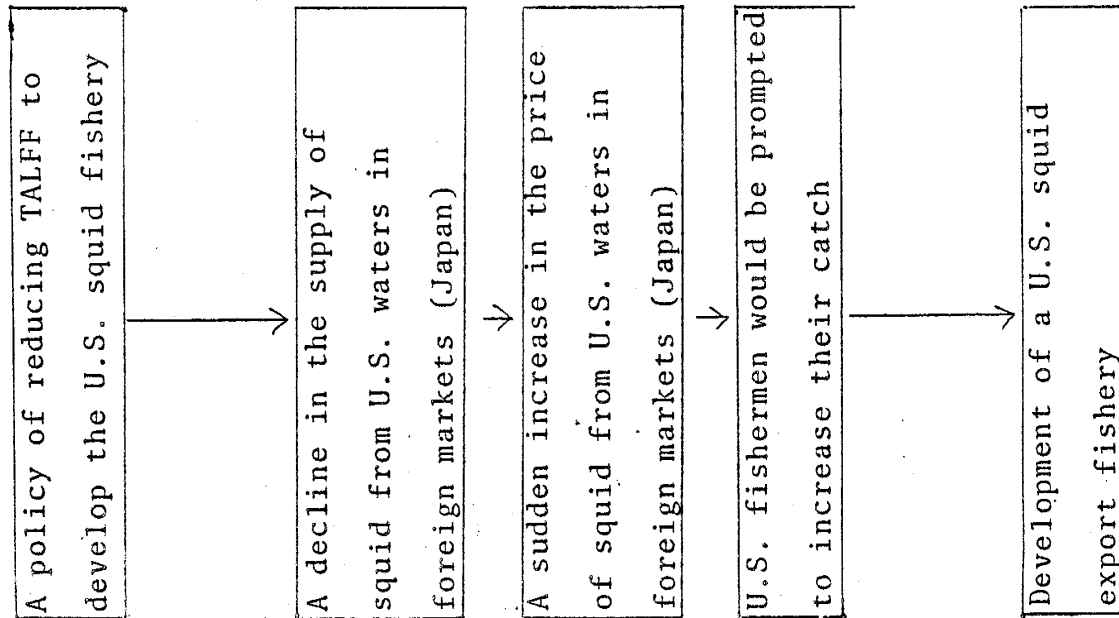


Figure 1 (2)

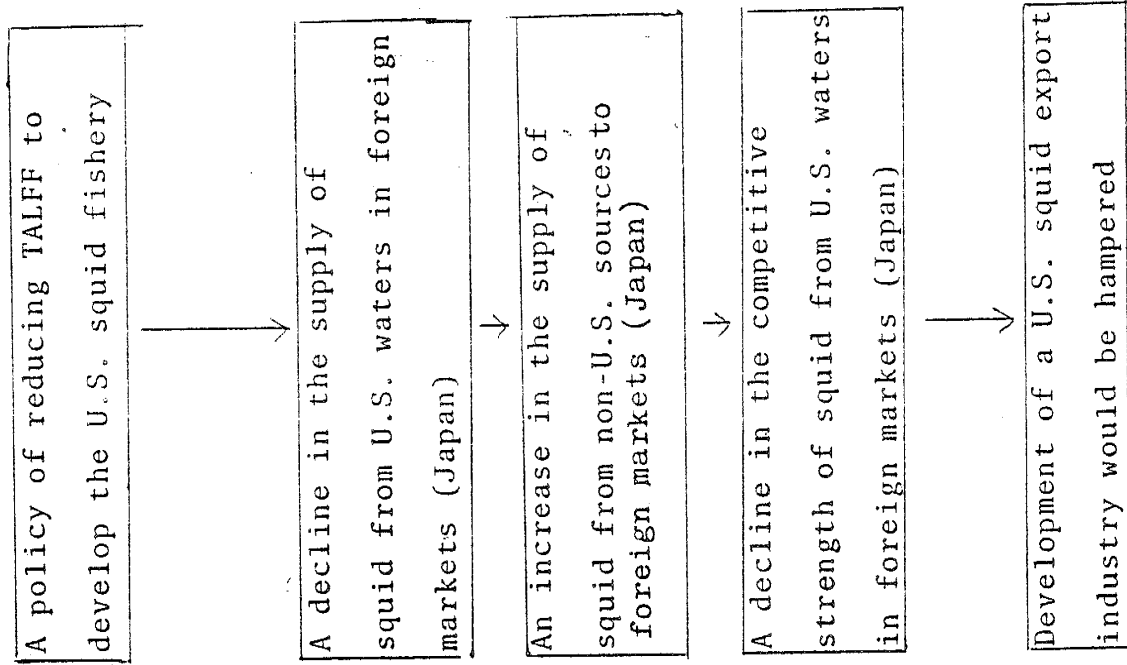
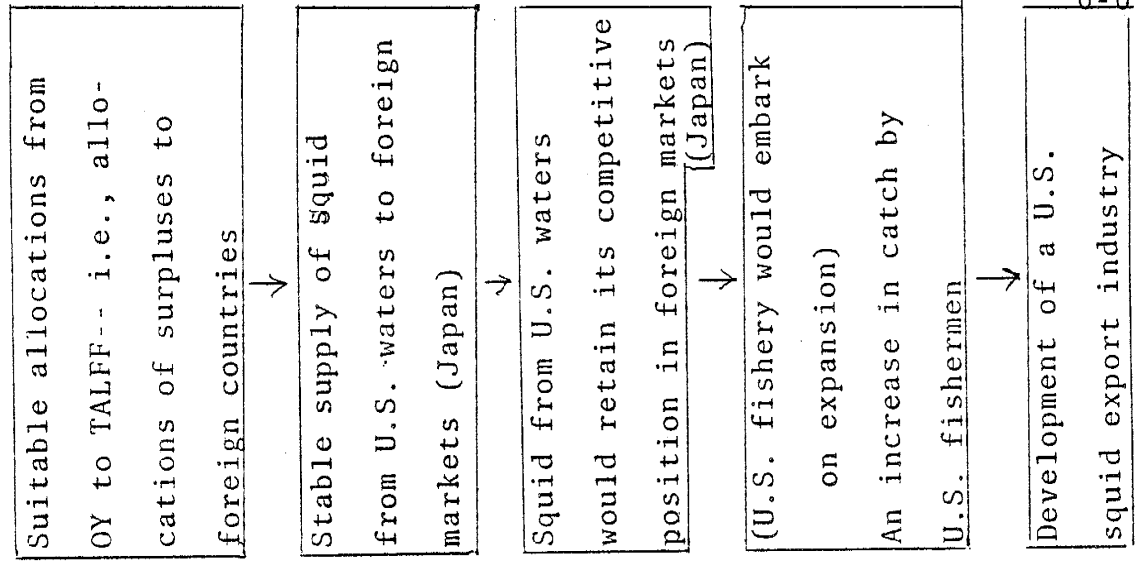


Figure 1 (3)



C. Our Recommendations and Requests:

Following are our thoughts with respect to the above matters:

- (1) We recognize the fact that the basic policy embodied in Amendment #1 is to promote the future development of the U.S. squid fishery. However, with this fishery presently in a developing stage, for U.S.-caught squid to capture overseas markets, we believe that it is actually in the interests of U.S. fishermen that surpluses beyond their catch capabilities be fairly distributed to TALFF (with special consideration being given to countries with export potential).

Accordingly, in connection with TALFF determination, we propose the following improvements in the reallocation system with a view to averting a sharp decline in the supply of squid from U.S. waters in foreign markets (e.g., Japan),

(In MT)	<u>LOLIGO</u>	<u>ILLEX</u>
OY	44,000	30,000
DAH	7,000	5,000
DAP	7,000	5,000
TALFF	23,000	15,000
Reserve	14,000	10,000

(2) We propose that reallocations to TALFF be made twice a year so that foreign countries can fully catch any surpluses left over by U.S. fishermen.

(a) LOLIGO:

First Reallocation:

When the U.S. catch for the four-month period April-July equals or exceeds one third of the sum of the DAH + Reserve, no reallocation would take place.

When the U.S. catch falls short of this target during the above time period, reallocations would be limited to not more than:

(DAH + Reserve) minus

(U.S. 4-month catch) x 3

Effective date: September 1

Second Reallocation:

When the U.S. catch for the eight-month period April - November equals or exceeds 2/3 of the DAH + Reserve, no reallocation would take place.

When the U.S. catch falls short of this target during the above time period, the reallocation would be limited to not more than:

(DAH + Reserve) minus
(U.S. 8-month catch) x 1.5

However, if a first reallocation has been made, this would be deducted from the second reallocation.

Effective date: January 1

- (b) ILLEX (based on an eight-month fishing season from April to November)

First Reallocation:

When the U.S. catch for the three-month period April- June equals or exceeds $\frac{3}{8}$ of the sum of the DAH + Reserve, no reallocation would take place.

When the U.S. catch falls short of this target during the above time period, the reallocation would be limited to not more than:

(DAH + Reserve) minus
(3-month U.S. catch) x $\frac{8}{3}$

Effective date: August 1

Second Reallocation:

When the U.S. catch for the five-month period

April - August equals or exceeds 5/8 of the
DAH + Reserve, no reallocation would take
place.

When the U.S. catch falls short of this target
during the above time period, the reallocation
would be limited to not more than:

$$\begin{aligned} & (\text{DAH} + \text{Reserve}) \text{ minus} \\ & (5 \text{ month U.S. catch}) \times 8/5 \end{aligned}$$

However, if a first reallocation has been made,
this would be deducted from the second realloca-
tion.

Effective date: October 1

- (3) We, of course, appreciate that, as the U.S. squid fishery develops, TALFF will be decreased. We hope to be able to continue ^{future} operations on the basis of new cooperative arrangements with U.S. fishermen. In this respect, there has been a steady development in approaches to and cooperative arrangements with U.S. fishermen on the part of individual Japanese enterprises-- a trend which we have every intention of continuing.

However, until such time as U.S. fishermen gain a strong competitive position in world markets, we trust that you will give due consideration to the importance of the Japanese squid market and of cooperative relationships with Japan.

STATEMENT OF GUSTAVE FRITSCHIE
DIRECTOR OF GOVERNMENT RELATIONS
NATIONAL FISHERIES INSTITUTE

Before

THE MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

On

AMENDMENT #1 TO THE ATLANTIC SQUID FISHERY MANAGEMENT PLAN

October 23, 1979

Mr. Chairman, I am Gustave Fritschie, Director of Government Relations for the National Fisheries Institute. NFI represents more than 850 member firms which harvest, process and distribute fish and seafood products. The Institute is pleased to have this opportunity to comment on draft Amendment number 1 to the Atlantic Squid Fishery Management Plan. This Amendment places a portion of the optimum yield for both *Illex* and *Lolligo* squid in Reserve and would provide for a distribution of that Reserve during the fishing year to the Domestic Annual Harvest and the Total Allowable Level of Foreign Fishing. The establishment of a Reserve appears to be in accordance with the FMP's 8th management objective, "to encourage increased American participation in the Squid Fishery."

The Institute fully supports that objective and recently testified before the House Subcommittee on Fisheries, Wildlife Conservation and the Environment in opposition to H. R. 4360, a bill which would have permitted foreign vessels to fish within the fishery conservation zone and land their catch in U. S. ports while serving as so-called training vessels. In that testimony, NFI called for Government action to minimize or eliminate overseas trade barriers and to lower the continued high levels of foreign fishing by countries which would be prime U. S. markets. A copy of my statement before the House Committee is attached for the Council's consideration.

While the establishment of a Reserve is a step in the right direction, NFI is concerned that the size of the reserve and the assumption by foreign nations that all or much of the Reserve will be reallocated will lower those nation's demands for U. S. caught and processed squid. The Foreign Allocation Report prepared by the Secretary of the Treasury pursuant to Public Law 95-354, indicates a number of foreign trade barriers to U. S. squid exports. Italy, Japan, Spain, Korea, Poland, Romania and Taiwan all have tariff and nontariff barriers. NFI has requested the

Department of Commerce to seek the elimination of such barriers. However, it is unlikely that the countries will remove the barriers if they believe they will ultimately harvest the TALFF and all or most of the Reserve.

For this reason, the Institute suggests that the Council consider alternative management measure number 6 which would provide for a reduction in the OY for Illex and Lolligo squid. NFI recognizes that the Council has reviewed this option and has taken the position that "the most likely result is that a resource available for harvest would be underutilized." While this may be the case, there is no specific requirement under the FCMA that the yield be equal to the maximum sustainable yield.

The term 'optimum' as defined in the Fishery Conservation and Management Act clearly provides that the yield from the fishery will be that amount of fish which will provide the greatest overall benefit to the Nation and which is prescribed as such on the basis of the MSV of such fishery as modified by economic social or ecological factors. It is likely that the greatest overall benefit to the Nation will accrue from an expanded American fishing and processing fleet for squid in conjunction with new and expanded shoreside processing and distribution facilities. The resulting increased exports in squid products would assist in decreasing the present negative balance in our balance of trade in fishery products and will create new employment opportunities.

The Act specifically requires that economic considerations can be a factor in determining the OY and experience in other fisheries appears to indicate that a reduction in the TALFF will result in the development of an increased export market in foreign nations. This result has been observed in the Butterfish Fishery, The Tanner Crab Fishery and the Pacific Salmon Fishery. Tanner Crab exports, for example, went from negligible levels in 1975 to 14,000 metric tons in 1978. The salmon exports have also increased from the 4,000 metric ton level in 1975 to almost 40,000 metric tons in 1978. Experience in these fisheries would appear to indicate that a decrease in

the optimum yield for the squid fishery would result in increased export sales to foreign nations. The Institute respectfully suggests to the Council that careful consideration be given to the concept of reducing the OY as a preferable management measure to reach, what we believe is one of the more important management objectives for the squid fishery, to encourage increased American participation.

STATEMENT OF GUSTAVE FRITSCHIE
DIRECTOR OF GOVERNMENT RELATIONS
NATIONAL FISHERIES INSTITUTE

Before

THE HOUSE SUBCOMMITTEE ON FISHERIES WILDLIFE
CONSERVATION AND THE ENVIRONMENT

On

THE UNDERUTILIZED SPECIES DEVELOPMENT ACT OF 1979 H.R. 4360

September 11, 1979

Mr. Chairman, I am Gustave Fritschie, Director of Government Relations of the National Fisheries Institute. The Institute is a national trade association representing more than 830 member companies which harvest, process and distribute fish and seafood products. I am pleased to have this opportunity to express the Institute's opposition to H. R. 4360.

As drafted, it is the intent of this legislation to "expedite the development by United States fishermen of certain species currently underutilized or not utilized by United States fishermen." This goal seems laudable and in fact the Institute's Board of Directors is on record as supporting limited fisheries development programs to assist American industry in taking full advantage of the fishery resources found within the fishery conservation zone. The question pending before this committee is whether the bill is the proper mechanism to increase the harvesting, processing and distribution of underdeveloped fish stocks. To respond effectively to this question, there has to be an understanding of the actual impediments to the development of these fisheries.

Evidently the sponsors of the legislation view as major impediments: the lack of foreign technology; limited construction in U. S. yards of vessels of advance design; and the lack of a pool of American fishermen and crew skilled in the operation of such advanced vessels. Based on responses from NFI members, these perceived impediments do not exist. In one underutilized fishery, namely the Atlantic Squid Fishery, the real problem is access to overseas markets and trade and tariff barriers that limit entry to such markets by the U. S. industry. Another real impediment to the development of the domestic squid fishery is continued foreign fishing by countries which should be prime markets for U. S. harvested and processed squid. Other factors that may impede development of

underutilized fisheries in general include Food and Drug policy in this country which may limit the use of a more attractive nomenclature system, prices presently being offered both to fishermen and the processor for traditional species and the lag-time in bringing the necessary vessels and equipment into the American fleet.

The provisions of H.R. 4360 do not respond to the real barriers set forth above. In fact, the entry of so-called foreign training vessels with the probable shipment of that harvest to the foreign nation involved will have the effect of further restricting U. S. access to foreign markets.

What then is the proper response by the Congress and the Administration to the real impediments confronting development of our underutilized fisheries? One possibility would be to encourage, at a high level, discussions between the United States Government and the governments of foreign nations to indicate the close linkage between U. S. access to their markets and the continued granting of foreign fishing allocations under the Fishery Conservation and Management Act. This position was forcefully articulated by NOAA administrator Dick Frank and Assistant Administrator for Fisheries, Terry Leitzell, during a mission to Japan in the fall of 1978. Indeed, such action by the Administration is a component of the fisheries development policy announced at the Springfield conference. There is no reason why this position forcefully articulated by our government representatives in Japan could not be repeated in other countries.

A stated policy of the Fisheries Conservation and Management Act is to "encourage the development of fisheries which are currently underutilized or not utilized by United States fishermen . . ." Further, the Congress in its Statement of Findings and Purposes recognized that foreign fishing has contributed

to the damage of the economies in many coastal areas. This linkage between increased exports of U. S. underutilized species and continued foreign fishing allocations appears to be very much in accord with the policies and purposes enunciated in the FCMA.

A second positive step which could be taken by the government to encourage the export of underutilized species is the creation of sufficient fishery attache positions in overseas countries. Legislation introduced in the Senate by Senators Kennedy and Magnuson, and others, calls for the creation of six overseas fishery positions. Enactment of this legislation would have a beneficial effect on efforts to sell products overseas.

Government action to minimize or eliminate overseas trade barriers and to create fishery trade posts overseas will facilitate increases in U. S. fishery exports by all interested segments of the seafood industry on a competitive basis. In NFI's opinion, all the industry can request is the type of limited assistance best provided by the federal government which will enable the industry to compete on an equal basis for the world market share.

H. R. 4360 would not provide for free competition. Instead, it permits firms who are successful in securing a foreign connection to gain preferred access to the world market and the use of foreign fishing vessels which are presently equipped to fish and process underutilized species within our zone. The creation of such an unequal competitive edge at a time when many U. S. firms with long experience in the fishing industry are diligently seeking foreign markets for underutilized species and committed to the construction of suitable fishing vessels is contrary to the free enterprise system and should be rejected by this Committee.

Mr. Chairman, the most effective way of illustrating why this bill is not necessary is to briefly review activities in one of the underutilized fisheries. The squid fishery is a typical underutilized fishery. For Loligo Squid, the optimum yield is 44,000 metric tons and the annual domestic harvest as set forth in the Fishery Management Plan for the Atlantic Squid Fishery is 14,000 metric tons and the catch quota for foreign vessels is 30,000 metric tons. NFI is aware of at least five vessels with freezing capacity which are presently being constructed or renovated in the United States for participation in this fishery. Information that I have indicates one such vessel will have an on-board freezing capacity of 22,000 pounds per day and a storage capacity of 100,000 pounds of packaged squid. The boat will have capabilities geared to fish mid-water and bottom trolls. A letter from a company committed to expansion of the squid fishery states, "we do not need any foreign vessels for training us on the ways of the harvesting and handling of squid." This type of activity and the amount of money being invested by presently existing U. S. firms with long experience in the fishing industry is a compelling argument against further consideration of the pending legislation.

Another factor to be considered by the Committee is alternative approaches to the question of "Technology Transfer." Congressman Don Young has introduced H. R. 5035 which addresses this issue. In addition, research and development projects under the S-K Act can perform technological reserach. Finally, interested firms can contract for technological assistance. None of these alternatives would require the use of "foreign training vessels."

In addition to the very basic policy objections, NFI's analysis of the legislation raises many questions which we would like to share with the Committee. First, the legislation as drafted does not require the participation of the Regional Fishery Management Councils created under the FCMA. In fact, Section 5 of the legislation specifically states that notwithstanding the provision of the Fishery Conservation and Management Act, a "training vessel" may operate in the fisheries of the United States. This language is particularly troublesome in view of the major reasons for the creation of the council structure. During the House debate on H. R. 200, the former Chairman of this Subcommittee, Mr. Leggett, states, "the second major area of strong concern was that of Federal against States' rights with regard to jurisdictions and management authorities. Through the composition of the various regional fishery councils which allow for strong private and state participation, the states will have direct impact on the development of the Marine Fishery Management Plan which the Secretary of Commerce will then implement."

During the Senate debate on S. 961, Senator Stevens, "I think it would be futile for my colleague and me to argue whether Atlantic Squid is or is not overfished. We are not capable of making that determination, at least I am not capable of making that decision. I want to set up a mechanism by which the people of the region affected can select those whom they think are capable of managing their fisheries."

In fact, Mr. Chairman, the Mid-Atlantic Council has considered in some detail the status of Atlantic Squid Fishery, and one of the objectives of the Fishery and Management Plan which has been approved by the Department of Commerce, is to

"encourage increased American participation in the squid fisheries." The failure of this legislation to require approval of proposed underutilized species development plans by the appropriate regional council is a serious deficiency.

Second, while the bill appears to only permit foreign vessels to fish in the capacity of a training vessel, while suitable vessels are being constructed in the U. S., Section 5 (c) of the legislation permits the Secretary of Commerce to extend the authority granted the vessel for an open-ended period of time if a determination is made that an allowable level of foreign fishing still exists for the fishery concerned. In NFI's opinion, there should be no provision for the extended fishing time by the training vessels once the vessel constructed under the plan is operational.

Third, the legislation does not require that the applicant have a one to one ratio between training vessels and fishing vessels under construction. Under this legislation it would be possible for an applicant to bring in five training vessels and construct only one vessel in the United States.

Fourth, there is no requirement that the applicant demonstrate to the Secretary knowledge of the fishing industry and experience in that industry. Quite possibly the only individuals with fishing experience under this legislation would be the foreign company participating in the joint venture. Contrary to this, if you examine the present fishery, United States firms prepared to expand into the squid fishery have many years of experience, supported the enactment of the Fisheries Conservation and Management Act and hope to be the prime beneficiaries of that legislation which was intended in part to supplant foreign fishing dominance in U. S. waters.

Fifth, the bill would permit one applicant to harvest a catch equal to 20 percent of the total allowable level of foreign fishing and would permit all such applicants for a particular fishery to harvest a catch equal to 50 percent of the total allowable level of foreign fishing. The bill also requires that once the fish is harvested by the training vessel, it shall be deemed fish harvested by the vessels of the United States and the total allowable level of foreign fishing shall be reduced accordingly. If you apply these figures to the current Squid Management Plan, 50 percent of the allowable level of foreign fishing, or 15,000 metric tons would exceed the domestic level of fishing which is estimated to be 14,000 metric tons. The result of the application of these percentage limitations against the actual figures for the squid fishery illustrates again the need for active involvement by the Regional Fishery Management Councils.

Sixth, the bill does not require the actual construction of a vessel as a condition for approval of the plan.

Seventh, the bill does not require a sufficient percentage of the revenue from the vessel to be applied to the construction of the new vessel. If there is any argument in support of this bill it would appear to be that revenues from the training vessels are necessary to finance construction of the vessel.

Mr. Chairman, I wish to emphasize that even if the seven deficiencies set forth above are corrected, the legislation should not be approved by this Committee. The major question as outlined at the outset of my testimony is whether or not this legislation correctly identifies and then addresses the real impediments to the development of underutilized fisheries within the zone. The Institute submits that the bill does not.

Mr. Chairman, that concludes the Institute's statement, I am prepared to answer any questions that you or your Colleagues on the Committee may have.



NATIONAL COALITION FOR MARINE CONSERVATION, INCORPORATED

15th FLOOR

100 FEDERAL STREET - BOSTON, MASSACHUSETTS 02110

(617) 338-2909

OCT 2 1979

MID ATLANTIC

Mr. John C. Bryson
Mid Atlantic Fishery Management Council
Federal Building, Room 2115
North and New Streets
Dover, Delaware 19901


Dear Mr. Bryson:

Although there is no recreational fishery for squid, except perhaps for small, isolated bait fisheries which may or may not exist on a regular basis, there is an extremely important, indirect recreational fishing interest in the species because of its function as an almost universal forage species. Squid are a basic building block of the food chains, and nearly all of the higher predators prey upon it; nevertheless, there is little information as to what level of abundance of squid is required to sustain a given level of any of such predator species. Squid is also a predator in its own right and its function as such is also poorly understood at this time. For these reasons, we urgently recommend that OY's for Loligo and Illex be maintained at present levels.

Furthermore, we believe as suggested in Amendment #1 to the Atlantic Squid Fishery Management Plan that squid management should be combined with butterfish management. In addition we recommend that consideration be given to combining squid with mackerel for management purposes.

Because the unknowns concerning the interspecific relationships of squid at different trophic levels, we urge the Council to restate the objectives of the plan, perhaps by amending objective No. 7, to include improving understanding of the predator-prey functions of the species.

Sincerely yours,


Christopher M. Weld

CMW/nc

"Let us face in time the fact that the ocean can be destroyed"

THOR HEYERDAHL



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

MAILING ADDRESS:
Commander (Aol)
Atlantic Area, USCG
Governors Island
New York, NY 10004

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OCT 15 1979

OCT 19 1979

Mr. John Bryson
Mid-Atlantic Fishery Management Council
Federal Building, Room ~~711D~~ ATLANTIC COUNCIL
North and New Streets
Dover, Delaware 19901

Dear Mr. Bryson:

I have reviewed Amendments #1 to the Atlantic Mackerel, Butterfish, and Squid Fishery Management Plans. The following comments apply to all three amendments:

a. Vessel of the United States is defined as: "(a) any vessel documented or numbered by the United States Coast Guard under United States law, or (b) any vessel under five net tons which is registered under the laws of any state." This definition excludes all vessels five net tons and over which are registered by a state and all unnumbered vessels not powered by machinery. Non-commercial vessels five net tons and over may be registered by a state and vessels not powered by machinery might not be numbered. I recommend the definition be changed to read:

"Vessel of the United States means:

- (1) any vessel documented under the laws of the United States;
- (2) any vessel numbered under a federal or state system under the Federal Boat Safety Act of 1971; and
- (3) any vessel not powered by machinery which is owned by a United States National and which operates out of a port within the United States."

b. Personal Use is defined as: "...use as bait, for human consumption, or for other purposes not including sale or barter; in amounts not to exceed 100 pounds (45.4 kilograms) per trip." The definition does not specify whether the 100 pounds per trip is for the vessel or for each person on the vessel. I recommend this be clarified by adding after the words "100 pounds (45.4 kilograms)" either "per person" or "per vessel". The phrase "not including sale or barter" modifies only "other purposes" and not "use as bait" or "for human consumption". If it is intended that personal use include sale or barter for bait or human consumption in quantities less than 100 pounds

OCT 15 1979

per person or per vessel per trip, it should be more clearly stated in the definition to avoid confusion.

Thank you for the opportunity to comment on the draft amendments.

A handwritten signature in cursive script, appearing to read 'M. Y. Suzich', written in dark ink.

M. Y. SUZICH



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III

6TH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

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OCT 16 1979

MID ATLANTIC COUNCIL

Mr. John C. Bryson
Executive Director
Mid-Atlantic Fishery
Management Council
Federal Building, Rm. 2115
North and New Streets
Dover, DE 19901

Dear Mr. Bryson:

We have reviewed the draft Supplemental Environmental Impact Statement and Amendment #1 to the Atlantic Squid Fishery Management Plan of August 1979. On the basis of our review, we have assigned the document an EPA Category Rating of LO-1 (Sufficient and Lack of Objections).

We would like to note that municipal ocean dumping activities are still occurring in this Middle Atlantic Region. All dumping in this area will cease by December 31, 1980.

The classification and the date of EPA's comments will be published in the Federal Register in accord with our responsibilities promulgated under Section 309 of the Clean Air Act Amendments.

Sincerely yours,

A handwritten signature in cursive script that reads "John R. Pomponio".

John R. Pomponio
Chief
EIS & Wetlands Review Section



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30308

October 26, 1979

4SA-EIS

Mr. John C. Bryson, Executive Director
Mid-Atlantic Fishery Management Council
Federal Building, Room 2115
North and New Streets
Dover, Delaware 19901

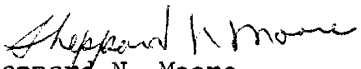
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OCT 29 1979
MID ATLANTIC COUNCIL

Dear Mr. Bryson:

We have reviewed both Amendment #1 to the Atlantic Mackerel Fishery Management Plan and Draft Supplemental Environmental Impact Statement and Amendment #1 to the Atlantic Squid Fishery Management Plan and Draft Supplemental Environmental Impact Statement. We have no comment concerning this document.

If we can be of further assistance, feel free to call on us.

Sincerely yours,


Sheppard N. Moore
Chief, EIS Review Section

cc: Sidney R. Galler, DOC

RESPONSES TO COMMENTS

Comments on Amendment #1 to the Atlantic Squid FMP made at the hearings and in letters received by the Council addressed several issues. Many comments dealt with the relationship between the TALFF, Reserve, and the development of the US squid fishery. Concern on this issue was expressed at almost every hearing and in the statements submitted at the hearings by the Japan Deep-Sea Trawlers Association (Attachment A to the hearing summary) and by Gustave Fritschie (Attachment B to the hearing summary). An objective of the FMP is to "encourage increased American participation in the squid fishery." The Council believes that the development of the US squid fishery is dependent to a significant degree on the development of export markets for US harvested and processed squid. Further, it believes that this can only be accomplished through reductions in TALFF so that there is an incentive to foreign nations to purchase US harvested and processed squid. The Reserve concept included in Amendment #1 is designed to implement these concepts while acknowledging that the US fishery cannot, in the short-run, expand to a level that would result in the Domestic Annual Harvest equalling the Optimum Yield (which would result in a TALFF of 0). Given the short life span of both squid species, it seemed unreasonable to reduce the OYs to levels that would equal the anticipated US harvest. The reasonable procedure seemed to be to introduce a Reserve that would be readily transferrable to DAH if the actual US harvest approached the initial estimate of DAH but that, under certain circumstances, could be transferred to TALFF. It is recognized that the provisions of the FMP dealing with allocations from Reserve to TALFF might create problems for foreign nations. However, the Council believes that its primary responsibility is to the US industry and has attempted to establish an allocation procedure that recognizes the needs of the developing US fishery.

With regard to the 2 October 1979 letter from the National Coalition for Marine Conservation, Inc., the OYs for Loligo and Illex are not changed in the final version of Amendment #1 from the values in the original FMP. The Council intends to merge the Atlantic Squid and Butterfish FMPs as soon as possible following approval of the Butterfish FMP by the Secretary of Commerce. The Council has adopted new objective 5 which states "Improve understanding of the condition of the stocks, including predator-prey relationships".

With regard to the 15 October 1979 letter from the US Coast Guard, the Draft Proposed Regulations have been revised to incorporate the suggestions. However, it must be recognized that the NMFS has final responsibility for regulations implementing FMPs and amendments.

APPENDIX IV. DRAFT PROPOSED REGULATIONS
PART 655 - ATLANTIC SQUID FISHERY

Subpart A - General Provisions

Sec.

- 655.1 Purpose and Scope.
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- 655.3 Relation to Other Laws.
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- 655.25 Gear Restrictions. (Reserved)

Authority: 16 U.S.C. 1801 et seq.

Subpart A - General Provisions

§655.1 Purpose and Scope.

(a) The regulations in this Part govern fishing for Atlantic squid by fishing vessels of the United States within that portion of the Atlantic Ocean over which the United States exercises exclusive fishery management authority.

(b) The regulations governing fishing for Atlantic squid by foreign vessels in the fishery conservation zone are contained in 50 CFR Part 611.

(c) These regulations implement the Fishery Management Plan for the Squid Fishery of the Northwest Atlantic Ocean, which was prepared and adopted by the Mid-Atlantic Fishery Management Council and approved by the Assistant Administrator.

§655.2 Definitions.

In addition to the definitions in the Act, the terms used in this Part shall have the following meanings:

Act means the Fishery Conservation and Management Act of 1976, as amended, 16 U.S.C. 1801, et seq.

Assistant Administrator means the Assistant Administrator for Fisheries of the National Oceanic and Atmospheric Administration, Department of Commerce, or an individual to whom appropriate authority has been delegated.

Atlantic squid or squid means the species Illex illecebrosus (short-finned squid) and Loligo pealei (long-finned squid).

Authorized Officer means:

- (1) Any commissioned, warrant, or petty officer of the U.S. Coast Guard;
- (2) Any certified enforcement officer or special agent of the National Marine Fisheries Service;
- (3) Any officer designated by the head of any Federal or State agency which has entered into an agreement with the Secretary of Commerce and the Commandant of the Coast Guard to enforce the provisions of the Act; or
- (4) Any Coast Guard personnel accompanying and acting under the direction of any person described in paragraph (1) of this definition.

Catch, take, or harvest includes, but is not limited to, any activity which results in mortality to any squid or bringing any squid on board a vessel.

Fishery Conservation Zone (FCZ) means that area adjacent to the United States which, except where modified to accommodate international boundaries, encompasses all waters from the seaward boundary of each of the coastal States to a line on which each point is 200 nautical miles from the baseline from which the territorial sea of the United States is measured.

Fishing includes any activity, other than scientific research vessel which involves:

- (1) The catching, taking, or harvesting of squid;
- (2) The attempted catching, taking, or harvesting of squid;
- (3) Any other activity which can reasonably be expected to result in the catching, taking, or harvesting of squid; or
- (4) Any operations at sea in support of, or in preparation for, any activity described in paragraphs (1), (2), or (3) of this definition.

Fishing 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.

Fishing vessel means any vessel, boat, ship or other craft which is used for, equipped to be used for, or of a type which is normally used for: (1) fishing; (2) aiding or assisting one or more vessels at sea in the performance of any activity relating to fishing, including, but not limited to, preparation, supply, storage, refrigeration, transportation, or processing.

Metric Ton (mt) means 1,000 kilograms, which is equal to 2,204.6 pounds.

Operator, with respect to any fishing vessel, means the master or other individual on board and in charge of that vessel.

Owner, with respect to any fishing vessel, means:

- (1) Any person who owns that vessel in whole or in part;
- (2) Any charterer of the vessel, whether bareboat, time, or voyage;
- (3) Any person who acts in the capacity of a charterer, including but not limited to parties to a management agreement, operating agreement, or any similar agreement that bestows control over the destination, function, or operation of the vessel; or

- (4) Any agent designated as such by a person described in paragraphs (1), (2), or (3) of this definition.

Person means any individual (whether or not a citizen or national of the United States), corporation, partnership, association, or other entity (whether or not organized or existing under the laws of any State), and any Federal, State, local or foreign government or any entity of any such government.

Personal use (of squid) means use as bait, for human consumption, or for other purposes (not including sale or barter) in amounts not to exceed 100 pounds (45.4 kilograms) per person per trip.

Regional Director means the Regional Director, Northeast Region, National Marine Fisheries Service, Federal Building, 14 Elm Street, Gloucester, Massachusetts 01930, Telephone (617) 281-3600; or a designee.

Regulated species means any species for which fishing by a vessel of the United States is regulated pursuant to the Act.

United States harvested squid means squid caught, taken, or harvested by vessels of the United States under this Part, whether or not such squid is landed in the United States.

Vessel of the United States means:

- (a) Any vessel documented under the laws of the United States;
- (b) Any vessel numbered under a federal or state system under the Federal Boat Safety Act of 1971; and
- (c) Any vessel not powered by machinery which is owned by a United States national and which operates out of a port within the United States.

§655.3 Relation to other laws.

- (a) Nothing in this Part 655 shall be construed as relieving any person from compliance with other requirements imposed by any regulation or statute of the United States or of any State.
- (b) For Federal regulations governing the harvest of Atlantic squid by foreign fishing vessels, see 50 CFR Part 611.
- (c) All fishing activity, regardless of species sought, is prohibited pursuant to 15 CFR Part 924, on the U.S.S. Monitor Marine Sanctuary, which is located off the coast of North Carolina (35°00'23"N., 75°24'32"W.)

§655.4 Vessel Permits and fees.

(a) General. Every fishing vessel, including party and charter boats, fishing for Atlantic squid under this Part must have a permit issued under this section. Vessels taking squid for personal use are exempt from this section.

(b) Eligibility. (Reserved)

(c) Application.

- (1) An application for a permit under this Part must be submitted and signed by the owner or operator of the vessel on an appropriate form obtained from the Regional Director at least 30 days prior to the date on which the applicant desires to have the permit made effective.

- (2) Applicants shall provide all the following information:
- (i) The name, mailing address including Zip code; and telephone number of the applicant;
 - (ii) The name of the vessel;
 - (iii) The vessel's United States Coast Guard documentation number or, if the vessel is under five net tons, the vessel's State registration number.
 - (iv) The home port, gross tonnage, radio call sign, and length of the vessel;
 - (v) The engine horsepower of the vessel;
 - (vi) The approximate fish hold capacity of the vessel;
 - (vii) The type and quantity of fishing gear used by the vessel;
 - (viii) The average size of the crew, which may be stated in terms of a normal range; and
 - (ix) Any other information concerning vessel characteristics requested by the Regional Director.

(3) Any change in the information specified in paragraph (c) (2) of this section shall be submitted by the applicant in writing to the Regional Director within 15 days of the change.

- (d) Fees. No fee is required for any permit issued under this Part.
- (e) Issuance. The Regional Director shall issue a permit to the applicant no later than 30 days from the receipt of a completed application.
- (f) Expiration. A permit shall expire when ownership or name of the vessel changes or if the vessel does not land any squid for one fishing year.
- (g) Duration. A permit shall continue in full force and effect until it expires or is revoked, suspended, or modified pursuant to 50 CFR Part 621.
- (h) Alteration. No person shall alter, erase, or mutilate any permit. Any permit which has been intentionally altered, erased, or mutilated is invalid.
- (i) Replacement. Replacement permits may be issued by the Regional Director. An application for a replacement permit shall not be considered a new application.
- (j) Transfer. Permits issued under this Part are not transferable or assignable. A permit shall be valid only for the fishing vessel for which it is issued.
- (k) Display. Any permit issued under this Part must be carried on board the fishing vessel at all times. The permit shall be presented for inspection upon the request of any Authorized Officer.
- (l) Revocation. Subpart D of Part 621 of this chapter (Civil Procedures) governs the imposition of sanctions against a permit issued under this part. As specified in that Subpart D, a permit may be revoked, modified, or suspended if the permitted fishing vessel is used in the commission of an offense prohibited by the Act or these regulations, or if a civil penalty or criminal fine imposed under the Act is not paid.

§655.5 Recordkeeping and reporting.

(a) Fishing vessel records.

- (1) The operator of any fishing vessel issued a permit to fish for squid under this Part shall:
- (i) Maintain on board the vessel an accurate and complete fishing

logbook on forms supplied by the Regional Director, according to the requirements of §655.5(a)(2);

(ii) Make the fishing logbook available for inspection by any Authorized Officer, or any employee of the National Marine Fisheries Service designated by the Regional Director to make such inspections, at any time during or after a fishing trip;

(iii) Keep each fishing logbook for one year after the date of the last entry in the logbook; and

(iv) Submit fishing logbook reports, as specified in §655.5(a)(2).

(2) The owner or operator of any fishing vessel conducting any fishing operation subject to this Part shall submit a complete fishing logbook report to the Regional Director within 48 hours after the end of any fishing week or trip, whichever is longer. Fishing logbooks shall contain information on a daily basis for the entirety of any trip during which squid or any other regulated species are caught, and shall contain information for all fish which are caught. Information on squid catches must be provided separately for each genus of squid (Illex and Loligo).

(3) The Assistant Administrator may revoke, modify, or suspend the permit of a fishing vessel whose owner or operator falsifies or fails to submit the records and reports prescribed by this section, in accordance with the provisions of 50 CFR Part 621.

(b) Fish dealer or processor reports. Any person who receives Atlantic squid for a commercial purpose from a fishing vessel subject to this Part shall:

(1) File a weekly report (Sunday through Saturday) with the Regional Director on forms supplied by him within 48 hours of the end of any week in which squid is received. This report shall include information on all transfers, purchases, or receipts of all squid (listing Illex and Loligo separately) and other fish made during that week; and

(2) Permit an Authorized Officer, or any employee of the National Marine Fisheries Service designated by the Regional Director to make inspections, to inspect at the principal place of business any records or books relating to any transfers, purchases, or receipts of squid.

655.6 Vessel identification.

(a) Official Number. Each fishing vessel subject to this Part and over 25 feet in length shall display its Official Number on the port and starboard sides of the deckhouse or hull and on an appropriate weather deck so as to be clearly visible from enforcement vessels and aircraft. The Official Number is the documentation number issued by the Coast Guard for documented vessels or the registration number issued by a State or the Coast Guard for undocumented vessels.

(b) Numerals.

(1) The Official Number shall be at least 18 inches in height for fishing vessels over 65 feet in length and at least 10 inches in height for all other vessels over 25 feet in length.

(2) The Official Number must be in block Arabic numerals in contrasting color.

(3) The Official Number shall be permanently affixed to or painted on the vessel. However, vessels carrying fishing parties on a per capita basis or by charter may use non-permanent markings to display the Official Number whenever the vessel is fishing for squid.

(c) Vessel length. The length of a vessel, for purposes of this section, is that length set forth in Coast Guard or State records.

(d) Duties of operator. The operator of each fishing vessel shall:

(1) Keep the Official Number clearly legible and in good repair, and

(2) Ensure that no part of the fishing vessel, its rigging or its fishing gear obstructs the view of the Official Number from any enforcement vessel or aircraft.

§655.7 Prohibitions.

It is unlawful for any person to:

(a) Use any vessel for the taking, catching, harvesting, or landing of any Atlantic squid (except for personal use), unless the vessel has a valid permit issued pursuant to this Part on board the vessel;

(b) Fail to report to the Regional Director within 15 days any change in the information contained in the permit application for a vessel;

(c) Falsify or fail to make, keep, maintain, or submit any logbook, or other record or report required by this Part;

(d) Make any false statement, oral or written, to an Authorized Officer, concerning the taking, catching, landing, purchase, sale, or transfer of any Atlantic squid;

(e) Fail to affix and maintain markings as required by §655.6;

(f) Possess, have custody or control of, ship, transport, offer for sale, sell, purchase, import, export, or land any Atlantic squid taken in violation of the Act, this Part, or any other regulation promulgated under the Act;

(g) Fish for, take, catch, or harvest any Atlantic squid from the FCZ after the fishery has been closed pursuant to §655.23;

(h) Transfer directly or indirectly, or attempt to so transfer, any United States harvested squid to any foreign fishing vessel, while such vessel is within the FCZ, unless the foreign fishing vessel has been issued a permit, under section 204 of the Act, which authorizes the receipt by such vessel of United States harvested squid;

(i) Refuse to permit an Authorized Officer, or any employee of the National Marine Fisheries Service designated by the Regional Director to make such inspections, to inspect any logbooks or records relating to the taking, catching, harvesting, landing, purchase, or sale of Atlantic squid;

(j) Refuse to permit an Authorized Officer to board a fishing vessel subject to such person's control for purposes of conducting any search or inspection in connection with the enforcement of this Act, this part, or any other regulation promulgated under the Act;

(k) Fail to comply immediately with enforcement and boarding procedures specified in §655.8;

(l) Forcibly assault, resist, oppose, impede, intimidate, threaten, or interfere with any Authorized Officer in the conduct of any search or inspection under the Act;

(m) Resist a lawful arrest for any act prohibited by this Part;

(n) Interfere with, delay, or prevent by any means the apprehension or arrest of another person knowing that such other person has committed any act prohibited by this Part;

(o) Interfere with, obstruct, delay, or prevent by any means the lawful investigation or search in the process of enforcing this Part;

(p) Violate any other provision of this Part, the Act, or any regulation promulgated pursuant thereto.

§655.8 Enforcement.

(a) General. The operator of any fishing vessel subject to this Part shall immediately comply with instructions issued by an Authorized Officer to facilitate safe boarding and inspection of the vessel, its gear, equipment, logbook, and catch for the purposes of enforcing the Act and this Part.

(b) Signals. Upon being approached by a Coast Guard vessel or aircraft, or other vessel or aircraft authorized to enforce provisions of the Act, the operator of the fishing vessel shall be alert for communications conveying enforcement instructions. VHF-FM radiotelephone is the normal method of communicating between vessels. Should radiotelephone communication fail, however, other methods of communication including signals may be employed. The following signals extracted from the International Code of Signals are among those which may be used and are included here for the safety and information of fishing vessel operators:

(1) "L" meaning "You should stop your vessel instantly."

(2) "SQ3" meaning "You should stop or heave to; I am going to board you." and

(3) "AA AA AA etc.," which is the call to an unknown station, to which the signaled vessel must respond by illuminating the vessel's Official Numbers required by §655.6.

(c) Boarding. A vessel signaled to stop or heave to for boarding shall:

(1) Stop immediately and lay to or maneuver in such a way as to permit the Authorized Officer and his/her party to come aboard;

(2) Provide a ladder for the Authorized Officer and his/her party;

(3) When necessary to facilitate the boarding, provide a man rope, safety line and illumination for the ladder; and

(4) Take such other actions as are necessary to ensure the safety of the Authorized Officer and his/her party to facilitate the boarding.

§655.9 Penalties.

Any person or fishing vessel found to be in violation of this Part will be subject to the civil criminal penalty provisions and forfeiture provisions prescribed in the Act, and to Parts 620 (Citations) and 621 (Civil Procedures) of this chapter.

Subpart B - Management Measures

§655.20 Fishing year.

The fishing year for Atlantic squid is the 12-month period beginning on April 1 and ending on March 31 of the following year.

§655.21 Allowable levels of harvest.

(a) Catch Quotas. The allowed levels of harvest on fishing year basis for Atlantic squid are 30,000 mt of Illex illecebrosus and 44,000 mt of Loligo pealei. These levels of harvest are divided into annual catch quotas for vessels of the United States and vessels of foreign nations as follows:

(1) The initial annual catch quotas for vessels of the United States are 5,000 mt of Illex illecebrosus and 7,000 mt of Loligo pealei.

(2) The initial annual catch quotas for vessels of foreign nations are 12,000 mt of Illex illecebrosus and 18,000 mt. of Loligo pealei.

(3) A Reserve of 13,000 mt of Illex illecebrosus and 19,000 mt of Loligo pealei is established.

(b) Territorial waters. These regulations do not limit harvests of Atlantic squid in the territorial waters of any State. Harvests from State waters, however, shall be subtracted from the annual domestic quotas set forth in paragraph (a)(1).

§655.22 Allocation.

(a) General. This section establishes a procedure which will be followed to make timely allocations of the Reserve during the fishing year. Any allocation shall be consistent with the objectives of the Fishery Management Plan for the Squid Fishery of the Northwest Atlantic Ocean and in accordance with the criteria and procedures set forth in paragraphs (b) and (c) of this section.

(b) Criteria.

Allocations from Reserve. The National Marine Fisheries Service shall review reported domestic harvest (including off-loadings at sea) for Loligo and Illex on a monthly basis. Domestic harvest shall be determined based upon vessel and processor reports required by this Part and additional statistical port sampling data collected by NMFS.

The Assistant Administrator shall project the total amount of Atlantic squid that will be harvested by United States fishermen during the entire fishing year. In making these projections the Assistant Administrator shall consider not only the actual reported domestic harvest, but also the ability and intent of domestic harvestors and processors to harvest and process squid for domestic consumption and export for the remainder of the fishing year. It is the Council's intent that no reallocation shall be made from Reserve to TALFF if domestic harvestors and processors are able and willing to sell squid for export at a reasonable price and acceptable quality but foreign nations are unwilling to purchase such squid in anticipation of receiving additional allocations from the Reserve.

If joint ventures are proposed, the Assistant Administrator shall determine if approval of such proposals will have a negative impact on the US squid processing industry. If the joint ventures will not have a negative impact on the US squid processing industry, the Assistant Administrator shall allocate from the Reserve to DAH the amount of the affected squid species as required by such joint ventures.

If the estimated amount of Atlantic squid to be harvested by United States fishermen exceeds Domestic Annual Harvest for either or both species, the Assistant Administrator shall allocate a sufficient quantity of the affected species to Domestic Annual Harvest. Such allocation shall ensure that the United States fishery for that species of squid will not be subject to closure

except in the event that domestic landings of that species of squid threaten to exceed Domestic Annual Harvest plus the Reserve for that species of squid.

At the end of the first six months of the fishing year, if the estimated total amount of Atlantic squid to be harvested by United States fishermen during the fishing year is less than 80 per cent of the total Domestic Annual Harvest plus the Reserve (i.e., 14,400 mt for Illex and 20,800 mt for Loligo), for either or both species of squid then the Assistant Administrator shall consider an allocation of part of the Reserve for Loligo and/or Illex to TALFF.

(c) Procedure.

(1) Initial determination. If the Assistant Administrator determines that a allocation may be made for either species of Atlantic squid, he shall publish in the Federal Register a notice of intent to allocate a specified amount of unharvested portion of the Reserve to the annual quotas established for United States vessels or for foreign nations specified in §655.21. Notice of an intent to allocate shall also be sent to holders of permits issued under this Part, and to agents of foreign fishing vessels permitted to fish for squid under 50 CFR Part 611, on or before the date of publication of the notice in the Federal Register.

(2) Public comment. The public shall be given no less than 15 days from the date of publication of the notice of intent to allocate to submit written comments concerning the amount of Atlantic squid to be allocated. Comments shall be sent to the Regional Director.

(3) Consultation. During the 15-day public comment period, the Assistant Administrator or a designee shall consult with the appropriate committee of the Mid-Atlantic Fishery Management Council to determine whether the proposed allocation of Atlantic squid is consistent with the objectives contained in the Fishery Management Plan for the Squid Fishery of the Northwest Atlantic Ocean.

(4) Final determination. The Assistant Administrator shall make a final determination of the amount of the species of Atlantic squid to be allocated after taking into account:

- (i) The intent and capability of U.S. fishing vessels to harvest the species of Atlantic squid during the remainder of the fishing year;
- (ii) The consistency of any allocation with the objectives contained in the Fishery Management Plan for the Squid Fishery of the Northwest Atlantic Ocean;
- (iii) The current harvest of the species of Atlantic squid by foreign nations as allowed pursuant to 50 CFR Part 611;
- (iv) The most current information available concerning the biological status of the species of Atlantic squid; and
- (v) Any other information determined by the Assistant Administrator to be relevant.

(5) Publication of allocations. The Assistant Administrator shall publish regulations in the Federal Register to accomplish any allocations of any species of Atlantic squid pursuant to paragraph (c) (4) of this section approximately 15 days prior to the effective date of the allocation. Comments received during the comment period, all relevant information used by the Assistant Administrator in making a final determination on allocation. Comments received during the comment period, all relevant information used by the Assistant Administrator in making a final determination on allocation, and the most recent catch statistics for domestic and foreign harvest of the species of Atlantic squid to be allocated shall be summarized in the Federal

Register.

(6) Effective dates.

(i) Illex. Any allocation of Illex shall remain in effect to the end of the fishing year on March 31.

(ii) Loligo. Any allocation of Loligo shall remain in effect to the end of the fishing year on March 31.

§655.23 Closure of fishery.

(a) General. The Regional Director shall periodically monitor catches and landings of Illex and Loligo and shall project at least once every quarter the date when the annual quotas will be harvested. The fishery for either species of squid shall be closed when the annual quota, as increased by any allocations from Reserve, less the anticipated incidental catch during a closure under paragraph (d) of this section, for that species is reached.

(b) Recommendation of closure. When 90 percent of either of the annual domestic quotas specified in §655.21 has been harvested, the Regional Director may make a recommendation to the Assistant Administrator that the fishery for that species be closed, if projections based on vessel and dealer/processor logbook data indicate that the annual quota for that species will be reached or exceeded before March 31.

(c) Notice of closure. If the Assistant Administrator determines that a closure of the squid fishery for the relevant species is necessary to prevent the annual species quota from being exceeded the Assistant Administrator shall:

(1) Notify in advance the Executive Directors of the Mid-Atlantic, New England and South Atlantic Fishery Management Councils of the closure;

(2) Mail notifications to all persons holding permits issued under §655.4 of the closure at least 72 hours prior to the effective date of the closure; and

(3) Publish a notice of closure in the Federal Register.

(d) Incidental catch. During a period of closure, fishing vessels may catch, take, or harvest the relevant species of squid incidental to fishing for other species of fish, provided that such species of squid constitutes no more than 10 percent by weight of the total catch of all other fish on board the vessel at the end of any fishing trip.

§655.24 Size restrictions. (Reserved)

§655.25 Gear restrictions. (Reserved)