FRAMEWORK ADJUSTMENT 19

to the

NORTHEAST MULTISPECIES FISHERY MANAGEMENT PLAN

**To adjust the Mid-Coast Area closure in the Gulf of Maine**

Prepared by

New England Fishery Management Council

in consultation with

National Marine Fisheries Service

Mid-Atlantic Fishery Management Council

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# FRAMEWORK ADJUSTMENT #19
# NORTHEAST MULTISPECIES FMP

**To adjust the Mid-Coast Area closure in the Gulf of Maine**

## 1.0 INTRODUCTION

The New England Fishery Management Council submitted Amendment 7 to the Northeast Multispecies Fishery Management Plan on February 2, 1996 and the rules became effective on July 1. The purpose of Amendment 7 was to rebuild depleted stocks of cod, haddock and yellowtail flounder by reducing fishing effort through a number of management measures, primarily controls on days-at-sea (DAS) and area closures. During the 18-month development period of the amendment, the Council considered a number of alternatives for additional area closures but the proposals proved to be complicated and controversial, and threatened to delay implementation of the other important components of the plan. The critical condition of some groundfish stocks during the plan development period caused the Council to adopt "default" area closures for the Gulf of Maine based on existing harbor porpoise protection closures with the qualification that those closures would be reviewed and modified as soon as practicable through the framework adjustment procedure. This proposed action would change the time and area of the Mid-Coast closure and implement the change before the default closure takes effect on November 1, 1996.

The framework process requires the Council to consider the adjustment over the span of at least two Council meetings, during which time the public is invited to comment on the proposal and associated analyses. The Council formally initiated this framework adjustment at its meeting on July 17, 1996, although numerous public discussions had taken place on this matter before that time. The final meeting took place on September 9. The Council recommends that the Secretary of Commerce publish the adjustment as a final rule on the basis of justification provided in Section 2.0.

## 2.0 PURPOSE AND NEED

### 2.1 Need for adjustment

The purpose of the proposed action is to reduce the overall economic impact of the area closure while still achieving the conservation objectives of the rebuilding plan implemented by Amendment 7, and to address concerns about the distribution of economic impacts of the existing closures which may disproportionally affect small inshore vessels. By moving the timing of the closure to a period when the value of fish is lower, the same amount of fish could be "saved" for a lower cost. Furthermore, by moving the closure to a time when fish are aggregated for spawning and catch rates are higher, the same amount of landings could be deferred in a shorter period of time. For the purpose of this action, the Council used deferred landings of cod and revenues from all species as the basis for evaluating alternatives.

The proposed action also addresses the equity issues raised by small, inshore vessel operators who felt that the existing closure unfairly impacts them because the timing and geographical range of the closure limits their alternatives. These vessels have limited steaming range and are more constrained by weather than larger vessels. Therefore, the ability of these vessels to seek alternative grounds outside of the closure is significantly less than other vessels. Their difficulties are compounded by the fact that by January, when the present closure re-opens, the weather prevents these vessels from resuming normal fishing operations and has the effect of extending the closure for a longer period of time than intended.

Comments received by the Council at the final meeting on this action indicated the concern of some fishermen that the proposed action may still unfairly impact the small-boat fleet fishing out of extreme southwestern Maine, New Hampshire and Newburyport, MA. These vessels, which traditionally fish in the Jeffreys Ledge area within block 132 (Map 1), would all be forced into the smaller and less-productive area of blocks 133 and 140 since they cannot travel long distances to other fishing grounds. While fishermen from this area have expressed concern in the past about increased effort inshore during the Spring months, they say that the proposed action would exacerbate the problem and increase the frequency of gear conflicts as the density of gillnet gear and trawl activity increased.

On the basis of those comments, the Council modified the proposed action to include a default measure for 1998 that would close the entire Mid-Coast Area from May 10 through May 30 (Alternative 6, Table 1). This is a risk-averse approach that will implement a more conservative measure unless the Council determines that the measure for 1997 is efficacious and does not have the effort-displacement problems anticipated by some fishermen. If the Council makes such a determination, it will have to make an adjustment through the framework process before May, 1998.

The proposed action (to close blocks 132 and 139) had received extensive discussion at the most recent Groundfish Committee meeting and was recommended by the committee and supported by a number of vessel groups, including those from Gloucester. The Council felt that it was imperative to implement the proposed action for this year to prevent the scheduled closure of the Mid-Coast Area in November, and that there would be an opportunity to monitor the action and make modifications through a future adjustment if the concerns about effort displacement were realized.

Since gillnet vessels are still subject to a closure in the Mid-Coast Area to protect harbor porpoise during November and December, the Council also proposes to allow fishing with sink gillnets conditional on their use of acoustic deterrent devices ("pingers") in accordance with the protocol of the 1995 and 1995 NMFS-authorized experimental fishery. Information on the effectiveness of pinger use in mitigating the bycatch of harbor porpoise in the Gulf of Maine sink gillnet fishery was collected during a 1994 experiment conducted by the New England Aquarium, Woods Hole Oceanographic Institution and the New Hampshire Commercial Fishermen's Association. A 1995 experimental fishery was conducted to evaluate the use of pingers (with the same sound characteristics as the devices used in the experiment) by fishermen operating in a commercial fishing environment, in contrast to the limitations of fishing under scientific protocols required in the 1994 experiment.

Both efforts indicated that in November and December, the period in which the work was conducted, the porpoise bycatch in the Mid-Coast Area was reduced to insignificant levels. In the case of the experiment, protocols dictated the design of the alarms, deployment of alarms, number of strings fished and whether the alarms were active or control. Investigators concluded that in this case, acoustic alarms reduced the incidental catch of porpoise in sink gillnets. The number of porpoises taken in strings with active alarms was approximately an order of magnitude less than the number killed in control strings. Caveats attached to their work included a lack of knowledge about how and why the alarms worked and whether porpoises will eventually habituate to the presence of alarms. Further study was recommended.

Pingers used in the November-December, 1995 experimental fishery had to meet the same specifications as the devices used in the 1994 experiment (see Appendix II). Observer coverage on the sector of the fleet that participated was 48 percent. No porpoises were taken on observed gillnet trips nor were any takes reported on unobserved trips. Analysis of the results indicated a statistically negative possibility of catching zero harbor porpoise on observed trips by chance given the level of effort and the data from previous years.

### 2.2 Publication as a final rule

As a result of declining stock abundance and increased regulation under this and other fishery management plans, the fishing industry in the Gulf of Maine is experiencing difficult economic times. Amendment 7 not only eliminated exemptions to the DAS reduction programs for small boats and gillnetters, it also imposed area closures which cover areas and/or times when these vessels are most dependant on access to the inshore groundfish resource before the winter weather limits fishing opportunities. Since the purpose of the proposed action is to alleviate economic impacts of the default closure, particularly impacts on small vessels, the Council seeks to forestall the closure of the Mid-Coast Area on November 1 by publishing this adjustment as a final rule. Furthermore, the Council proposes to act on the favorable results of the experimental gillnet fishery showing the efficacy of the acoustic deterrent devices ("pingers") in reducing the harbor porpoise bycatch in this time and area.

The Council urges NMFS to consider that these adjustments will not compromise the conservation objectives of the rebuilding program while reducing the economic impacts, particularly on small vessels. The Council has considered the following factors as specified in 50 CFR 648.90 (b) and recommends that NMFS publish the proposed adjustment as a final rule.

#### 2.2.1 Timing of the rule

The timing of the rule does not depend on the availability of time-critical data, and the Council did not consider data availability in its decision to recommend publishing the adjusted measure as a final rule.

The timing of the rule is relevant, however, to the timing of the existing default closure which is scheduled to take effect on November 1. Given the opportunity for public comment

indicated in Section 2.2.2, publication of the adjustment as a proposed rule will likely not significantly add to the information available for evaluation of the measure, but it will extend the rulemaking procedure past the date when the closure will take effect. Therefore, vessels will be placed under the additional burden of being required to observe the closure beginning in November, until rescinded, as well as that implemented by this action for May.

### 2.2.2 Opportunity for public comment

The Council and its Groundfish Oversight Committee held publicly announced discussions on the development of alternative area closures as early as February, 1996. Groundfish Committee meeting notices are mailed to approximately 900 interested parties. Council meeting notices are mailed to approximately 1,900 interested parties in addition to being published in the *Federal Register*. For this action, the Council also enlisted the services of Christopher Finlayson, Maine Department of Marine Resources, who held public meetings in Portland, ME on 6/28, Portsmouth, NH on 6/27, and Gloucester, MA on 7/2, with a number of fishermen, industry representatives and members of the Industry Advisory Committee whom he had contacted directly.

The chronological schedule of meetings in which the area closure alternatives were specifically included on the publicized notice and agenda is as follows:

| DATE | MEETING | LOCATION | PURPOSE/ACTION |
|---|---|---|---|
| 2/27-28 | Council | Danvers, MA | initial discussion |
| 4/11 | Groundfish OS | Peabody, MA | define subcommittee structure and set guidelines |
| 4/17-18 | Council | Danvers, MA | general discussion |
| 6/5-6 | Council | Danvers, MA | initiate framework (scheduled but no action taken), general discussion |
| 6/11 | Groundfish OS | Portland, ME | update on development of alternatives |
| 7/9 | Groundfish OS | Peabody, MA | review Chris Finlayson report; recommend a 1-day Council meeting to complete the framework process before Nov. Mid-Coast closure takes effect |
| 7/17-18 | Council | Peabody, MA | framework adjustment initiated |
| 8/5 | Subcommittee | Saugus, MA | outline specific proposals for analysis |
| 8/13 | Groundfish OS | Peabody, MA | review analysis, identify additional alternatives for analysis |
| 8/21-22 | Council | Danvers, MA | update on development of alternatives, schedule 1-day meeting |
| 8/27 | Groundfish OS | Woods Hole, MA | review analysis, recommend proposal |
| 9/9 | Council | Peabody, MA | final action on framework adjustment |

### 2.2.3 Need for immediate resource protection

The Council is not considering the need for immediate resource protection as a justification for the publication of this measure as a final rule since it is proposing this action to replace an existing measure with equivalent conservation benefits.

### 2.2.4 Continuing evaluation

Amendment 7 established a process for a formal review of the rebuilding program on an annual basis and a requirement to make adjustments to specific measures as needed based on the advice of the Multispecies Monitoring Committee. Additionally, the Council, NMFS and the Multispecies Monitoring Committee will continually evaluate the effectiveness of the proposed closure as information becomes available, whether such information comes from scientific sources, enforcement agencies, industry or other sources. The framework procedure allows for timely adjustments to the area closures if a problem is identified or modification is otherwise needed.

## 3.0 PROPOSED ACTION AND ALTERNATIVES

Over the past several months, the Council considered numerous proposals and alternative area closures. In evaluating alternatives, the Council considered biological and economic impacts relative to the existing measures, as well as enforcement and administrative concerns. The following section describes the proposed action and the principal alternatives that were rejected.

The NMFS weighout data on which the analysis of alternatives is based is primarily collected at a scale of 30-minute squares (equal to one quarter of a degree square) which are approximately 30 by 27 nautical miles on a side. The existing (default) closures are based on areas defined for harbor porpoise protection and the boundaries do not coincide with the boundaries of units on which the data is organized (Map 1). Therefore, to avoid having to arbitrarily assign partially covered 30-minute squares either to be included or excluded from an area closure for the purpose of analysis, the Council has focused on alternatives that are described in terms of 30-minute squares. This approach unifies the management measure with the data on which it is evaluated and eliminates the need to assume whether catches recorded in the database come from inside or outside a proposed closure boundary. This results in relatively large, regularly shaped closures that are more easily enforced.

On Map 1, showing the region divided into 30-minute squares and the boundaries of the existing area closures, shading represents the squares that were assigned to each of the area closures for analysis purposes. Map 2 shows the 30-minute squares with the reference numbers used in developing alternatives.

### 3.1 Proposed action

The Council proposes to cancel the November-December groundfish closure of the Mid-Coast Area to vessels capable of catching groundfish and replace it with a closure in 1997 of the area defined by blocks 132 and 139 (Map 3) for the period May 1 through May 31. The area

is bounded by the following lines of latitude and longitude: 43°30'N, 70°00'W, 42°30'N, and 70°30'W. Future action by the Council notwithstanding, beginning in 1998 and thereafter, the entire Mid-Coast Area will be closed from May 10 through May 30.

Since vessels fishing with sink gillnets are still subject to a closure in this time and area to protect harbor porpoise, the Council also proposes to allow fishing with sink gillnets in the area during November and December provided the nets are equipped with acoustic deterrent devices ("pingers") as prescribed in the 1995 and 1996 NMFS-authorized experimental fisheries. The requirements of that experimental fishery program specified that the pingers, when immersed in water, must broadcast a 10 Khz sound at 132 Db re 1 micropascal at 1 meter. The pingers must be deployed such that a working pinger is located at the end of each string of nets and at the bridle of every net within a string of nets. Pingers must be maintained such that they remain operational and functioning during the course of the experiment. Vessels are also subject to provisions of the Marine Mammal Protection Act regarding vessel registration, possession of an Authorization Certificate and reporting all incidental mortality and injury of marine mammals.

### 3.2 Alternatives to the proposed action

The following alternatives were also considered by the Council to replace the November-December closure of the Mid-Coast Area. The final meeting of the Groundfish Committee took place at the Northeast Fisheries Science Center where individual alternatives and modifications could be rapidly analyzed while the it was deliberating. What was evident throughout this process was the influence of Jeffreys Ledge (covered by blocks 132 and 139) on the total catches of cod during May. None of the alternatives presented below achieved the same savings in cod landings as the proposed action at a lower cost (determined by lost revenues).

#### 3.2.1 Rolling closures

The Groundfish Committee considered a number of sequential closures of three sub-areas of the Mid-Coast Area. The committee's intent was to address the concerns of fishermen that the large area covered by a single closure in March or April would limit their ability fish in other areas while concurrently maintaining a closure over the largest aggregation of cod as it migrated up the coast. This idea was based on observations of the historical migration of cod during the Spring. Table 1 shows six alternatives considered by the committee (Original, Modified Original, Alternatives 1-4). All but Alternative 3 failed to achieve the savings in cod necessary to replace the default closure. Alternative 3 had approximately the same cod savings (1,322,058 compared to 1,289,985) but the total revenues saved was less than that realized by other alternatives. Furthermore, the rolling closures were more complicated from the administrative and enforcement perspective.

#### 3.2.2 Blocks 138, 139, 140 and 147 for May 1 through June 9

The committee proposed closing blocks 138, 139, 140 and 147 for the shortest period of time possible starting May 1 (Table 1, Alternative 5). The duration of the closure was determined by the daily accumulation of cod landings until the total exceeded the landings from the

default closure. This alternative covered a larger area and resulted in greater lost revenues in comparison to the proposed action and was, therefore, rejected by the committee.

### 3.2.3 Mid-coast area closure May 10-30

The committee also considered closing the Mid-Coast Area for the shortest period of time possible during May (Table 1, Alternative 6). For this analysis, the Mid-Coast Area comprised blocks 132, 133, 138, 139, 140, 145, 146, 147 and 152. The analysis indicated that the 20-day period from May 10 to May 30 would achieve savings in cod landings equivalent to the default closure. The committee did not recommend this alternative because most of the cod savings under this alternative come from blocks 132 and 139, and the larger area results in higher lost revenues compared to the proposed action. The full Council, however, upon hearing comments about potential effort displacement under the proposed action, decided to adopt this measure for the second year of the plan (1998) because it may alleviate potential effort displacement and gear-conflict issues in blocks 133 and 140 resulting from the closure of blocks 132 and 139 for a full month.

### 3.2.4 Night closure to mobile gear in blocks 132 and 140

When the Council heard comments about potential effort displacement and gear conflict in blocks 133 and 140, it considered a proposal for a night fishing closure for mobile gear in this area. The proponents of this idea suggested that offshore vessels, if prohibited from fishing at night, would seek other areas to fish further offshore, thereby alleviating the gear conflict and resource problems that might arise if those vessels fished in the reduced open areas inshore. Several inshore trawl fishermen opposed the proposal, however, because they have traditionally fished in the area at night and felt it would be unfair to them. The Council did not adopt this proposal primarily because the potential impacts have not been analyzed. Furthermore, the Council did not adopt this proposal at this time because the measure has not received the full level of public notice and comment to enable it to include the measure in this action without delaying implementation.

### 3.2.5 No Action

The no-action alternative would close the Mid-Coast Area for November and December. This alternative is not acceptable to the committee for the reasons outlined in Section 2.0, Purpose and Need. For analysis purposes, the Mid-Coast Area comprises blocks 132, 133, 138, 139, 140, 145, 146, 147 and 152.

## 4.0 ANALYSIS OF IMPACTS

### 4.1 Bioeconomic impacts

The analysis of impacts is based on comparing landings, revenues and the producer surplus for the most recent year for which data is available for the existing closure with those from the proposed closure. Since cod is the principal stock under the Amendment 7 rebuilding plan that is caught in this area, cod landings are the basis on which the Council determined conservation equivalency. Haddock and yellowtail flounder landings from this area are

comparatively small (Table 1). Revenue comparisons are based on all species caught by the affected gears.

The analysis does not account for displacement of effort to areas outside of the closures. Existing effort-displacement models assume that vessels seek out the next highest revenue producing areas with some limitation on how much new effort can be applied to an area unit and with some assumption about other constraints on effort shifts. They do not accurately consider the full range of factors such as weather, steaming range, resource availability, regulatory constraints and personal preferences that affect the decisions of individual operators. The complexity of these models and their questionable utility in analyzing small-scale seasonal closures precluded their use in this analysis. The current analysis is based simply on comparing 1993 landings and revenues attributable to the proposed area and time with those attributed to the existing area for 1993 by different gear categories.

The effect on gear sectors (hook, gillnet and otter trawl) is calculated based on total revenues for each group. Gillnet vessels are also subject to harbor porpoise protection measures and, therefore, determining the impact on those vessels is contingent on their being allowed to re-enter the Mid-Coast Area in November and December. The discussion of impacts will indicate best- and worst-case scenarios for this contingency. The best-case scenario would result if gillnet vessels were allowed to re-enter for both months, while the worst case scenario would result if harbor porpoise protection measures prevented them from fishing in the area regardless of the groundfish opening.

The first column on Table 1 shows the 1993 landings in pounds by species for the current Mid-Coast closure ("default"). Also shown are the 1993 total revenues and landings for all species combined for three general gear categories: gillnet, hook and trawl. The second column shows the same information for the proposed 1997 closure. Cod landings are nearly identical while the landings of other species varies significantly. The reduction in lost revenues is attributable to reductions in deferred landings, most notably pollock (1,240,915 lbs) and monkfish (802,891 lbs), and to the reduced price of cod in May compared to November and December (see Table 2).

The last column on Table 1 shows the effect of the closure of the entire Mid-Coast Area for May 10 through May 30 which is proposed to take effect in 1998. While this action has essentially the same impact on cod landings as the May closure of blocks 132 and 139, it may result in greater protection of monkfish, witch flounder, American plaice and white hake. This closure may also reduce costs associated with potential gear conflicts in blocks 133 and 140 but these cannot be quantified.

The reductions in lost revenues (that is, the savings) for the different sectors for 1997 (under the proposed closure of blocks 132 and 139) is $1.25 million (80%) for gillnet vessels, $51,751 (84%) for hook vessels, and $1.41 million (49%) for trawl vessels. Estimates for the gillnet sector are under the best-case scenario. If gillnetters are prevented from fishing in the Mid-Coast Area during November and December in order to protect harbor porpoise (worst-case scenario) the impacts would be a decrease of $314,699 million or 20% of gillnet revenues, based on gross lost revenues not accounting for revenues from effort displaced to other areas or shifts to other fisheries.

The proposed action includes allowing gillnet vessels in the area with pingers during November and December which, due to the costs associated with pinger use will reduce the savings indicated under the best-case scenario. The analysis of the cost and benefits of pingers done for Framework 15 (allowing pinger use in this area from September 15 to October 31) indicated that the impact is highly dependant on the proportion of vessels that choose to fish in the area with pingers rather than fishing elsewhere or not at all. According to the information given in Framework 15, 52 gillnet vessels fished in the closed areas between the dates September 15 and October 31, 1993. There is no information on how many gillnetters fish in the same areas from November 1 to December 31. During the 1995 experimental fishery conducted by NMFS, however, about 15 vessels used pingers during the months of November and December, which constituted about 25 percent of the gillnet vessels at that time. This supports the assumption that the number of gillnet vessels operating in these areas during the months of November and December will be around 50 to 60 vessels.

The average cost of outfitting a vessel with pingers is estimated to be about $4,000. If all the gillnet vessels fishing in these areas choose to fish by equipping their nets with pingers, the total cost of pingers for the gillnet fleet will amount to $200,000 assuming that about 50 vessels fish in those areas. This cost is not totally attributable to the proposed action, however, given that some amortization is realized through the already approved pinger use under Framework 15. Since the loss of gross stock from not fishing --$1.56 million (Table 1, column 1)-- during the closures exceeds the cost of pingers, it is reasonable to assume that some vessels will choose to fish their nets with pingers.

The revenue impact of the proposed 1998 closure of the Mid-Coast Area for the May 10-May 30 period would be slightly higher than the impact of the 1997 closure of blocks 132 and 139 based on 1993 revenues. Approximately $2.7 million in revenues would be recovered under the closure of blocks 132 and 139 in 1997 in comparison to the existing closure (Table 1- $4.5 million minus $1.8 million). That compares to $2.5 million that would be recovered under the default for 1998. As indicated in Table 1, most of the increase in lost revenues is borne by the trawl sector in the second-year action.

Table 3 summarizes the economic impacts of the proposed (May closure) and no action alternatives. Column two incorporates (non-wage) variable cost savings associated with the closures to estimate the change in the producer surplus. These costs include trip costs such as fuel, oil, ice, water and supplies as a proportion of gross revenues, i.e., 23 percent for the gillnetters, 30 percent for the hook fishery and 25 percent of the gross stock for the trawlers based on the information given in Amendment 7 (See E.7.2.2 of Amendment 7 document, pages 215 to 218). Table 3 shows that the variable cost savings amount to $1 million if the November and December closures take effect and decline to $0.4 million if closures are moved to the month of May as proposed by this adjustment. This is an expected result since closures cover two months in the case of no action and one month or less in case of the proposed action. Variable cost savings are combined with the change in gross revenues to derive the change in the producer surplus in column three. The reduction in producer surplus is $3.4 million for no action, $1.5 million for the proposed closures in 1997 and $1.7 million for the proposed closure in 1998.

The net benefits of the proposed action is estimated in this analysis by the changes in

producer surplus with and without the proposed changes in the timing of the closures. Table 4 shows that net benefits (i.e. increase in the producer surplus) is $1.8 million for the proposed action for 1997 if the cost of using pingers are assumed to be $200,000 for the gillnet fleet. This should be compared with the decline in net benefits to $0.8 million if gillnetters were not allowed to fish in the in the Mid-Coast area during the months of November and December. Net benefits of the proposed closure for 1998 is $1.6 million. The total benefits of the proposed Framework 19 amount to $3.5 million (in terms of 1993 dollars) as estimated by the total discounted value of net benefits for 1997 and 1998. This is an underestimate of the net benefits since the changes in the consumer surplus and the impacts of effort displacement are not taken into account in this analysis due to the time and data constraints.

Although cod landings do not change significantly by the proposed action, the landings of other species such as monkfish, white hake, silver hake and pollock increase when the closures are moved to the month of May from the months of November and December. This may lower the prices of these species and therefore, may increase the consumer surplus as compared to no action. Similarly, it may be possible to recover a greater proportion of the revenue lost in the closed area by fishing in other areas during the month of May than during the months of November and December during which weather may preclude small vessels fishing in relatively distant areas. Under those circumstances, the net benefits of the proposed action will exceed the estimated $3.5 million for the years 1997 and 1998.

### 4.2 Impacts on harbor porpoise

Framework Adjustment 15 to the Northeast Multispecies Plan, effective in September, 1996 closes the Mid-coast Area for the period September 15 through December 31 to gillnet fishing. The measure is part of the Council's ongoing program to reduce the bycatch of Gulf of Maine harbor porpoise in the sink gillnet fishery. Gillnet vessels are still subject to this restriction despite the proposed opening of the November-December closure to fishing for groundfish.

In conjunction with Framework 15, the NMFS Regional Director has authorized an experimental fishery from September 15 through October 31 to evaluate the use of acoustic deterrents during this time period. Information on "pingers" in the Mid-coast Area was collected previously in a scientific experiment in 1994 and an experimental fishery in 1995. Both were limited to the months of November and December.

Framework Adjustment 19 proposes to allow gillnet vessels to fish in the area in November and December if pingers are deployed according to the protocols required by the NMFS in earlier experimental fisheries conducted in this region. Given the positive results of pinger use during this period (see Appendix II) coupled with the opening of November and December to fishing for groundfish, the Council recommends pinger use during those months.

Acoustic alarms meeting the specifications of devices used during fall 1994 and 1995 substantially reduced the bycatch of porpoise in the sink gillnet fishery (see Appendix II). Concerns remain, however, if such alarms are to come into general use. The alarm signal

emitted by the acoustic device authorized in this fishery is not expected to cause acoustic trauma based on available information, although their frequency is well within the hearing range of harbor porpoise. In the 1994 Mid-coast experiment, animals became entangled in control nets adjacent to nets with pingers, with each net 300 feet in length. While this is not conclusive evidence by any means, it is possible to speculate that porpoise, at least in that situation, were not excluded from the area because of intolerance to the pinger alarm signal.

None of the previous work with pingers in this area was designed to evaluate other potential impacts to porpoise. The question of habituation to the alarm signal appears to be the most important question that requires further investigation. The impacts of such sounds on other marine biota also remains an important and open question. Others, to a lesser degree, include the possibility of attraction to the alarms by porpoise or other marine mammals and exclusion of animals from important habitat. The possibility of potentially serious negative impacts as a result of the last two scenarios seems less likely in view of the lack of evidence. In the 1994 experiment, porpoise moved away from the immediate areas of an acoustic deterrent signal but did not leave the study area altogether.

The Council discussed the impacts of FMP measures on harbor porpoise in the FSEIS for Amendment 7, Section E.7.1.2. The impacts of harbor porpoise closures are also specifically discussed in Frameworks 4, 12, 14 and 15.

### 4.3 Impacts on threatened and endangered species

The Council discussed the biological impacts of FMP measures on threatened and endangered species in the FSEIS for Amendment 5, Section E.7.1 of the in the FSEIS for Amendment 7, Section E.7.1.2. NMFS also issued a Biological Opinion for the plan, most recently in February, 1996. NMFS concluded that existing fishing activities and related Amendments 5 and 7 management measures were not likely to jeopardize the continued existence of any threatened or endangered species. The implementations of the final rule enacting this framework does not change the basis for NMFS' determination in the Biological Opinion issued on February 16, 1996, that the Northeast Multispecies FMP, as administered under Amendment 7, will not jeopardize the continued existence of endangered and threatened species under NMFS jurisdiction or result in adverse modification of critical habitat. Should project plans change or new information become available that changes the basis for this determination, the consultation will be re-initiated.

Information on the impacts of acoustic devices on threatened and endangered species was most recently discussed in Framework 15 in conjunction with the re-initiation of consultation with the National Marine Fisheries Service as required under section 7(a)(2) of the Endangered Species Act. Concerns discussed at that time involved the displacement of gillnet fishing effort into areas of higher use by endangered species and the possible impact of pinger sounds on animals that may feed or transit the area.

As discussed in Framework Adjustment 4 and 15, the Mid-coast Area has not been a location where whales aggregate, however, some percentage of animals transit as they move southward to winter feeding grounds. If displacement of fishing effort occurs, vessels will likely move into adjacent areas also not regularly frequented by these species given their

distribution. Fishing effort is not expected to increase as a result of the proposed action, although some fishermen may purchase pingers and either participate in the experimental fishery or fish within the closure boundaries in November and December. In past instances that number has been fewer than 15, possibly because of the high cost of the devices.

Very little is known about the impacts of pinger alarm signals on threatened and endangered species. Historical information collected by federal observers indicates no negative effects to date. The signal emitted by the type of pinger required in this fishery is within the hearing range of the species found in the Mid-Coast Area, but it has not been possible to determine whether such sounds are capable of causing acoustic trauma. The alarm signal lasts for about 300 meters before dropping to ambient levels producing little or no effect unless animals are inside that range. Pinger use in the previous experiments was probably not of sufficient duration to determine whether there was attraction to the sound source, displacement from important habitat or habituation to a point where the alarms would become ineffective.

## 5.0 APPLICABLE LAW

### 5.1 Magnuson Act- Consistency with National Standards

Section 301 of the FCMA requires that any regulation promulgated to implement any FMP or amendment shall be consistent with the seven national standards listed below.

1. *Conservation and management measures shall prevent over-fishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.*

   The proposed action is being taken in the context of the rebuilding plan implemented under Amendment 7. The principal criteria on which alternatives under this action have been evaluated is whether they achieve a savings in Gulf of Maine cod, the principal stock in this area which is the focus of the rebuilding plan, that are consistent with expected savings resulting from the existing closure. The second criteria on which alternatives have been evaluated is the reductions in revenues lost in comparison to the existing closure. The proposed action was chosen because it produced the greatest savings, that is optimized the economic yield, within the constraint of the conservation objectives consistent with this standard.

2. *Conservation and management measures shall be based upon the best scientific information available.*

   The Council has worked closely with the Northeast Fisheries Science Center in the development and analysis of alternatives. The final committee meeting, in which the recommended alternative was developed, was held at the Center to have close-at-hand the computing facilities and technical support to rapidly analyze final modifications to different alternatives. The options were evaluated on 1993 landings and revenues, the most recent year for which such data is available at the scale needed to a perform the analysis.

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.*

The proposed action covers only small geographic area representing a part of the range of affected stocks. The action is taken in the context of, and consistent with the rebuilding plan established by Amendment 7 which does address the stock throughout its range.

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 manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.*

The action does not discriminate between residents of different states. The existing closure which is being adjusted by this action extends to the coasts of Maine, New Hampshire and Massachusetts. The proposed action moves the closure away from the coastline in 1997 to an area that is fished by vessels from all three states, as well as vessels from outside the region on a seasonal basis. While the proposal for 1998 and thereafter returns the closure to its original area, the Council is taking this action at the request of small-boat fishermen from the affected area in response to their concerns about potential effort displacement into Ipswich Bay.

One of the principal motivations for the Council's action is the issue of fairness. A number of small vessel operators felt unfairly treated by the existing closure because they are constrained by weather and steaming range from fishing outside the area during November and December. They argued that larger vessels could move offshore and were less restricted by the weather during those months, while the small boats could not without increasing their safety risk. By moving the season of the closure to May and by leaving some inshore grounds open, the Council is addressing this fairness issue while still achieving the conservation objectives of the plan.

However, some fishermen feel that the action proposed for 1997 may still unfairly impact small inshore vessels due to the displacement and concentration of effort in a small inshore area. In response, the Council adopted a second-year measure that will take effect barring future action by the Council to modify it. This two-tiered approach will enable the Council to closely monitor the impacts of the 1997 closure to verify or evaluate the effort displacement which those fishermen anticipate. By including the 1998 measure the Council is demonstrating its concern for the impacts on the inshore fleet and acknowledging the uncertainty in projecting the impacts of the proposed action while at the same time putting forward the measure it feels will best achieve the plan objectives. Having a default measure for 1998 is a conservative strategy to ensure that if the effort displacement impacts are as severe as some fishermen anticipate, then no further action by the Council is required to address the issue.

The Council notes that any of its actions may have differential impacts on specific areas or vessel groups. This condition is particularly true of area closures when a

region or port is near the area inhabited by the species of concern, or if the area closed is used by only a segment of the industry. The offshore year-round closures, for example, only affect the category of larger vessels that traditionally fish those grounds. In the case of the proposed action, cod in the Mid-Coast area are concentrated on Jeffreys Ledge at this time. The Council also points out that while small gillnet vessels may be impacted by the increased competition for available bottom and by potential gear conflicts, the impact of the closure measured by total lost revenues is actually higher on trawl vessels.

5. *Conservation and management measures shall, where practicable, promote efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.*

The purpose of this action is to reduce the economic impact of the conservation measure without compromising its conservation objective. By shifting the closure to a period when fish prices are significantly lower, the same number of fish can be "saved" at a lower cost to the industry. This promotes efficiency in the use of the resource by allowing fishermen to land the seasonally higher priced fish.

6. *Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.*

The Council is taking this action under the framework procedure which enables it to make timely adjustments to the regulations. This Council will continue to monitor the effects of this action and make future adjustments as needed. Furthermore, the Council is taking this action to address the variations in biological factors such as spawning or migratory aggregations and economic factors such as seasonal price fluctuations and vessel size limitations.

7. *Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.*

As noted, the purpose of this action is to reduce the economic burden of the area closure on fishermen without compromising its conservation benefits. By shifting the timing of the closure to a lower-price period and focusing the areal aspect where the catches are relatively high, the Council is minimizing costs.

The Council has considered the potential for duplication of regulations on gillnet vessels which are also subject to harbor porpoise protection measures under the Marine Mammal Protection Act. The Council has made a great effort to integrate groundfish closures with harbor porpoise closures, although this is complicated by potential changes in porpoise regulations taking place concurrently with the development of groundfish regulations. The Council is working closely with NMFS to coordinate the development of groundfish rebuilding and harbor porpoise protection measures. The Council has submitted three framework adjustments to the Multispecies FMP specifically to address harbor porpoise protection (Frameworks 4, 12, 14 and 15) and has indicated that it will continue to work toward achieving the

goals of the MMPA.

## 5.2 National Environmental Policy Act (NEPA)

The Council conducted an analysis of the environmental impacts of the stock rebuilding plan under Amendment 7. The Final Environmental Impact Statement (FSEIS) indicated that the impacts of that action would be significant, particularly the positive biological and long-term economic impacts of rebuilding the stocks. Initially, while stocks were just beginning to rebuild, the Council expected that vessel owners would experience short-term negative impacts. The proposed action is intended to partially mitigate one of those immediate economic impacts without jeopardizing the stock-rebuilding plan.

### 5.2.1 Environmental Assessment

The purpose and need for the proposed action are discussed in Section 2.1. The proposed action and alternatives, including the no-action alternative, are discussed in Section 3.0. The analysis of impacts are discussed in Section 4.0 of this document. Based on this analysis, the Council finds that the proposed action will have no significant impact on the environment.

### 5.2.2 Finding of no significant environmental impact (FONSI)

NOAA Administrative Order 216-6 provides guidance for the determination of significance of the impacts of fishery management plans and amendments. The five criteria to be considered are addressed below:

1) *Can the proposed action be reasonably expected to jeopardize the long-term productive capability of any stocks that may be affected by the action?*

   The Council has developed the proposed action with the specific objective of maintaining the conservation benefits of the measure which is being replaced. This area closure is based primarily on conservation considerations and is an important component of the rebuilding plan under Amendment 7.

2) *Can the proposed action be reasonably expected to allow substantial damage to the ocean and coastal habitats?*

   The proposed action is not expected to impact coastal or ocean habitat.

3) *Can the proposed action be reasonably expected to have an adverse impact on public health or safety?*

   The measure is not expected to have any adverse impact on public health or safety. On the other hand, the proposed action may alleviate some safety concerns for small vessels under the no action alternative by shifting the closure to May when the weather is less severe than in November and December, and by leaving some inshore grounds open.

4) *Can the proposed action be reasonably expected to have an adverse effect on endangered, threatened species or a marine mammal population?*

The NMFS Biological Opinion for Amendment #7, issued under authority of Section 7 (a) (2) of the Endangered Species Act indicated that the "existing fishing activities and related management measures proposed ... are not likely to jeopardize the continued existence of any threatened or endangered species under (NMFS) jurisdiction." The proposed measure does not change that finding because allowing gillnetters to fish in the area during November and December is conditioned on their use acoustic deterrent devices ("pingers") to mitigate the bycatch of harbor porpoise. Acoustic deterrents have to date been effective in the Mid-Coast Area during this period.

5) *Can the proposed action be reasonably expected to result in the cumulative adverse effects that could have a substantial effect on the target resource species or any related stocks that may be affected?*

Since this action is expected to result in conservation benefits consistent with the measure it is replacing, particularly with respect to cod, haddock and yellowtail flounder, it is not expected to have an adverse impact on the target species. The displacement of effort into other fisheries that may result from this action is expected to be less than that displaced from the existing closure because of its shorter duration, smaller area and seasonality. For that reason it may reduce the impacts on other stocks.

Based on this guidance and the evaluation of the preceding criteria, the Council proposes a finding of no significant impact.

**FONSI statement:** In view of the analysis presented in this document and in the DSEIS for Amendment #7 to the Northeast multispecies Fishery Management Plan, it is hereby determined that the proposed action would not significantly affect the quality of the human environment with specific reference to the criteria contained in NDM 02-10 implementing the National Environmental Policy Act. Accordingly, the preparation of a Supplemental Environmental Impact Statement for this proposed is not necessary.

_____ _____

Assistant Administrator for Fisheries, NOAA

Date

### 5.3 Regulatory Impact Review (Regulatory Flexibility Act and Executive Order 12866)

This section provides the information necessary for the Secretary of Commerce to address the requirements of Executive Order 12866 and the Regulatory Flexibility Act. The purpose and need for management (statement of the problem) is described in Section 2.0 of this document. The alternative management measures of the proposed regulatory action are described in

Section 3.0. The analysis of impacts is presented in Section 4.0. A review of the proposed action in the context of Executive Order 12866 and the Regulatory Flexibility Act is summarized below.

### 5.3.1 Executive Order 12866

The proposed action does not constitute a significant regulatory action under Executive Order 12866. (1) As shown in section 4.0, the proposed action will not have an annual effect on the economy of more than $100 million. (2) Since the proposed action is designed to reduce the economic burden of the area closure, it will prevent a reduction in the economic benefits generated from this fishery. For these reasons, the proposed actions will not adversely affect in a material way the economy, productivity, competition and jobs. (3) For the same reasons, it will not adversely affect competition, jobs, the environment, public health or safety, or state, local or tribal governments and communities. (4) The proposed action will not create an inconsistency or otherwise interfere with an action taken or planned by another agency. No other agency has indicated that it plans an action that will affect this fishery. (5) The proposed action will not materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of their recipients. (6) The proposed action does not raise novel legal or policy issues. Regulations regarding seasonal area closures have long been used to manage fisheries in this region and throughout the country.

### 5.3.2 Regulatory Flexibility Act

Since this action is designed to change the timing and location of the area closure to alleviate the impact on small fishing vessels, considered small business entities, it provides a significant relief from an undue regulatory burden.

## 5.4 Endangered Species Act

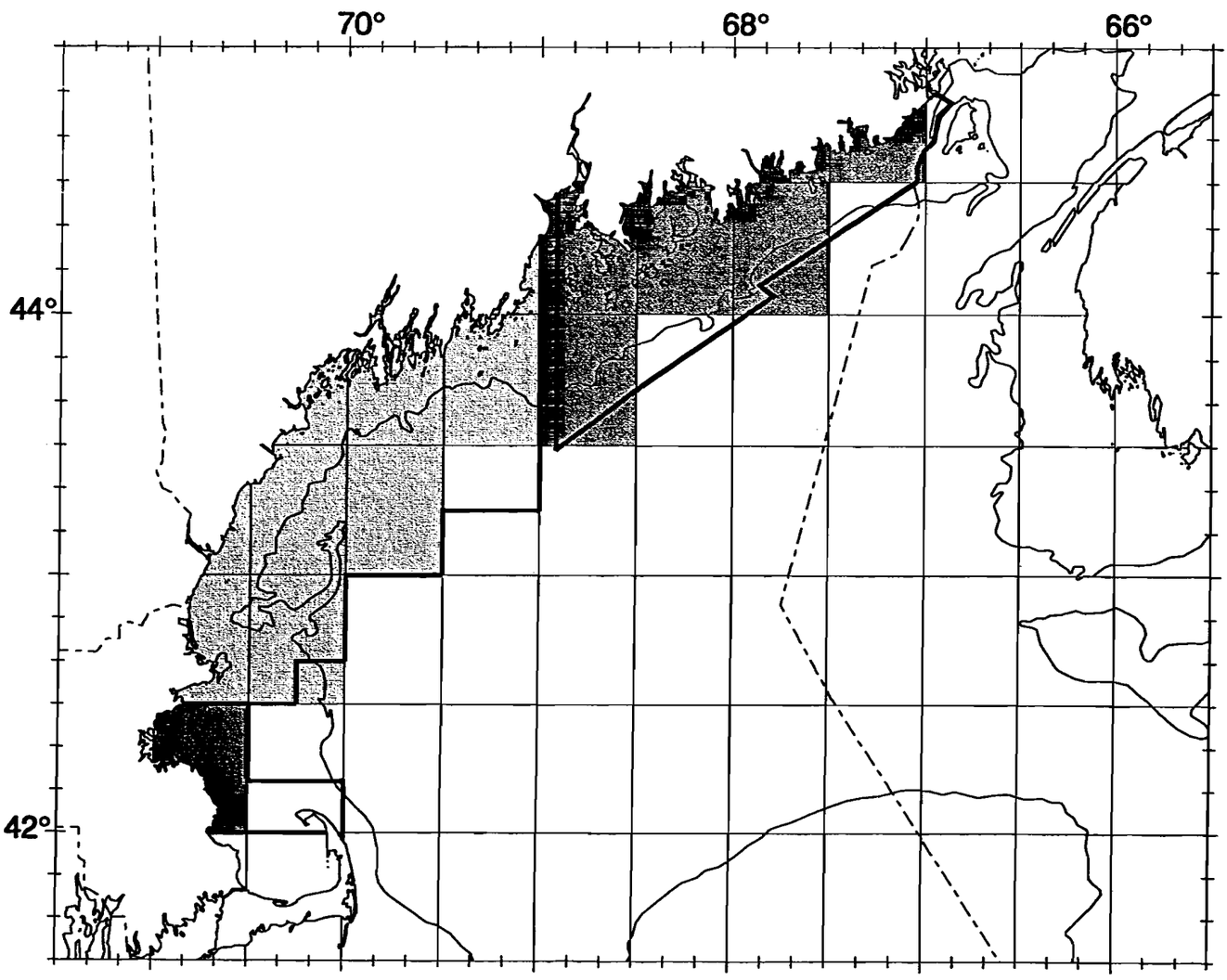
An adequate discussion of protected species is contained in Section E.6.3.4, Endangered Species and Marine Mammals, of the Amendment 5 FSEIS, and the Amendment 7 FSEIS, and the associated NMFS Biological Opinions issued in November, 1993, and February, 1996.

## 5.5 Coastal Zone Management Act (CZMA)

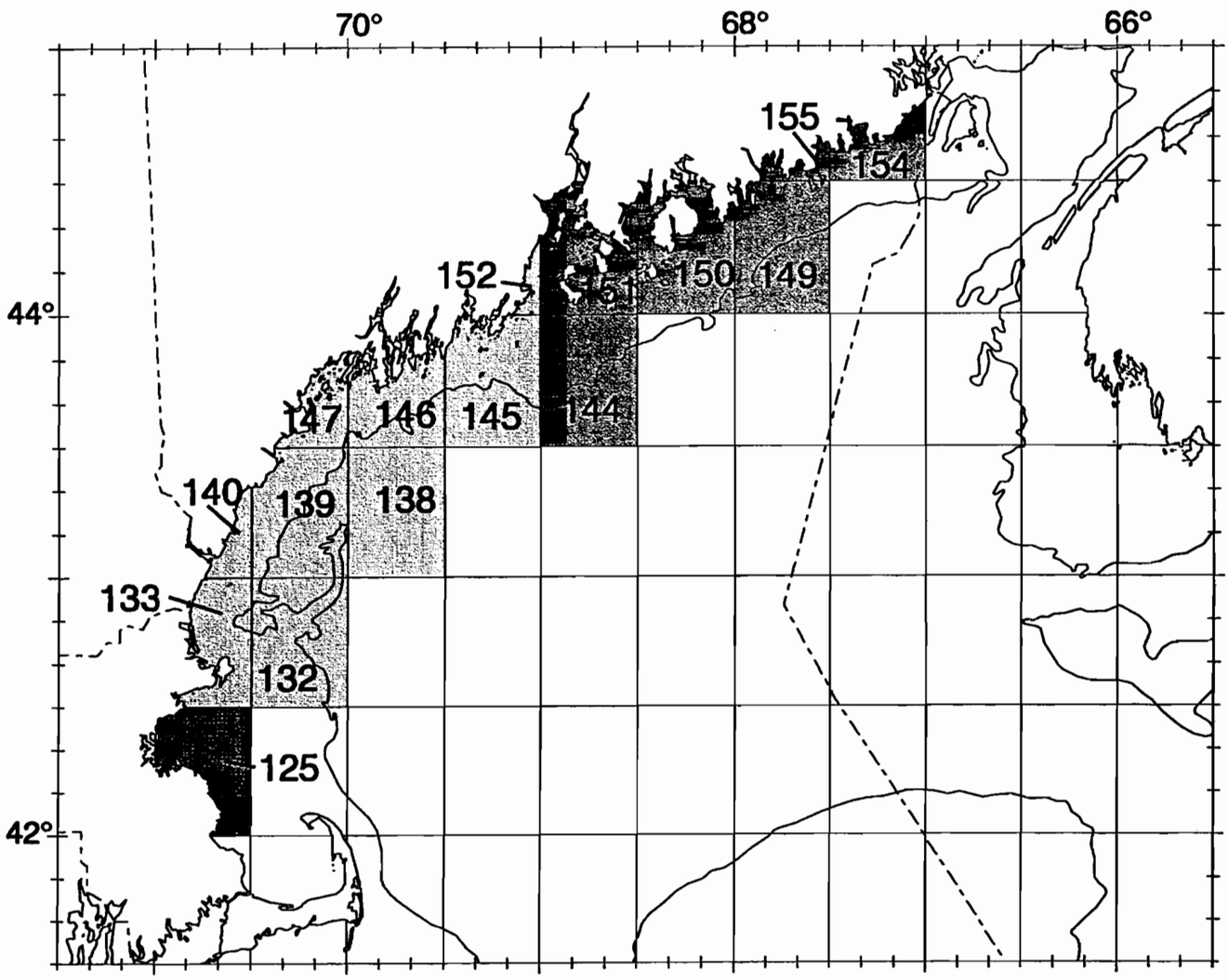
Upon the submission of Amendment 7, the Council conducted a review of the FMP for its consistency with the coastal zone management plans of the affected states. All the states concurred with the Council's consistency determination. See Section 8.5 Volume IV of Amendment 7 to the Northeast Multispecies FMP for the Council's consistency determination. The response letters of the states are on file at the Council office. The Council has determined that the proposed action is within the scope of measures already reviewed for consistency with states' CZM plans and is, therefore, consistent with those plans. The Council has notified potentially affected states of this action and of its determination that the action is consistent with its earlier consistency determination.

## 5.6 Paperwork Reduction Act (PRA)

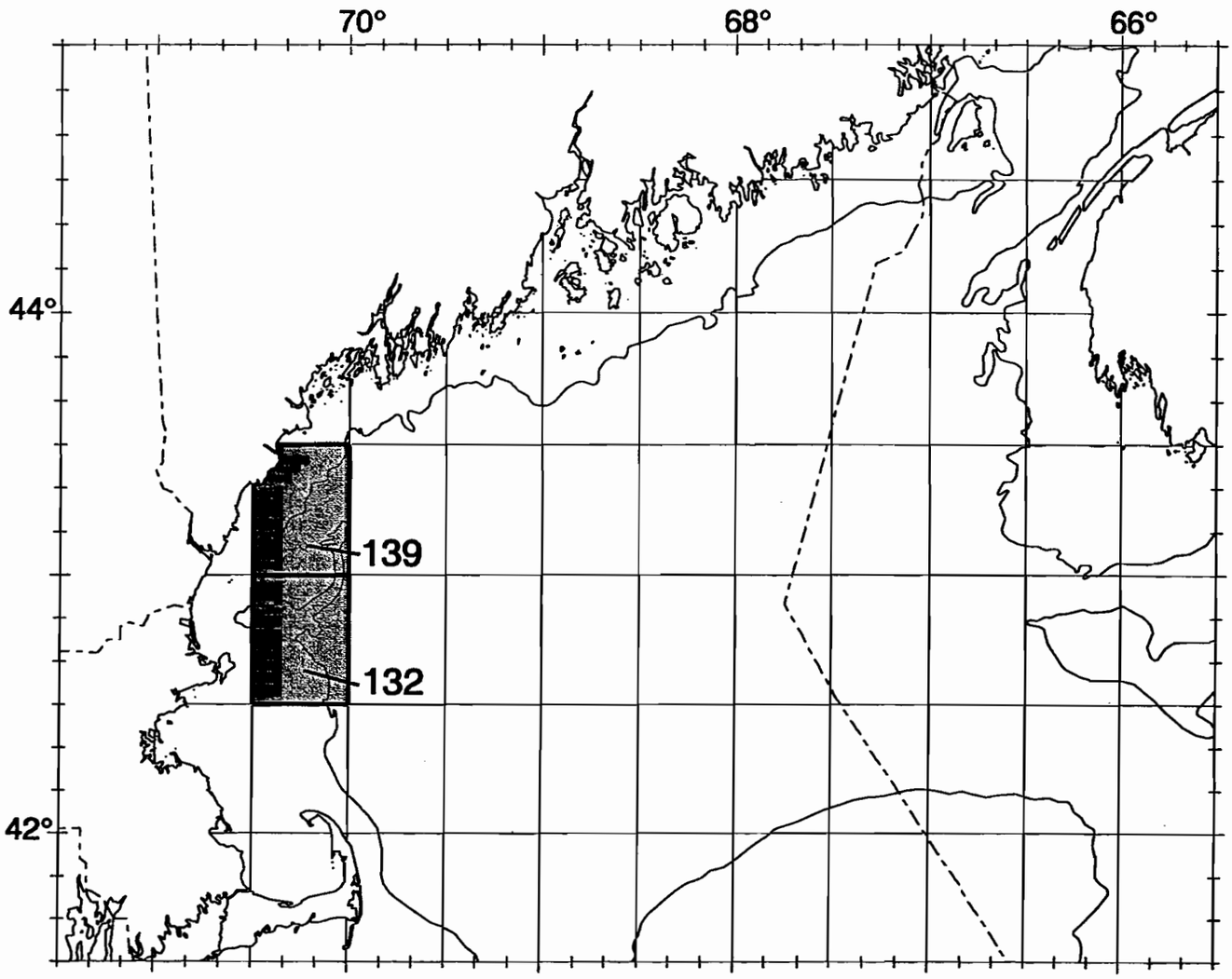
Copies of the PRA analysis for Amendment 7 to the Northeast Multispecies FMP are available from NMFS Regional Office. The burden-hour estimates are detailed in the Classification section of the *Federal Register* notice of the final rule implementing the amendment (61 *Federal Register* 27731, May 31, 1996). The proposed action requires no new collection of information.




**Map 1- Current area closures and 30-minute squares**




**Map 2- Reference numbers for 30-minute squares**




**Map 3- Proposed area closure for May 1997**

| Species Landings (lbs) | Default (Nov & Dec) | Proposed Action | Rolling Closure Options: Original | Modified Original | Alt 1 | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 6 |
|---|---|---|---|---|---|---|---|---|---|---|
| Monkfish | 881,748 | 78,857 | 60,940 | 62,530 | 10,243 | 48,021 | 112,038 | 92,185 | 370,948 | 292,853 |
| Cod | 1,289,985 | 1,291,293 | 304,500 | 483,804 | 237,922 | 267,472 | 1,322,058 | 683,482 | 1,322,902 | 1,298,189 |
| Winter Flouder | 91,782 | 64,357 | 12,058 | 26,778 | 24,452 | 24,842 | 108,760 | 36,171 | 59,099 | 72,594 |
| Witch Flounder | 197,653 | 76,634 | 21,862 | 41,719 | 20,373 | 50,178 | 76,458 | 48,990 | 154,395 | 135,229 |
| Yellowtail Flounder | 114,870 | 85,321 | 10,506 | 43,673 | 23,275 | 24,997 | 107,386 | 44,370 | 75,804 | 95,458 |
| American Plaice | 451,444 | 635,050 | 69,147 | 301,838 | 86,240 | 120,949 | 651,284 | 152,164 | 775,897 | 716,006 |
| Widowpane Flounder | 8,556 | 306 | 170 | 117 | 323 | 323 | 1,064 | 931 | 257 | 107 |
| Haddock | 16,757 | 2,497 | 2,744 | 585 | 1,389 | 1,980 | 5,467 | 4,422 | 10,571 | 6,756 |
| Red Hake | 59,637 | 48,232 | 10 | 31,942 | 0 | 0 | 40 | 537 | 14,957 | 38,015 |
| White Hake | 146,141 | 26,544 | 8,543 | 7,327 | 3,225 | 5,467 | 76,871 | 30,405 | 119,503 | 87,772 |
| Redfish | 20,773 | 7,588 | 1,931 | 1,919 | 2,332 | 3,275 | 12,145 | 2,931 | 14,224 | 12,250 |
| Ocean Pout | 434 | 6,461 | 215 | 4,096 | 812 | 812 | 4,152 | 1,120 | 584 | 3,428 |
| Pollock | 1,264,851 | 23,936 | 28,697 | 3,939 | 5,598 | 6,317 | 34,628 | 38,230 | 52,417 | 37,993 |
| Silver Hake | 514,200 | 29,303 | 507 | 16,600 | 119 | 119 | 2,990 | 835 | 10,579 | 21,442 |
| **Revenue Impacts ($)** | | | | | | | | | | |
| Gillnet | 1,567,351 | 314,699 | 108,399 | 219,120 | 35,942 | 35,942 | 411,843 | 248,876 | 275,292 | 336,728 |
| Hook | 61,609 | 9,858 | 11,061 | 5,455 | 5,185 | 5,185 | 19,190 | 49,392 | 8,517 | 12,429 |
| Trawl | 2,868,370 | 1,459,876 | 419,474 | 610,319 | 388,099 | 551,950 | 1,682,120 | 905,446 | 2,002,728 | 1,667,961 |
| Total | 4,497,330 | 1,784,433 | 538,934 | 834,894 | 429,226 | 593,077 | 2,113,153 | 1,203,714 | 2,286,537 | 2,017,118 |
| **Landings (lbs)** | | | | | | | | | | |
| Gillnet | 1,823,370 | 396,530 | 95,582 | 255,184 | 32,356 | 32,356 | 468,001 | 212,191 | 491,363 | 414,629 |
| Hook | 55,907 | 14,072 | 11,462 | 7,132 | 5,707 | 5,707 | 24,343 | 49,670 | 12,530 | 24,140 |
| Trawl | 2,605,382 | 1,719,617 | 344,006 | 662,346 | 351,937 | 464,811 | 1,804,743 | 768,814 | 2,255,224 | 2,029,142 |
| Total | 4,484,659 | 2,130,219 | 451,050 | 924,662 | 390,000 | 502,874 | 2,297,087 | 1,030,675 | 2,759,117 | 2,467,911 |
| Blocks | | | 132,133 | 132,133 | 132, 133 | 132,133 | 132,133 | 132,133 | | Mid-Coast |
| Dates | | | 3/1-3/14 | 5/1-5/14 | 4/1-4/15 | 4/1-4/15 | April | March | | May 10-30 |
| Blocks | 132,139 | | 139,140,147 | 139,140,147 | 139,140,147 | 138,139,140,147 | 139,140,147 | 139,140,147 | 138,139,140,147 | |
| Dates | 5/1-5/31 | | 4/10-4/24 | 4/10-4/24 | 4/16-4/30 | 4/16-4/30 | May | April | 5/1 -6/9 | |
| Blocks | | | 145,146,152 | 145,146,152 | 145,146,152 | 145,146,152 | 145,146,152 | 145,146,152 | | |
| Dates | | | 5/20-6/2 | 5/20-6/2 | 5/1-5/15 | 5/1-5/15 | June | May | | |

Monthly Average Prices of Groundfish Species (1993) 2
in Portland, Gloucester and N.H.
16:22 Thursday, August 8, 1996

SPECIES Cod

| | PORT | | |
|---|---|---|---|
| | Portland | N.H. | Gloucester |
| | PRICE | PRICE | PRICE |
| MONTH | MEAN | MEAN | MEAN |
| 01 | 1.23 | 1.22 | 1.15 |
| 02 | 1.43 | 1.31 | 1.17 |
| 03 | 1.18 | 1.10 | 1.05 |
| 04 | 0.93 | 0.96 | 0.88 |
| 05 | 0.77 | 0.81 | 0.78 |
| 06 | 0.91 | 0.95 | 0.89 |
| 07 | 1.04 | 1.04 | 0.97 |
| 08 | 1.11 | 1.08 | 1.04 |
| 09 | 1.31 | 1.17 | 1.15 |
| 10 | 1.13 | 1.12 | 1.06 |
| 11 | 1.04 | 0.99 | 0.92 |
| 12 | 1.34 | 1.24 | 1.17 |

**Table 2- Monthly prices of cod (1993) for three Gulf of Maine ports**

| Alternatives | Reduction in Gross Revenues (1) | Variable Cost Savings* (2) | Reduction in Producer Surplus (3) |
|---|---|---|---|
| No Action (Default Closures of November And December) | | | |
| Gillnet | 1,567,351 | 360490.73 | 1,206,860 |
| Hook | 61,609 | 18482.7 | 43,126 |
| Trawl | 2,868,370 | 717092.5 | 2,151,278 |
| Total | 4,497,330 | 1,096,066 | 3,401,264 |
| Proposed Action for 1997 (May 1-May 31) | | | |
| Gillnet | 314,699 | -127,619 | 442,318 |
| Hook | 9858 | 2,957 | 6,901 |
| Trawl | 1459876 | 364,969 | 1,094,907 |
| Total | 1,784,433 | 440,307 | 1,544,126 |
| Proposed Closures for 1998 (Closure of Mid-Coast during May 10-30) | | | |
| Gillnet | 336,728 | -122,553 | 459,281 |
| Hook | 12,429 | 3,729 | 8,700 |
| Trawl | 1,667,961 | 416,990 | 1,250,971 |
| Total | 2,017,118 | 498,166 | 1,718,952 |

* Includes the cost of pingers at $200,000 for the gillnet fleet --assuming 50 vessels fish in November and December and the cost of pingers is $4000 for each vessel.

**Table 3- Estimated Changes in Revenues, Costs and Producer Surplus under Proposed and No-Action Alternatives.**

| Alternatives | Change in Gross Revenues (Net of Status Quo) (1) | Variable Cost Savings (Net of Status Quo) (2) | Change in Producer Surplus (Net of Status Quo) (3) |
|---|---|---|---|
| 1997 Closure | | | |
| Gillnets Allowed in November and December | | | |
| a. Cost of Pingers is zero | 2,712,897 | -655,759 | 2,057,138 |
| b. Cost of Pingers is $200,000* | 2,712,897 | -855,759 | 1,857,138 |
| Gillnets Prohibited in November and December | 1,145,546 | -295,268 | 850,278 |
| 1998 Closure | | | |
| Closure of Mid-Coast: May 10 to May 31 (Gillnets Allowed in Nov. and Dec.)* | 2,480,212 | -797,900 | 1,682,312 |
| 1997 and 1998 Totals (Present Value in 1993 Dollars**) | | | |
| Total Net Benefits- 2 Years | 4,967,635 | -1,381,122 | 3,568,331 |

*Assuming 50 gillnet vessels fish in November and December and the cost of pingers is $4000 for each vessel.
** A 10 percent discount rate is used to calculate the present value of benefits in 1998.

**FRAMEWORK 19**
**APPENDIX I**

**Draft Final Rule**

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 648
[Docket No. ]

Northeast Multispecies Fishery; Framework 19;

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (**NOAA**), Commerce.

ACTION: Final rule.

SUMMARY: NMFS issues this final rule to implement measures contained in Framework 19 of the Northeast Multispecies Fishery Management Plan (FMP). The rule opens the November-December groundfish closure of the Mid-Coast Area and implements a closure of two 30-minute square areas containing Jeffreys Ledge for May, 1997 and a closure of the Mid-Coast Area for the period May 10 through May 30 for 1998 and thereafter. Vessels fishing with sink gillnets will be allowed to fish in the Mid-Coast Area during November and December contingent on their use of acoustic deterrent devices ("pingers"). The New England Fishery Management Council (Council) has submitted this action under the framework procedure described in §648.90 (b) of this part. The intent of this rule is to reduce the economic impact of the Mid-Coast Area closure while achieving the same conservation.

DATES: The rule is effective on November 1, 1996.

ADDRESSES: Copies of Amendment 7, its regulatory impact review (RIR), and the final regulatory flexibility analysis (FRFA) contained with the RIR, its final supplemental environmental impact statement (FSEIS), and Framework 19 are available on request from Christopher B. Kellogg, Acting Executive Director, New England Fishery Management Council, 5 Broadway, Saugus, MA, 01906-1097.

FOR FURTHER INFORMATION CONTACT: **[NAME AND ADDRESS]**.

SUPPLEMENTARY INFORMATION:

Background

Amendment 7 to the FMP became effective on July 1 (61 FR 27710). The purpose of Amendment 7 was to rebuild depleted stocks of cod, haddock and yellowtail flounder by reducing fishing effort through a number of management measures, primarily controls on days-at-sea (DAS) and area closures. The amendment contains "default" area closures for the Gulf of Maine based on existing harbor porpoise protection closures because the Council did not want to delay implementation of other important components of the plan. The Council indicated its intent and has undertaken to modify the closures through the framework adjustment procedure. This proposed action would change the time and area of the Mid-Coast closure and implement the change before the default closure takes effect on November 1, 1996.

The purpose of the proposed action is to reduce the overall economic impact of the area closure while still achieving the conservation objectives of the rebuilding plan implemented by Amendment 7, and to address concerns about the distribution of economic impacts of the existing closures which may disproportionally affect small inshore vessels. The timing of the closure is moved from November-December to May when prices are lower and landings are higher, thereby protecting the same amount of cod in a shorter period of time and at a lower cost in terms of lost revenues. By shifting the closure to the spring, small vessels which are more constrained by winter weather may fish on their traditional grounds in November and December when alternatives are fewer than in May. The action also reduces the size of the area in the first year, leaving open some inshore grounds, but contains a built-in safety measure that expands the area of the May closure to the entire Mid-Coast Area in 1998 to address concerns of some fishermen that effort will shift to the inshore area. The Council will monitor the effort shifts during the first year.

Summary of measures

This final rule cancels the scheduled groundfish closure of the Mid-Coast Area for November and December to vessels capable of catching groundfish and replaces it with a closure in 1997 of the area around Jeffreys Ledge during May 1 through May 31. The area is bounded by the following lines of latitude and longitude: 43°30'N, 70°00'W, 42°30'N, and 70°30'W. Future action by the Council notwithstanding, beginning in 1998 and thereafter, the entire Mid-Coast Area will be closed from May 10 through May 30. Since vessels fishing with sink gillnets are still subject to a closure in this time and area to protect harbor porpoise, this action also allows fishing with sink gillnets in the area during November and December provided the nets are equipped with acoustic deterrent devices ("pingers") as prescribed in the 1995 and 1996 NMFS-authorized experimental fisheries.

Comments and Responses

The Council considered information, views and comments made at six Council meetings, five Groundfish Committee meetings, and several subcommittee and informal public meetings held between February and September, 1996. Documents summarizing the Council's proposed action, and the analysis of biological and economic impacts of this and alternative actions were available for public review on August 30, seven days prior to the final meeting required under the framework adjustment process. Written comments were accepted up to and at the September 9, 1996 Council meeting in Peabody, MA, at which time the decision to finalize this framework adjustment was made. Several individuals commented on the Council's proposal.

Comment 1: A Council member brought forward comments from small-boat fishermen in New Hampshire and Newburyport, MA, that the proposal to close the Jeffreys Ledge area for the entire month of May could force a large number of small boats that fished in that area to fish inshore in the area of Ipswich Bay because they are physically limited from fishing elsewhere. The fishermen are concerned that the increased density of fishing activity would be detrimental to the resource there and would increase the incidence of gear conflicts.

Response: The Council adopted a second-year plan that would close the entire Mid-Coast Area for May 10 through May 30. While this may result in requiring some vessels to tie up during this period, the time of the closure is reduced by eleven days, and it applies over a broader area. This is a risk averse approach that will implement a more conservative measure unless the Council determines that the measure for 1997 is effective and does not

have the effort-displacement problems anticipated by some fishermen. If the Council makes such a determination, it will have to make an adjustment through the framework process before May, 1988.

Comment 2: The proposed action does not automatically open the area to gillnetting since the area is also closed to protect harbor porpoise. The NMFS-authorized experimental fisheries indicated that the pingers are effective in reducing harbor porpoise bycatch.

Response: The Council added a measure that would allow gillnets equipped with pingers to fish in the area during November and December as supported by experimental fishery results.

Comment 3: Two inshore trawl fishermen from Gloucester commented that they supported the Groundfish Committee's recommendation to close just Jeffreys Ledge, but that the closure of the larger Mid-Coast Area would force them to fish offshore.

Response: The Council noted that the proposed action retains the committee's recommendation for the first year but that it is including the broader closure for the second year as a conservative strategy to address concerns of other fishermen about increase density of fishing activity in a small inshore area. The Council may adjust the second-year measure if the problem anticipated by those fishermen does not occur in the first year.

Comment 4: A fisherman commented that an area closure unfairly impacts only those vessels displaced by the closure and those that fish in nearby areas where the displaced boats will fish. He suggested that a fairer system would be to reduce days-at-sea equally for all vessels.

Response: The Council recognizes that area closures may have differential impacts on vessels that fish in or near the affected area. However, the area closures are designed as a conservation measure to protect fish in that area, and that closures exist throughout the region which effect only segments of the entire fleet. The Council also indicated that it had considered the days-at-sea reduction schedule in the development of Amendment 7 and that it was not going to adjust the schedule at this early point in the amendment's implementation.

Comment 5: An industry representative from Maine and a representative of the fishing industry in Gloucester, MA, commented that fishing for pelagic species with a mid-water trawl is still prohibited in this area despite its insignificant bycatch of groundfish, and that it should be allowed.

Response: The Council has directed the Groundfish Committee to address this issue and make a recommendation that could be implemented before the May closure.

Adherence to Framework Procedure Requirements

The timing of the rule does not depend on the availability of time-critical data but is relevant to the closure scheduled to begin on November 1. If implementation of this rule is delayed past November 1, vessels will be placed under the burden of the November closure and the closure implemented by this action for May. The public was provided the opportunity to express opinions at numerous meetings beginning in February, 1996. The following list indicates all the meetings at which this action was on the agenda and public comment was heard. The framework adjustment procedure was formally initiated at the Council meeting on July 17 and finalized at a one-day meeting on September 9.

| DATE | MEETING | LOCATION |
|---|---|---|
| 2/27-28 | Council | Danvers, MA |
| 4/11 | Groundfish OS | Peabody, MA |

| | | |
|---|---|---|
| 4/17-18 | Council | Danvers, MA |
| 6/5-6 | Council | Danvers, MA |
| 6/11 | Groundfish OS | Portland, ME |
| 7/9 | Groundfish OS | Peabody, MA |
| 7/17-18 | Council | Peabody, MA |
| 8/5 | Subcommittee | Saugus, MA |
| 8/13 | Groundfish OS | Peabody, MA |
| 8/21-22 | Council | Danvers, MA |
| 8/27 | Groundfish OS | Woods Hole, MA |
| 9/9 | Council | Peabody, MA |

This action has conservation benefits equivalent to the measure it replaces and the need for immediate resource protection is not a consideration in publishing it as a final rule. There will be further evaluation of these management measures based on catch and effort data collected by NMFS and on enforcement activity. NMFS has determined that this framework adjustment is consistent with the national standards, other provisions of the Magnuson Conservation and Management Act, and other applicable law. NMFS, in making that determination, has taken into account the information, views, and comments received during the comment period.

Classification

In that this regulation is not subject to the requirement to publish a general notice of proposed rulemaking under 5 U.S.C. 553 or any other law, this rule is exempt from the requirement to prepare an initial or final regulatory flexibility analysis under the Regulatory Flexibility Act. As such, none has been prepared.

This rule has been determined to be not significant for purposes of E.O. 12866.

No new collection of information is required.

The Assistant Administrator for Fisheries, NOAA, (AA) finds there is good cause to waive prior notice and an opportunity for public comment under 5 U.S.C. 553(b)(B) as such notice and public procedure thereon are unnecessary. Public meetings held by the Council to discuss the management measures implemented by this rule provided adequate prior notice and an opportunity for public comment to be heard and considered. The AA finds that under 5 U.S.C. 553(d), the need to the open the Mid-Coast Area to fishing effective November 1, 1996 constitutes good cause to waive the delay in effectiveness of this regulation. Accordingly, the opening of the Mid-Coast Area is effective November 1, 1996.

The Council conducted a formal consultation under Section 7 of the Endangered Species Act for Amendment 7, including the measures being resubmitted. NMFS has issued its Biological Opinion which found that the proposed action likely would not jeopardize the continued existence of endangered and threatened species or their critical habitat(s). Based on this finding, the Council believes no additional action is required.

List of Subjects in 50 CFR Part 648

Fisheries, Fishing, Reporting and recordkeeping requirements.

Dated: **[DATE]**

For reasons set out in the preamble, 50 CFR Part 648 is amended as follows:

PART 648-- FISHERIES OF THE NORTHEASTERN UNITED STATES

Subpart F-- Management measures for the NE Multispecies Fishery

1. Section 648.14 is revised to read as follows:

§ 648.14 Prohibitions.

(a) * * *

(52) Enter, be on a fishing vessel in, or fail to remove gear from the EEZ portion of the areas described in §648.81 (f)(1) through (h)(1) during the time period specified, except as provided in §648.81(d), (f)(2), (g)(3), and (h)(2).

* * * * *

(80) Use, set, haul back, fish with or possess on board unless stowed in accordance with the requirements of §648.23(b) a sink gillnet in the areas and for the times specificed in §648.87(b) except as provided in paragraph (b)(1)(B)(ii) of that section.

2. Section 648.81 is revised to read as follows:

§ 648.81 Closed areas.

* * * * *

(g) Mid-Coast Closure Area. (1) From May 1 through May 31, 1997, no fishing vessel or person on a fishing vessel may enter, fish or be, and no fishing gear capable of catching multispecies, unless otherwise allowed in this part, may be in the area known as the 1997 Mid-Coast Closure Area, as defined by straight lines connecting the following points in the order stated except as specified in paragraphs (d) and (g)(3) of this sections (copies of a map depicting this area are available from the Regional Director upon request):

1997 MID-COAST CLOSURE AREA

| Point | N. Lat | W. Long. |
|---|---|---|
| MC71 | 43°30′ | 70°00′ |
| MC72 | 42°30′ | 70°00′ |
| MC73 | 42°30′ | 70°30′ |
| MC74 | 43°30′ | 70°30′ |

(2) For 1998 and thereafter, from May 10 through May 30, no fishing vessel or person on a fishing vessel may enter, fish or be, and no fishing gear capable of catching multispecies, unless otherwise allowed in this part, may be in the area known as the Mid-Coast Closure Area, as defined by straight lines connecting the following points in the order stated except as specified in paragraphs (d) and (g)(3) of this sections (copies of a map depicting this area are available from the Regional Director upon request):

MID-COAST CLOSURE AREA

| Point | N. Lat | W. Long. |
|---|---|---|
| MC1 | 42°30′ | (1) |
| MC2 | 42°30′ | 70°15′ |
| MC3 | 42°40′ | 70°15′ |

| | | |
|---|---|---|
| MC4 | 43°40′ | 70°00′ |
| MC5 | 43°00′ | 70°00′ |
| MC6 | 43°00′ | 69°30′ |
| MC7 | 43°15′ | 69°30′ |
| MC8 | 43°15′ | 69°00′ |
| MC9 | (2) | 69°00′ |

[1] Massachusetts shoreline
[2] Maine shoreline

(3) Paragraphs (g)(1) and (g)(2) of this section does not apply to persons of fishing vessels or fishing vessels that meet the criteria in paragraph (f)(2)(i), (ii) or (iii) of this section.

2. Section 648.87 is revised to read as follows:

§ 648.87 Sink gillnet requirements to reduce harbor porpoise takes.

* * * * *

(b) * * *

(1) Mid-Coast Closure Area- (A) From March 25 through April 25 of each fishing year, the restrictions and requirements specified in paragraph (a)(2) [?] of this section apply to the Mid-Coast Closures area as defined under §648.81(g)(2).

(B) (i) From November 1 through December 31 of each fishing year, the restrictions and requirements specified in paragraph (a)(2) [?] of this section apply to the Mid-Coast Closures area as defined under §648.81(g)(2) except as provided in paragraph (b)(1)(B)(ii) of this section.

(ii) Vessels fishing with sink gillnets in the Mid-Coast Closure area from November 1 through December 31 of each fishing year are required to attach at the end of each string of nets and at the bridle of every net within a string of nets, and to maintain as operational and functioning, an acoustic deterrent device that, when immersed in water, broadcasts a 10khz sound at 132 Db re 1 micropascal at 1 meter.

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

# FRAMEWORK 19
# APPENDIX II

## Pinger Experimental Fishery Results

# Experimental Fishery
# Operational Pinger Feasibility
# Z-Band Area of the Mid-Coast Closure
# November-December 1995

**David Potter**
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**02543**

## INTRODUCTION

In November of 1995 the Regional Administrator (RA) of the National Marine Fisheries Service opened an Experimental Fishery to be conducted in the Z-Band of the Mid-Coast closed area (see Fig. 1) for a 60 day period. This Experimental Fishery was a pilot study or a feasibility study for the commercial use of pingers in the sink gillnet fishery. The purpose of the exercise was to determine if pingers, when used in a commercial operation, could continue to demonstrate the by-catch reduction effects demonstrated by the 1994 Pinger Experiment performed by Kraus and Read (1995) on Jeffreys Ledge.

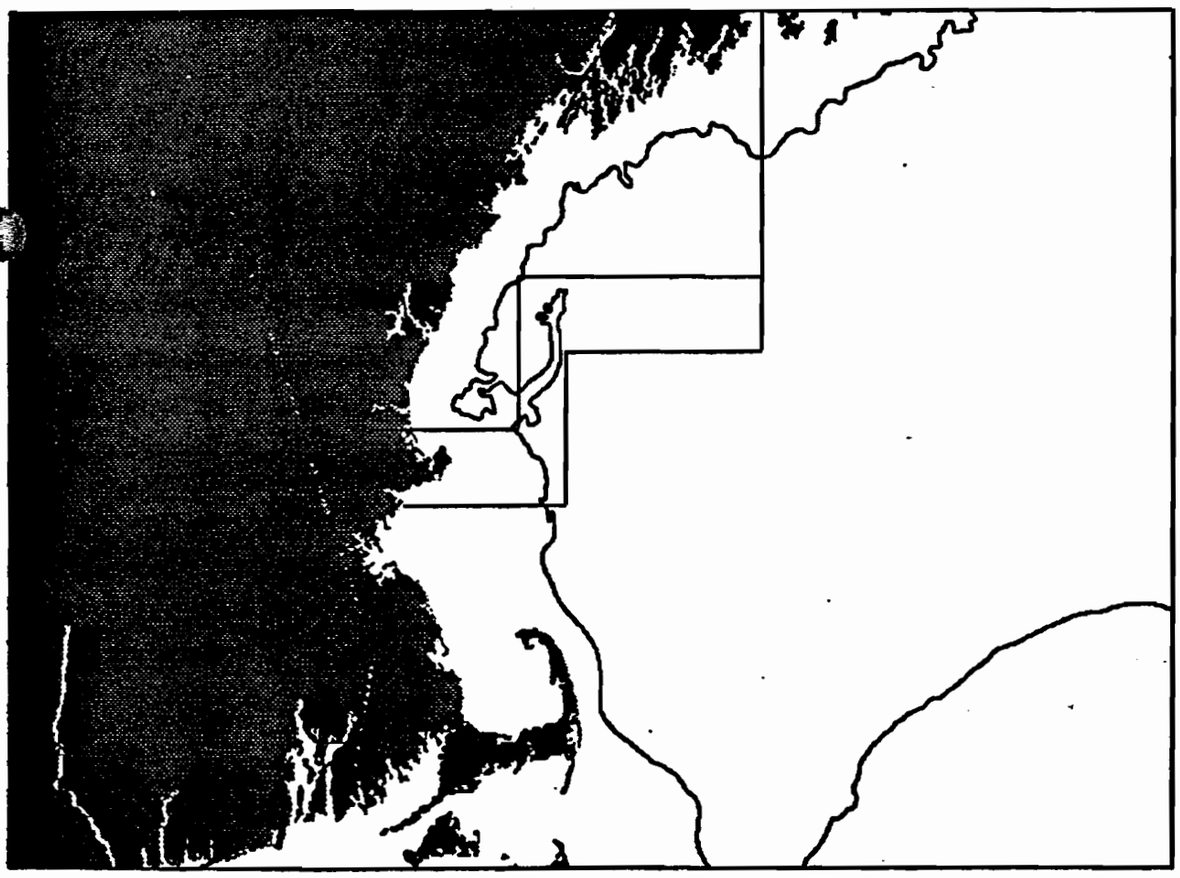

Figure 1. The Mid-Coast closure area delinating the Z-Band.

The New Hampshire Gillnet Fishermans Association took a lead role in the Experimental Fishery and formed the New Hampshire Pinger CO-OP. This group collected old pingers and purchased all the currently available pingers that met the requirements established by the RA and developed a procedure for their distribution among the participants. The pingers were required to meet the acoustic standards set in the 1994 experiment. When immersed in water, the pinger was required to broadcast a 10Khz sound at 132 Db re 1 micropascal @ 1 meter. This sound must last 300 milliseconds and repeat every 4 seconds. Because of the limited number of pingers (approx 700 total) only a portion of the available fleet could participate. Some of the larger vessels that could fish the area beyond the Z-Band (outside the closed area) and the smallest of the vessels could not regularly (safely) fish the Z-band were asked not to participate which simplified the selection process somewhat. The CO-OP coordinated the maintenance of the pingers with battery changes and scheduled the fishermen as to when to bring in their pingers for service.

The NMFS observers were assigned to cover up to 75 trips during the course of the experiment. On these vessels the observer was instructed to perform his/her normal duties and not have anything to do with the operational aspects of the pingers. This is in contrast to the observer efforts in the Kraus/Read Experiment where the observers played an active role in handling the pingers. On the trips covered by observers and on all the trips made without an observer on board the fishermen were required to record data for the NMFS similar to their normal reporting requirements with a two exceptions. One, the Marine Mammal Exemption Program (MMEP) logbooks were requested to be turned in on a weekly basis instead of monthly or annual basis. Two, the Fishing Vessel Trip Reports (FVTR) were asked to be filled out on a haul basis instead of a trip basis to get a bit more detail on differences between hauls. Also on the FVTR the fishermen were asked to report any mammal bycatch.

# RESULTS

The NMFS supplied observers covered 64 trips out of a total of 134 trips accomplished in the Experimental Fishery. This provided a 48% coverage of the fleet as compared to the typical 6-8% observer coverage usually obtained in the fishery (see Summary Appendix A.).

The observed trips hauled 225 strings of between eight and thirty nets per string (Fig.2). With a mean of 14.5 nets/string (SD=5.6) which is similiar to a 1990-1994 average of 13.9 nets/string fished in the Z-Band in November and December.

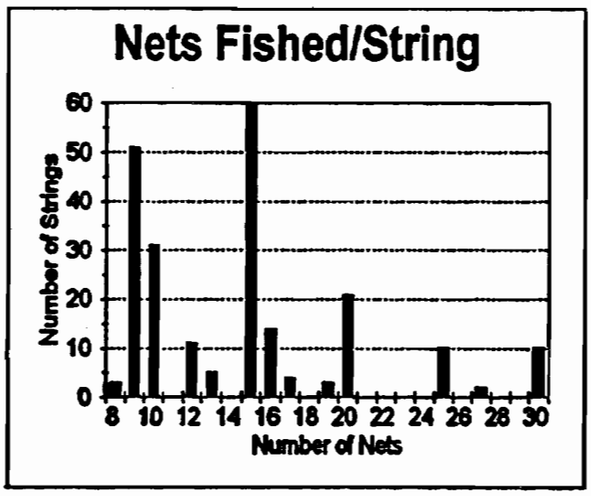


Figure 2.Number of nets fished per string

Based on the average by-catch for the Z-Band area from 1990-1994 for the months of November and December one would have expected 6.32 harbor porpoise taken in the Experimental Fishery's observed trips (Table 1). During the Experimental Fishery there were no harbor porpoise taken on observed or un-observed trips. There is a statistically negligible ($P<.01$) possibility of catching zero harbor porpoise on observed trips by chance given the level of effort and the data from previous years.

| Experimental Fishery | 1990-1994 X bycatch/haul | % Observer Coverage | Predicted Take (225 hauls) |
|---|---|---|---|
| Z-Band November | 0.03 | 81 % | 5.48 (0.8125*225*0.03) |
| Z-Band December | 0.02 | 19 % | 0.84 (0.1875*225*0.02) |
| Total | | | 6.32 |

Table 1. Predicted take in Z-Band, based on the average bycatch during 1990-1994 and 225 observed hauls.

During the observed trips there was a single harbor seal caught in the Experimental Fishery. As a point of interest, from the average bycatch rate for seals seen from 1990-1994 in the Z-Band in November and December one would have expected approximately 3.4 seals taken.

On only 11 occasions (<5%) did a fishers fish a string with less than the desired number (number of nets plus one) of working pingers. In general this occurred when the string was missing one or two pingers and was usually associated with the loss of a net or some gear on a previous trip. In general the CO-OP's program of keeping the equipment in working order and the supplies adequate for the vessels was excellent.

The observer records the minimum and the maximum depth encountered while hauling a net, on average the nets were fished at 34 fathoms although there was a trend to fish deeper as the season progressed (Figure 3). Additionally, the nets are intended to be soaked for a 24 hour period, however 24 hour soaks represent only 41% of the hauls (Figure 4). The mean soak time was 47 hours (SD=26.4).

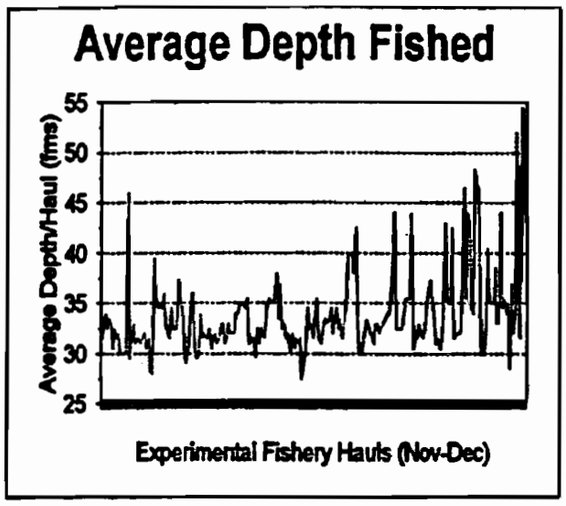


Figure 3. Average Depth fished/haul

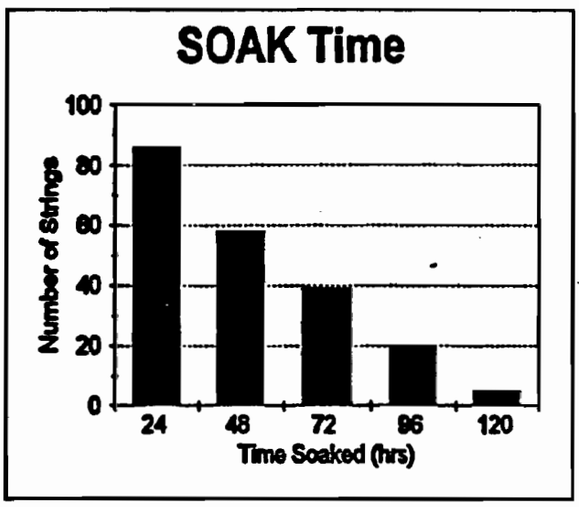


Figure 4. String soak times

The observers also reported the pounds of fish landed by species. Figure 5 plots the pounds of fish landed per haul over time. The Experimental Fishery trips landed an average of 483 pounds of fish per haul (SD=417) in November and 280 lbs/haul (SD=274) in December, with 99,621 lbs landed in total. The Experimental Fishery appears to have a similiar fishing power in terms of its ability to catch similiar amounts of fish as un-pingered nets in previous years (Table 2). Of the trips observed in the Experimental Fishery, cod represented the dominate species caught on 180 trips and totaled 44,855 lbs. Pollock, spiny dogfish and monkfish were the only other species of any significance (see Summary Appendix A.).

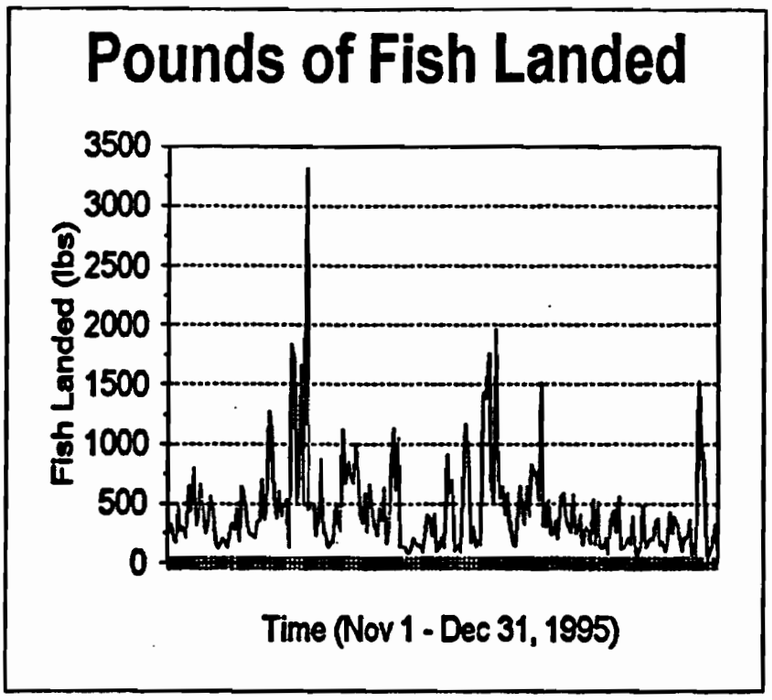


Figure 5. Pounds of fish landed per haul

| | Experimental Fishery Lbs Fish/Haul | 1990-1994 Z-Band Lbs Fish/Haul |
|---|---|---|
| November | 483.3 | 403.9 |
| December | 280.0 | 261.2 |

Table 2. Fish catch per haul in the Experimental Fishery and previous years average.

The observers were also asked to keep track of lost or damaged gear and its monetary value (communicated through the Skipper). On these trips there were 32 pingers and 30 nets lost along with various hifliers, polyballs and anchors. However, 16 of the nets and 16 of the pingers were lost with a single lost string (an uncommon event). The remaining 16 pingers and 15 nets were lost one at a time in separate events and seemingly in line with the normal attrition seen during the fishery. Hence the addition of the pingers did not appear to cause any increase in the likelihood of lost or damaged gear and have not proven themselves to be a burden to the fishery.

## Summary Appendix A.

# Fall 1995 Experimental Fishery
# Summary Statistics Observed Trips

| | | |
|---|---|---|
| Total number of trips reported, observed and unobserved: (Probably missing some December Trips) | | 134 |
| Number of observed trips | | 64 |
| Percent Coverage (obviously will change with added trips) | | 48% |
| Number of observed hauls | | 225 |
| Number of observed takes | Harbor porpoise | 0 |
| | Harbor seal | 1 |
| Number of reported takes | | 0 |
| Number of predicted harbor porpoise takes (See attached analysis for details) | | 6.32 |
| Average depth fished | | 34 fms |
| Average soak duration | | 48 hours |
| Average lbs fish landed (total 99,621 lbs) | | 442.76 lbs/haul |

Fish catch composition dominate species/trip

| species | Lbs (total) | No. Trips |
|---|---|---|
| Cod | 44,855 | 180 |
| Pollock | 4586 | 19 |
| Monk | 6898 | 14 |
| Spiny Dog | 8300 | 12 |

Gear Lost (16 on one lost string, 16 others with one here and two there)

32 pingers
30 nets
1 whole string
Various balls/hiflyers

# A Field Test of the Use of Acoustic Alarms to Reduce Incidental Mortality of Harbor Porpoises in Gill Nets

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DRAFT FINAL REPORT
April 20 1995

**Abstract:** We conducted a large-scale field test of the effectiveness of acoustic alarms in reducing the incidental catch of harbor porpoises in sink gill nets in the Gulf of Maine. Between October and December, 1994, 15 commercial fishermen set strings of experimental gill nets in an area where large numbers of porpoises were known to be taken. Each string of net was comprised of 12 nets and had either 13 active or 13 control (non-functional) alarms; the active alarms were operative only when submersed in sea water. The alarms produced a broad-band signal centered at 10 kHz, with a source level of 132 dB re 1 micropascal @ 1 m, although there was considerable variation both between and within alarms. Active and control treatments were assigned randomly to strings and placed on the nets by on-board observers; neither fishermen nor observers were aware of which type of alarms were placed on each string. Twenty-five porpoises were taken in 421 control strings and only two porpoises were taken in 423 active strings; no differences were observed in catches of target species or in the frequency with which the catch was damaged by seals. The difference in porpoise catch was highly significant, even after correcting for varying soak times, indicating that alarms are effective in reducing the entanglement rate of harbor porpoises in this area. We do not yet understand why the alarms produced such a dramatic result, but suggest that they may be a useful part of a general strategy to reduce the number of porpoises killed in gill nets each year in the Gulf of Maine.

## Introduction

Incidental catches in commercial fisheries pose a serious threat to several species of small cetaceans (Perrin et al. 1994). In particular, coastal species that inhabit areas of intensive fishing activity may be at risk from such interactions. One species of particular concern is the harbor porpoise, *Phocoena phocoena*, a small odontocete that inhabits coastal waters of the temperate northern hemisphere. Harbor porpoises are killed in a variety of fisheries, but most incidental mortality occurs in sink gill nets, static fishing devices that are designed to catch bottom-dwelling fish in near-shore waters (Jefferson and Curry 1994).

In the Gulf of Maine, harbor porpoises have been subject to a significant level of incidental mortality in sink gill nets for several decades. These gill nets are used to target demersal fish species, primarily cod (*Gadus morhua*) and pollock (*Pollachius virens*). Recent studies by the U.S. National Marine Fisheries Service (NMFS) suggest that such catches may account for more than 5% of the estimated abundance of this population in some years (Read et al. 1993; Anonymous 1994). There is still considerable uncertainty regarding parts of this assessment (Palka 1994), but there is general agreement that this level of mortality should be reduced (IWC 1992). In response to these incidental catches, several environmental groups filed a petition to list the Gulf of Maine harbor porpoise population as 'Threatened' under the U.S. Endangered Species Act (ESA); this petition is still under consideration (NMFS 1993).

The New England Fishery Management Council (NEFMC) has focused efforts at mitigating this problem by identifying areas and times in which the risk of

incidental mortality is high. These areas are closed to sink gill nets to reduce the annual incidental mortality of porpoises. At the present time, three seasonal closures exist in the Gulf of Maine. Due to the restriction and displacement of fishing effort, the fishing community views these closures, and the threat of further sanctions under the ESA, as significant threats to the future of the sink gill net fishery in New England.

In response to this situation, the fishing community developed an alternative approach to mitigating the incidental mortality of porpoises in gill nets. This approach utilizes active acoustic alarms, or pingers, to warn harbor porpoises of the presence of sink gill nets. The use of acoustic alarms was developed by Jon Lien and colleagues (1992) who used these devices to reduce the number of collisions between humpback whales (*Megaptera novaeangliae*) and fishing gear in Newfoundland. Sink gill net fishermen in New Hampshire worked with Lien to adapt these devices to sink gill nets and conducted two preliminary trials in the autumns of 1992 and 1993 (Lien et al.1995). The results of these trials were promising, but inconclusive.

In response to the preliminary work conducted in New Hampshire, NMFS convened a panel of experts in June 1994 to review the results of the 1992 and 1993 experiments and to assess whether or not there was any indication that the use of these acoustic devices reduced the entanglement rate of harbor porpoises. In general, the scientific community has been skeptical about the utility of acoustic alarms to reduce the incidental mortality of small cetaceans in gill net fisheries (Au and Jones 1991; Dawson 1994; Jefferson and Curry 1994). Attempts to use acoustic deterrents to reduce conflicts between pinnipeds and fisheries have been unsuccessful (Mate and Harvey 1986) and most experiments using acoustic alarms and other noise generators have not yielded significant reductions in by-catch rates of cetaceans (Jefferson and Curry 1994). The NMFS panel concluded that the New Hampshire experiments had been of limited value due to their low statistical power, which was caused by problems of statistical design, implementation, and the small number of harbor porpoise entanglements (NMFS 1994). The panel also concluded, however, that more exploration of the use of acoustic alarms was warranted, but that future experiments would require a sound design and a significant increase in sampling effort. Finally, the panel laid out a set of experimental criteria that should be followed in future work.

In this report, we describe the results of a large-scale field experiment of the effectiveness of acoustic alarms in reducing incidental mortality of harbor porpoises in sink gill nets. The experiment was conducted off the coast of New Hampshire in autumn 1994, using a design that conformed with the recommendations of the NMFS scientific review panel. The NEFMC and NMFS agreed to allow the experiment to take place in one of the three areas closed to sink gill nets, where the incidental catch rates of harbor porpoises were known to be high. Our objective was to conduct a definitive experiment that would provide a conclusive test of the effectiveness of these acoustic alarms.

## Methods

### Experimental Design

Prior to the initiation of field trials, we conducted an analysis of the statistical power required to detect a significant reduction in porpoise mortality using acoustic alarms. In this analysis we examined the effects of: (i) variation in the number of vessels participating in the experiment; (ii) variation in the by-catch rates of harbor porpoises using data from previous years; and (iii) various potential reductions in the by-catch rate due to the use of acoustic alarms. From this analysis, we concluded that with 15 participating vessels, we would be able to detect a 50% reduction in porpoise by-catches, given the range of by-catch rates observed in previous years.

Fifteen sink gill net fishermen from the coasts of New Hampshire and southern Maine agreed to participate in the experiment. Following the recommendations of the NMFS panel, the fishermen agreed to restrict their gear and fishing practices to certain design constraints. All fishing in the experiment, therefore, was conducted with strings of 12 nets tied together, with each net 300 feet in length, approximately 12 feet in depth, and with a stretched mesh of 6 or 6.5 inches. Whenever possible, the strings were soaked for 24 hours and retrieved each day. Fishermen agreed to set strings at least 300 feet apart to minimize the potential for any confounding effects between control and active gear. In practice, most strings were set in excess of 600 feet apart.

The experiment began on October 18 and lasted until December 15 1994. Most fishing took place on or near Jeffreys Ledge, off the coast of New Hampshire (Fig. 1). Observers were placed on each vessel, and were provided by the Manomet Observatory under contract to NMFS. The observers were rotated from vessel to vessel throughout the course of the experiment and collected data on the number of porpoises captured, the location, water depth and configuration of each string of nets, the duration of soak time, and a series of other observations. Fishermen estimated the weight of each species of fish caught in a string and reported whether or not any of the target fish species in a string had been damaged by seal predation.

Two types of alarms were used in the experiment: Both types were outwardly identical, but one (active alarm) produced an acoustic alarm and the other (control alarm) was silent. Active devices were equipped with a switch that triggered the alarm upon complete immersion in salt water. The acoustic characteristics of active alarms are described below. Each alarm was coded with a number that allowed us to track battery life, losses, malfunctions, and the identity of alarms in the vicinity of porpoise by-catches. The codes were sufficiently cryptic that neither the fishermen nor our colleagues (including several of the P.I.s) were able to break them during the course of the experiment.

Alarms were attached to the head rope of gill net strings in small lobster bait bags. The alarms were placed at the end of each string and at each bridle, where

individual nets were attached to each other. Thus, each string had 13 alarms, each placed 300 feet apart. Each string was equipped with either a set of active alarms or a set of control alarms, so we refer to 'active strings' and "control strings' throughout the remainder of this report.

The choice of active or control alarms for each string was made with a coin toss by the experiment coordinator the day before the string was retrieved and reset. Observers carried a new set of dry alarms aboard the vessel each day and replaced the alarms on strings of nets as they were retrieved. All alarms were changed on a string each time it was retrieved. Neither the observers nor the fishermen knew which alarms were active or which were controls before the string was set.

To maintain the double blind feature of the experiment, alarms were tested and dried by the coordinator each time they were returned to shore, to eliminate the potential for sporadic triggering of active alarms. Active alarms were triggered when fully immersed, usually about 20 to 30 feet behind the boat while the vessel was underway and the net was sliding over the stern. Under such conditions, the alarms were not audible from the vessel. Wet alarms were sometimes still emitting sound as they came on board, but the subsequent set of alarms was independent of the prior set, so a fishermen could not predict which type of alarm would be attached to the next string. The coordinator rotated sets of alarms so that no fishermen would see the same set of numbered alarms during any month of the experiment. In addition, the high frequency of the alarms (see below) and the noise of the vessel made it extremely difficult to hear the alarms during net retrieval. Thus, fishermen were unable to differentiate between active and control strings and could not bias the location or depths at which the two types of strings were set.

Fishermen and observers attempted to retrieve all entangled porpoises; these carcasses were brought back to shore and examined in detailed necropsies at the NMFS Northeast Fisheries Science Center, Woods Hole, following the protocol described in Nicolas (1993). The stomach contents of these animals were examined using the methods of Recchia and Read (1989).

Design of Alarms

Alarms were designed to our specifications by the Dukane Corporation of St. Charles, IL. Active alarms emitted a broad-band signal centered at 10 kHz, with a source level of 132 dB re 1 micropascal @ 1 m. This frequency is well within the hearing range of harbor porpoises, which exhibit peak sensitivity from 4 to 40 kHz and responses up to 140 kHz (Andersen 1970) and harbor seals (Mohl, 1968). The alarms produced a signal that, on average, lasted for 300 ms and was repeated every 4 s. The sound source levels were chosen to be audible at 15 dB above ambient at 100 m (the length of one net) and to drop to ambient levels at 300 m. Ambient sound levels in the Jeffreys Ledge area are estimated to range from 110-118 dB from measurements made over the last two years by Univ. of New Hampshire Ocean Engineering researchers.

Immediately after delivery, a random sample of 25 active alarms were tested at the Ocean Engineering Facility at the University of New Hampshire. These tests included analyses of the waveform, pulse length, inter-pulse interval, and sound pressure level vs frequency of the alarms. The beam pattern was also examined for a single alarm. Several alarms were also tested to monitor changes in sound pressure levels vs frequency as the batteries weakened over time. During the experiment, active alarms on either side of a porpoise entanglement were tested in the laboratory for the same parameters. Testing was performed with an ITC 6050c hydrophone, an Ithaco electronic filter (model 4113) with a high pass at 500 Hz and 80 kHz low pass, and a Nicolet 320 oscilloscope. Analysis of the signals was conducted on a laptop computer using Waveform™ software.

A Statistical Model of Porpoise Catches

In our statistical model of the effect of alarms on porpoise catches, $Y_{it}$ is the number of strings of type $i$ (control or active) and soak time $t$ (1, 2,... 6 days) that caught at least one porpoise. $Y_{it}$ has a binomial distribution with parameters $n_{it}$ (the total number of strings of type $i$ and soak time $t$) and $p_{it}$ (the probability that a string of type $i$ and soak time $t$ catches at least one porpoise). The simplest model for $p_{it}$ is:

$$p_{it} = 1 - (1 - p_i)^t$$

This model is appropriate if each day of soak time constitutes an independent trial with catch probability $p_i$.

In the first part of our analysis we tested the null hypothesis $H_o$: $p_{active} = p_{control}$, that is that the two types of strings had the same probability of catching at least one porpoise each day, against the general alternative hypothesis ($H_1$) that the two probabilities were not equal. We performed a likelihood ratio test of $H_o$, in which the model was fit by maximized log-likelihoods under both $H_o$ and $H_1$ (Silvey, 1970). The test statistic was taken to be minus twice the difference in the maximum log-likelihoods. Under $H_o$, this quantity has an approximate chi-squared distribution with 1 degree of freedom.

We also tested the goodness-of-fit of the model using a parametric bootstrap. The parametric bootstrap was used because the $\chi^2$ approximation to the distribution of the liklihood ratio statistic is not adequate in small samples. This was only performed for control strings, since the number of porpoise taken in the alarm strings was too small. The test statistic was the maximized log-likelihood. A total of 1,000 data sets were simulated from the fitted model. The model was then re-fitted to each of these data sets and the maximum log-likelihood was found. We used the same model and analytical procedures to compare the frequency of damage to the catch caused by seals in control and active strings.

## Results

### Fishing Practices & Catches

During the course of the experiment, 421 active strings and 423 control strings were set and retrieved. Each of these strings was comprised of 12 nets. Active and control strings were set in similar water depths and locations (Fig. 1 and Table 1). Both types of strings were fished for varying periods, although mean soak times were similar (Table 1). Strings were usually fished for intervals of approximately 24 hours, so it was possible to categorize the data into soak times of whole days, using cut-points of 36, 60, 84, 108, and 132+ hours (Fig. 2).

Fishing effort, measured by the total numbers of strings hauled per week, declined over the course of the experiment (Fig. 3). Catches of cod declined from October to December in both control and active strings, but pollock catches rose from low levels in October and November to a maximum in December (Fig. 4).

Control and active strings captured similar quantities of cod ($t$ = -0.43, p = 0.66) and pollock ($t$ = 0.23, $p$ = 0.82) (Table 2). The catches of other commercial species were also similar in active and control strings. There was no significant effect of increased soak times on catches of cod and pollock, although both decreased with extremely long soak times (Fig. 5). We also compared by-catches of two species of smaller fish that are important harbor porpoise prey (see below): silver hake *Merluccius bilinearis* and Atlantic herring *Clupea harengus* (Table 2). Catches of silver hake were similar in control and active strings ($t$ = -1.80, $p$ = 0.08). Herring were captured only infrequently (n = 46 hauls), but 6.5 times more herring (in pounds) were caught in control strings than active strings ($\chi^2$ = 23.34, $p$ = 0.01).

Seals caused damage to the fish catch with similar frequency in both control and active strings (Table 2). The estimated probability of damage per day caused by seals in active strings was 0.156 and the probability of damage in control strings was 0.163; these two values were not significantly different ($\chi^2$ = 0.13, $p$ = 0.722). The goodness-of-fit test indicated that the simple model, in which each day of soak time constituted an independent trial with respect to the probability of seal damage, could not be rejected (maximum log-likelihood = -20.64, $p$ = 0.776) (Fig. 6). The frequency of damage to target species caused by seals remained at low levels for most of the experiment, but increased sharply in the last week of fishing (Fig. 7).

### Porpoise Catches

Two harbor porpoises were captured in active strings and 25 were taken in control strings (Table 1). In six control strings, two porpoises were caught in the same string; in all other cases only a single porpoise was taken. Most porpoises (19) were taken in the first three weeks of the experiment, although the last animal was taken on 13 December. Harbor seals (*Phoca vitulina*) were the only other marine mammal captured; 2 seals were taken in active strings and a single seal was caught in

a control string.

The maximum likelihood estimate of $p_{control}$, the probability of capturing at least one porpoise in a control string, was 0.025. The corresponding estimate for $p_{active}$ was 0.0027. These two values were significantly different ($\chi^2 = 15.01$, $p = 0.0001$), indicating that the probability of capturing a porpoise was greater in control than in active strings. The maximized log-likelihood was equal to -12.37. Of the 1,000 maximum log-likelihoods fitted, 575 were smaller than -12.37, so the estimated significance level was 0.575. Thus, the simple model could not be rejected, and we have no evidence for anything other than a simple effect of increasing soak time on the probability of capturing a porpoise.

Porpoises were captured uniformly in control strings (Fig. 8), with no tendency for entanglements to occur in nets at either the middle or end of a string ($p = 0.26$). The two porpoises taken in active strings were both taken in the fourth net. Porpoises were also captured randomly with respect to their placement within nets in control strings (Fig. 9); entanglements did not occur near the bridles which attach one net to another ($p = 0.69$). One of the two porpoises taken in active strings was entangled in the middle of a net (float number 26 of 50); the location of the other porpoise was not recorded.

Fishermen and observers retrieved 19 of the 27 porpoises taken during the course of the experiment. The other eight carcasses either dropped from the net (4) or were discarded (4) due to rough seas and/or a lack of space onboard the vessel. Of the 19 porpoises examined at necropsy, 14 were males, 11 of which were sexually mature based on their size and the state of testis development. All 5 females were immature. Two specimens were judged to be calves, based on their small size and the incomplete eruption of their teeth. Both porpoises taken in active strings were adult males.

Seventeen of the 19 porpoises had food remains in their stomachs. The mean mass of forestomach contents was 230 g (*SD* 284 g). At least 11 prey species were identified, but the two with the highest frequency of occurence were Atlantic herring (14 stomachs) and silver hake (10 stomachs). The presence of intact fish, flesh and bones, particularly from herring, indicated that many porpoises had been feeding just prior to entanglement. One porpoise taken in an active string had herring flesh and bones in its stomach and the other had bones and otoliths from six prey species. The porpoises were not taking cod, pollock, or other groundfish from the nets; most prey items were considerably smaller than these target species. The stomach of one porpoise, taken in a string soaked for 90 hours, contained the remains of a hagfish (*Myxine glutinosa*), known to scavenge on fish captured in gill nets.

Alarm Signals

Pulse length and intervals were consistent among all the alarms tested. The waveform of the pulse was variable and the sound pressure level (SPL) vs frequency

characteristics were highly variable. The SPL at 10 kHz varied from 105 to 139 dB (re 1 micropascal) and each alarm had a wide range of harmonic energy peaks at approximately 10 kHz intervals to 80 kHz, the upper limit of our recording system. In many cases, the SPL's of the harmonic energy peaks between 40 and 50 kHz ranged from 100 to 150 dB. Examples of the variability between alarms with fresh batteries are given in Fig. 10. As battery power decreased, the SPLs decreased slightly and the fundamental frequency declined by approximately 4 kHz (Fig. 11). The beam pattern for an average alarm is shown in Figure 12.

## Discussion

The results of this experiment demonstrate that acoustic alarms reduced the incidental catch of harbor porpoises in sink gill nets. The number of porpoises taken in strings with active alarms was approximately one order of magnitude less than the number killed in control strings. We have no reason to believe that the experimental protocol was compromised in any way; the outcome of the experiment reflects a true reduction in the porpoise catch associated with the use of alarms. The use of alarms caused no adverse effects on either targeted commercial fish catches or the frequency of damage to the catch caused by seal predation. Thus, the use of acoustic alarms appears to hold considerable promise as a mitigation measure to reduce the number of harbor porpoises killed in sink gill nets in the Gulf of Maine.

There are, however, several caveats regarding the application of these results. First, we do not understand why the alarms worked so well, because we know very little of the response of harbor porpoises to either gill nets or underwater sound. The interactions between porpoises, their prey, gill nets, and alarms is complex and needs further study (see below). This means that our ability to predict the effect of changes in the design or use of acoustic alarms in the Gulf of Maine is limited.

In addition, we do not yet know whether porpoises will habituate to the presence of alarms, thus reducing their efficiency over time. Our experiment was conducted over a short period of two months, in an area where porpoises pass through on their southerly autumn migration. It is possible that repeated exposure over long periods may reduce the effectiveness of alarms as a means of warning porpoises of the presence of gill nets.

Finally, the results of this experiment should not be extrapolated to other porpoise or dolphin species. Our results indicate that alarms are effective in reducing incidental catches of harbor porpoises in the Gulf of Maine; they *may* be worth testing for other conflicts between odontocetes and gill nets. The dynamics of these conflicts, including the method of entanglement, and hearing capabilities, social structure, feeding ecology, and social behavior of the animal, should be evaluated fully before field tests of alarms are considered. The causes and mechanisms of entanglement are extremely varied and will likely require a diverse set of solutions (Perrin et al. 1994), many of which may be simpler and less expensive than the use of acoustic alarms. Assessment of the effectiveness of alarms in other situations will

require field tests comparable to those described here, with a suitable experimental design and rigorous controls to ensure the adequacy of the test. These large-scale field trials are expensive and time-consuming and should not be entered into lightly.

As noted above, we do not understand why the use of alarms produced such a dramatic reduction in porpoise catches. The most parsimonious explanation is that porpoises responded directly to the sound produced by these devices, associated the sound with the presence of nets, and were less likely to become entangled as a result. It is also possible that the reduction in porpoise catches was an indirect effect, mediated through the behavior of their prey (see below). If the effect was direct, we suggest that the variation in the signals produced by the alarms may have been an important factor in their success. This variation was an unplanned and unexpected component of the experiment. It is conceivable, given that the auditory range of harbor porpoises reaches up to 130-140 kHz (Andersen 1970), that the porpoises detected and responded to high-frequency harmonic components of the alarm signal. It is also possible that the combined broadband transmission of sound across a wide range of frequencies was the effective feature of the alarms. In addition, the acoustic features of the alarms varied over the battery life of the devices, providing an additional source of variation. Finally, the experimental randomization of control and active strings ensured that different suites of signals were placed in different locations each day. Taken together, therefore, these disparate sources of variation ensured that porpoises were exposed to a highly variable suite of acoustic signals that were associated with the presence of gill nets during the experiment.

Studies of porpoises in a controlled setting lend support to the concept that variation in sound production may be effective in alerting porpoises to the presence of nets. Kastelein et al. (1995) monitored the responses of two captive harbor porpoises to two alarms, both with a fundamental frequency of 2.5 kHz and source levels of 15 to 119 dB re 1 micropascal. The harmonic components of the two alarms were very different. The two porpoises reacted strongly and adversely to one alarm which had a great deal of energy in the harmonics. In contrast, the porpoises approached and investigated the other alarm, which emitted little energy above the fundamental frequency.

Although only 5.5% of the hauls caught herring, the reduction in porpoise catches in active strings may have been partly affected by the behavior of herring, the primary prey of harbor porpoises in the Gulf of Maine (Recchia and Read 1989). Atlantic herring were the only fish species to show a significant difference in catch rate between active and control strings, with fewer herring taken in strings with active alarms. Clupeoid fishes have an unusual capacity for high-frequency hearing (Dunning et al. 1992; Nestler et al. 1992), due to their unique auditory morphology (Popper and Platt 1979). Herring are sensitive to frequencies up to 10 kHz (Enger 1967; Schwarz and Greer 1984), the fundamental frequency of the alarms used in this experiment. It is possible, therefore, that the herring reacted to the alarms by avoiding the nets, thus reducing the potential for porpoises to become entangled while attempting to capture prey. The analysis of stomach contents of entangled porpoises

indicates that the animals were actively feeding on herring just prior to entanglement. Herring is the primary prey of harbor porpoises throughout the Gulf of Maine, so the reduction in porpoise catches due to the use of alarms demonstrated in this experiment should hold throughout this area, even if the effect is mediated through this predator-prey interaction. Few other fishes have the capacity to hear at such high frequencies, however, so alarms might not be as effective if porpoises are foraging on other fishes in the vicinity of gill nets.

It is clear that considerable research is required before we understand the mechanism or mechanisms responsible for the reduction in porpoise catches brought about by the use of acoustic alarms. Experiments conducted under controlled conditions, such as those performed by Kastelein et al. (1995) should be conducted to determine the dynamics of interaction between porpoises, their prey, alarms and gill nets. In such settings, it is possible to test hypotheses about the reaction of porpoises and herring to alarms and the potential for entanglement when predators are foraging on prey in the vicinity of nets. It would also be invaluable to make observations of the behavior of wild porpoises foraging around gill nets. To date, logistical difficulties have prevented researchers from making such observations, but they are critical if we are to fully understand the reasons porpoises become entangled in these nets so frequently.

The rich data base compiled during the course of the experiment suggests another simple means of reducing the incidental catch of harbor porpoises in the Gulf of Maine, in addition to the use of acoustic alarms. Fish catches do not increase with increased soak time and, in fact, decrease dramatically with soak times of more than five days (Fig. 5). The probability of catching a porpoise increases each day a string is left in the water. For example, porpoises were captured in three of seven control strings that were soaked for more than five days. Thus, strings with very long soak times have a high probability of catching a porpoise, but yield small catches, which are often of poor quality. Reducing the incidence of these extremely long soak times would decrease the number of porpoises taken, without affecting the economic return from the fishery.

Our results indicate that acoustic alarms will be effective in reducing the incidental catch of harbor porpoises in the sink gill net fishery of the Gulf of Maine. To ensure this reduction is as effective as possible, we recommend that alarms be used in conjunction with existing area closures. Fishermen who use alarms and agree to carry observers should be allowed to fish within closed areas and those who do not should be excluded and required to fish elsewhere. The closures should be expanded in both space and time to minimize the incidental catch of porpoises in nets that are not equipped with alarms. Monitoring should continue through the existing NMFS observer program, which will provide an ongoing test of the effectiveness of alarms and a means of detecting any effects of habituation or changes in seal predation over time. Compliance with the use of alarms can be monitored either at dockside or in routine enforcement at sea.

A final issue is the manufacturing standards that will be required for alarm devices. In the absence of better information, we provisionally recommend that alarms be built to specifications comparable to hose that proved effective in this experiment. These standards should include a fundamental 10 kHz pulse with a SPL of 130 dB re 1 micropascal, with an interpulse period of 4 seconds. Although we believe that harmonics may have contributed to the success of alarms in the experiment, we recommend that the sound pressure levels of the harmonics be better controlled and limited to 130 dB re 1 micropascal. Finally, fishermen will need low-maintenance alarms if they are to be effective. Therefore, we recommend that a minimum standard of 3 months of underwater life be required for commercial alarms.

These recommendations should be considered provisional for the following reasons. As additional information on the reaction of harbor porpoises to various sound frequencies and source levels is obtained, it may be possible to refine alarm signals. If habituation proves to be a problem, it may be necessary to try alternative frequencies or signal types in the future. Likewise, if seals in the Gulf of Maine learn to associate alarm signals with the presence of net-caught fish, it may be possible to shift the frequencies of alarms to levels that are out of the hearing range of these animals.

## Acknowledgments

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Table 1. Summary data from an acoustic alarm experiment conducted near Jeffreys Ledge, Gulf of Maine between October - December, 1994.

| Net Type | Number of Strings | Number of Porpoises | Strings With Porpoises | Mean Depth (m) | Mean Soak Time (h) |
|---|---|---|---|---|---|
| Active | 421 | 2 | 2 | 70.8 | 41.3 |
| Control | 423 | 25 | 19 | 71.7 | 40.9 |

Table 2. Mean fish catches (kg) per string from an acoustic alarm experiment conducted near Jeffreys Ledge, Gulf of Maine between October - December, 1994.

| Net Type | Cod | Pollock | Silver Hake | Herring | Nets With Seal Damage (%) |
|---|---|---|---|---|---|
| Active | 59.2 | 13.2 | 2.77 | 0.29 | 24.7 |
| Control | 61.0 | 12.9 | 3.57 | 1.89 | 24.6 |

**Figure Legends**

Fig. 1. The location of sink gill net retrievals off the coast of New Hampshire, October-December 1994. Gill net strings were equipped with active acoustic alarms (upper plot) or control alarms (lower plot). The 50-fathom isobath is indicated with a shaded line. Strings in which porpoises were captured are indicated with a cross.

Fig. 2. Frequency distributions of soak times for sink gill nets with active acoustic alarms (upper plot) or control alarms (lower plot).

Fig. 3. Weekly summary of fishing effort (number of strings fished) for sink gill nets with active acoustic alarms (filled squares) or control alarms (open squares), October 15 to December 15, 1994.

Fig. 4. Weekly cod and pollock catches for sink gill nets with active acoustic alarms (filled symbols) or control alarms (open symbols).

Fig. 5. Variation in catches of cod with increasing soak time for sink gill nets with active acoustic alarms (filled symbols) or control alarms (open symbols).

Fig. 6. Variation in frequency of damage to fish catch caused by seals with increasing soak time for sink gill nets with active acoustic alarms (filled symbols) or control alarms (open symbols).

Fig. 7. Weekly summary of frequency of damage to fish catch caused by seals in sink gill nets with active acoustic alarms (filled symbols) or control alarms (open symbols).

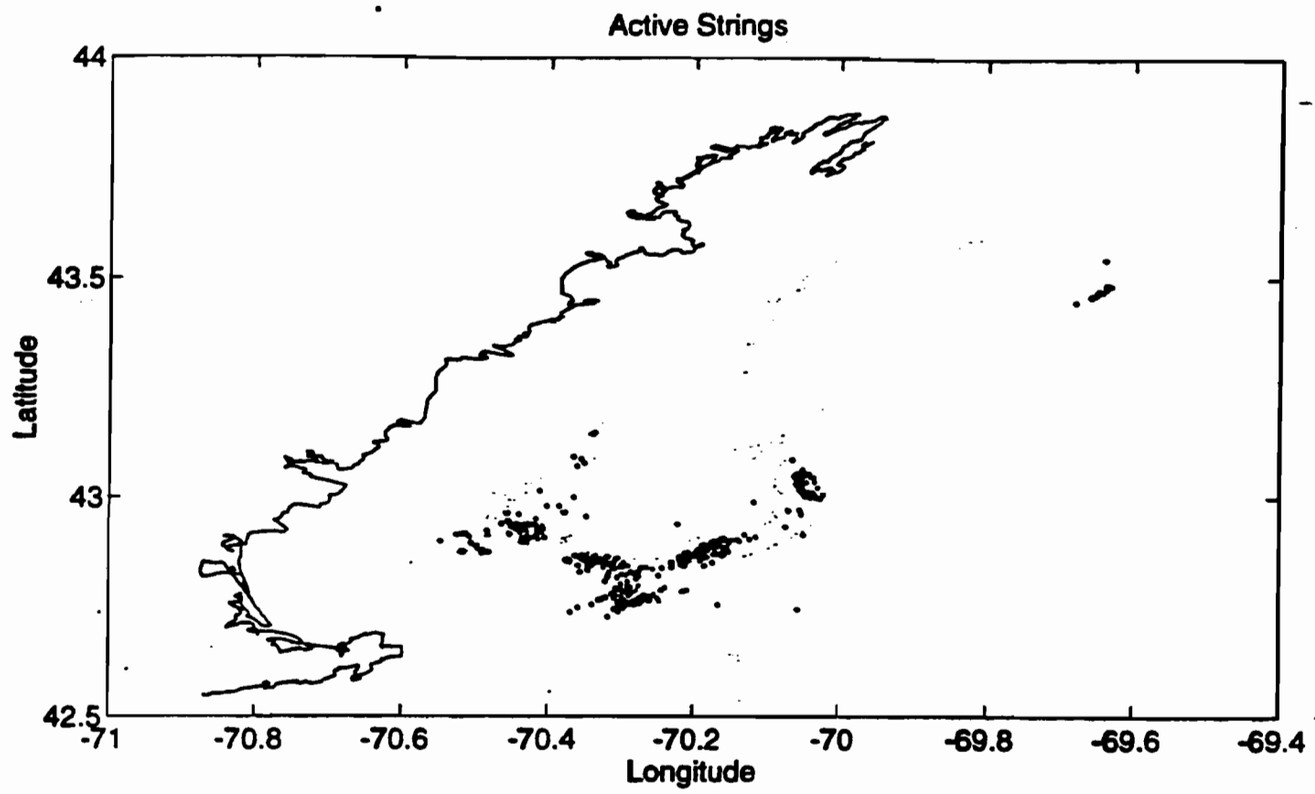
Fig. 8. Location of entanglement within strings for harbor porpoises killed in sink gill nets with active acoustic alarms or control alarms. The entanglement location of one porpoise taken in a net equipped with control alarms was not recorded.

Fig. 9. Location of entanglement within nets for harbor porpoises killed in sink gill nets with active acoustic alarms or control alarms. The entanglement location of one porpoise taken in a net equipped with active alarms was not recorded.

Fig. 10. Variation in sound pressure level and frequency characteristics of 4 randomly selected acoustic alarms tested at full battery strength.

Fig. 11. Changes in sound pressure level and frequency characteristics of 3 randomly selected acoustic alarms with decreasing battery strength.

Fig. 12. Sound transmission beam patterns for the experimental alarms.



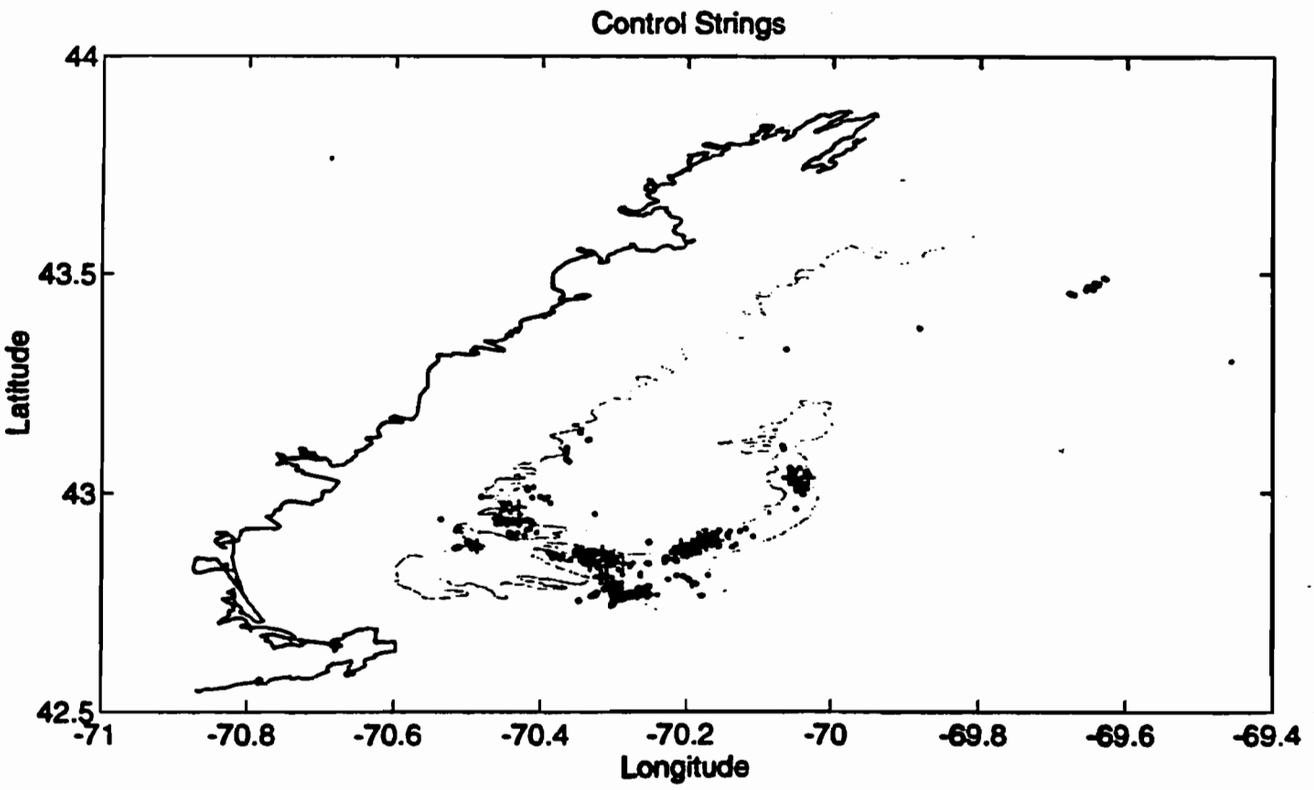
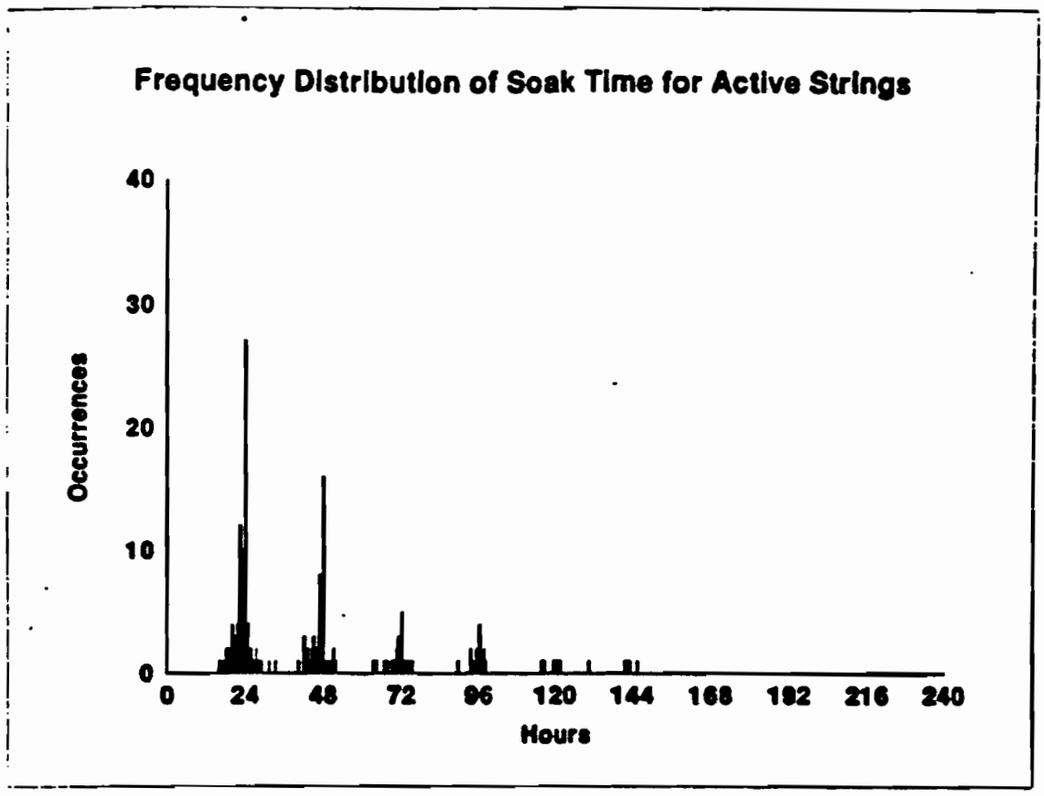




Figure 1. Locations of sink-gillnet retrievals, Oct. - Dec., 1994.



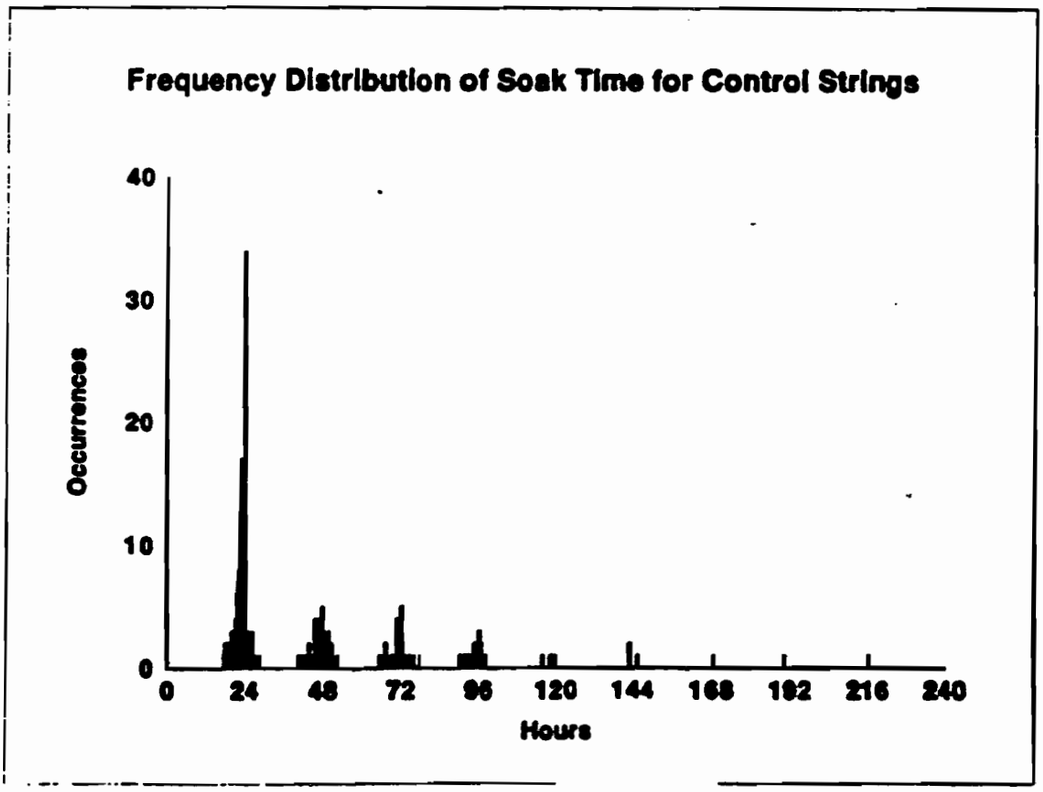




Figure 2. Frequency distributions of soak times for gillnets in the experiment.

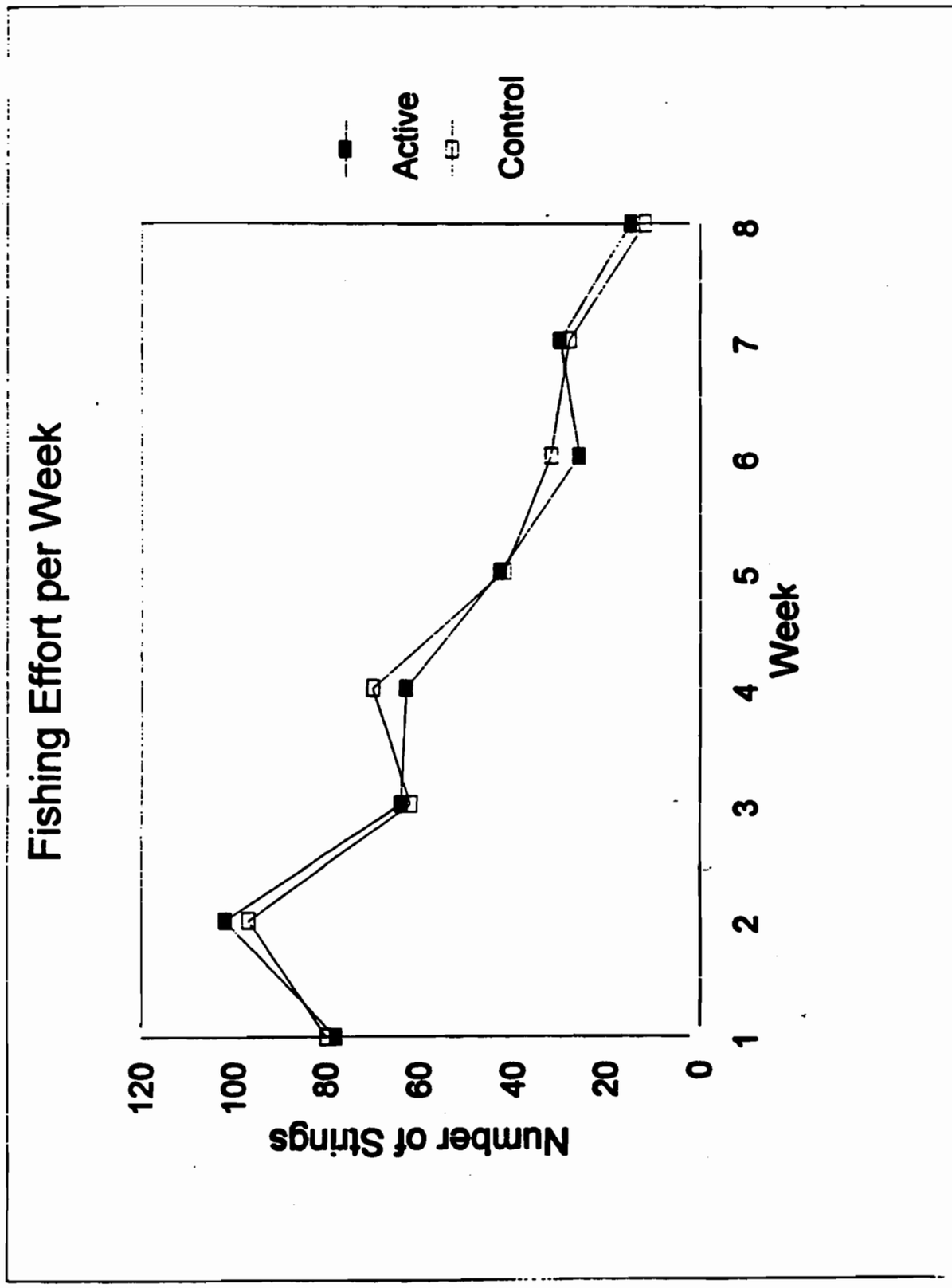



Figure 3. Fishing effort by week.

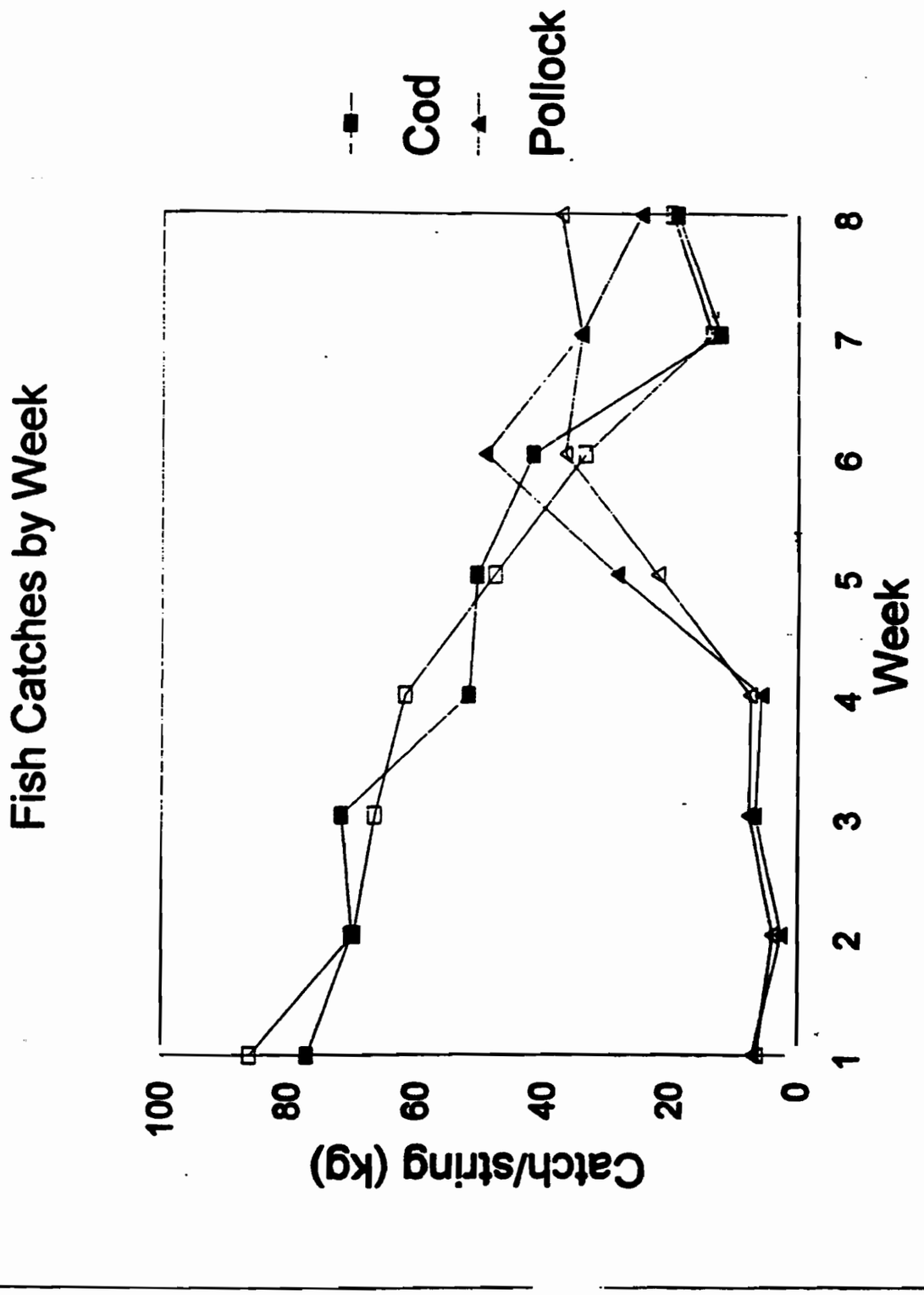



Figure 4 Fish catches by week.

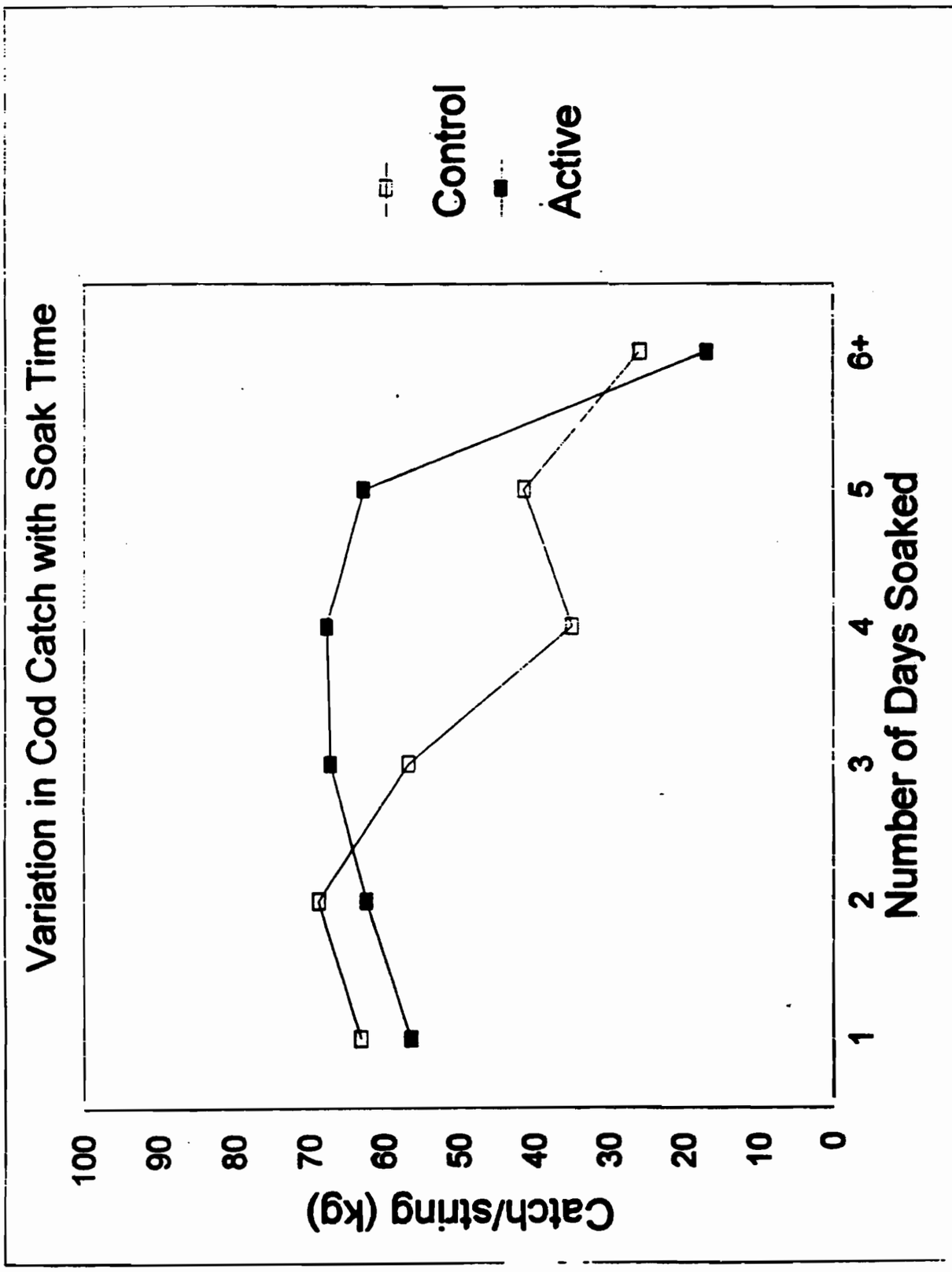



Figure 5. Variation in cod catch vs. soak time for sink gillnets.

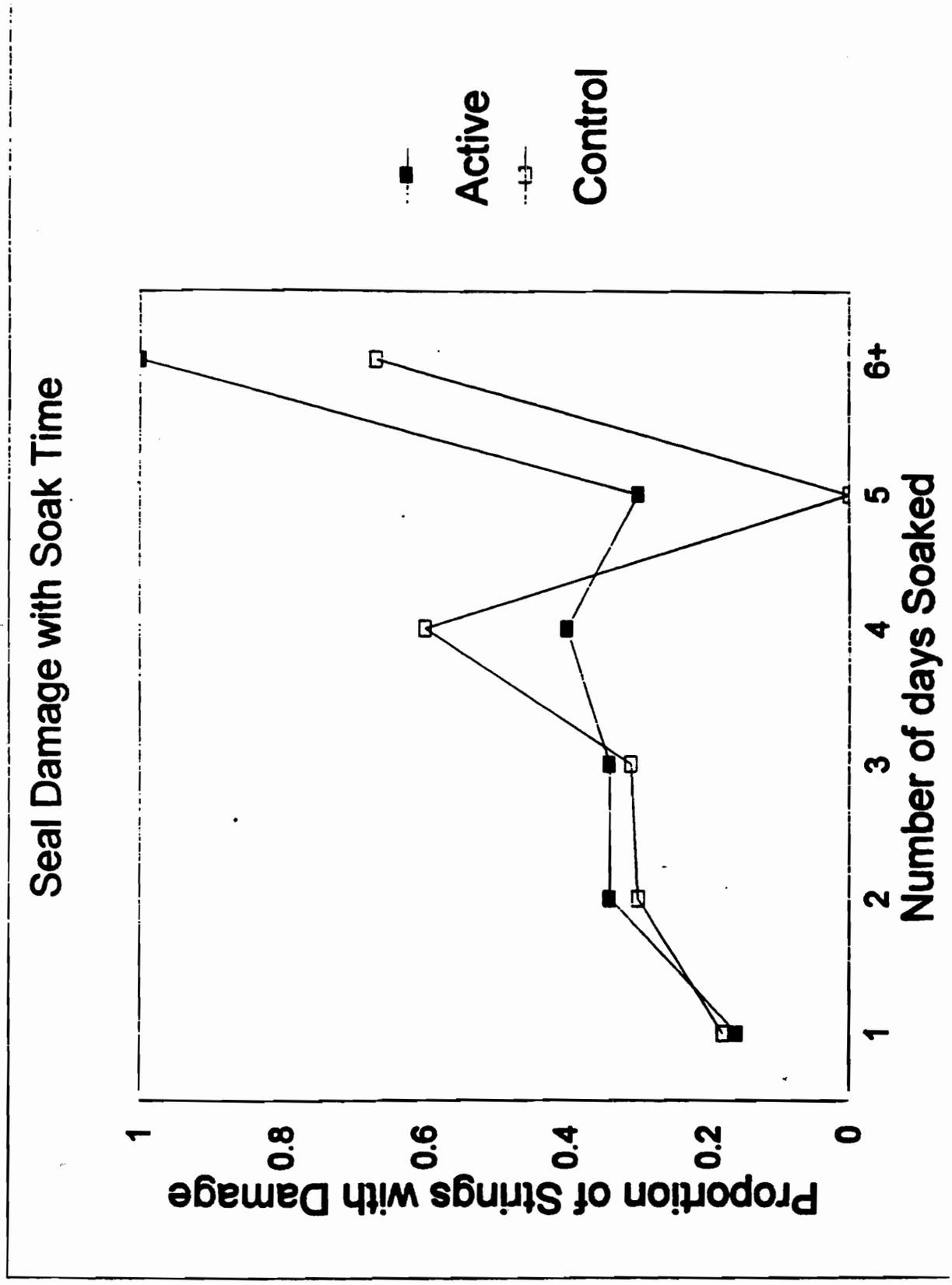



Figure 6. Variation in seal damage vs. soak time in sink gillnets.

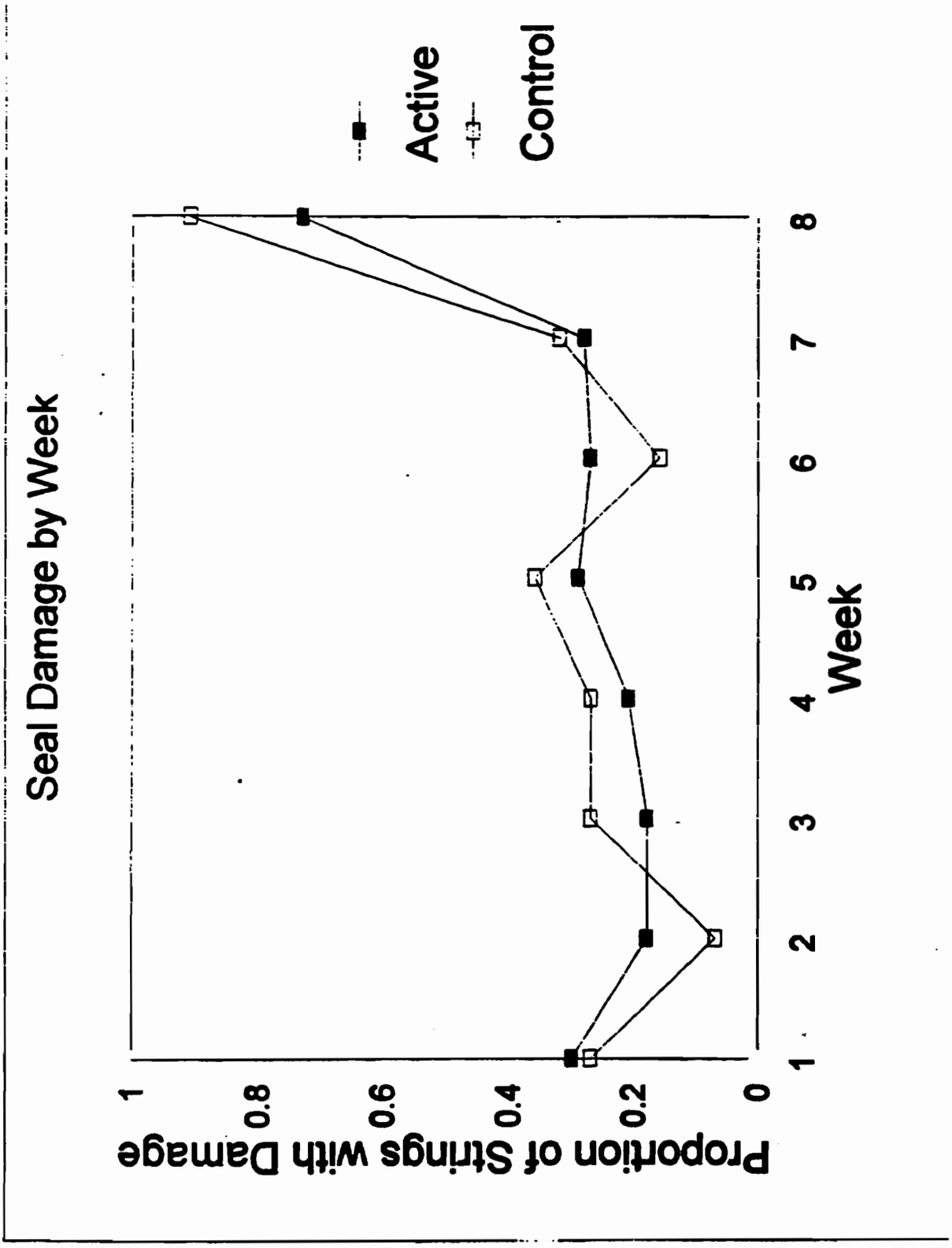



Figure 7. Weekly summary of seal damage in sink gillnets during experiment.

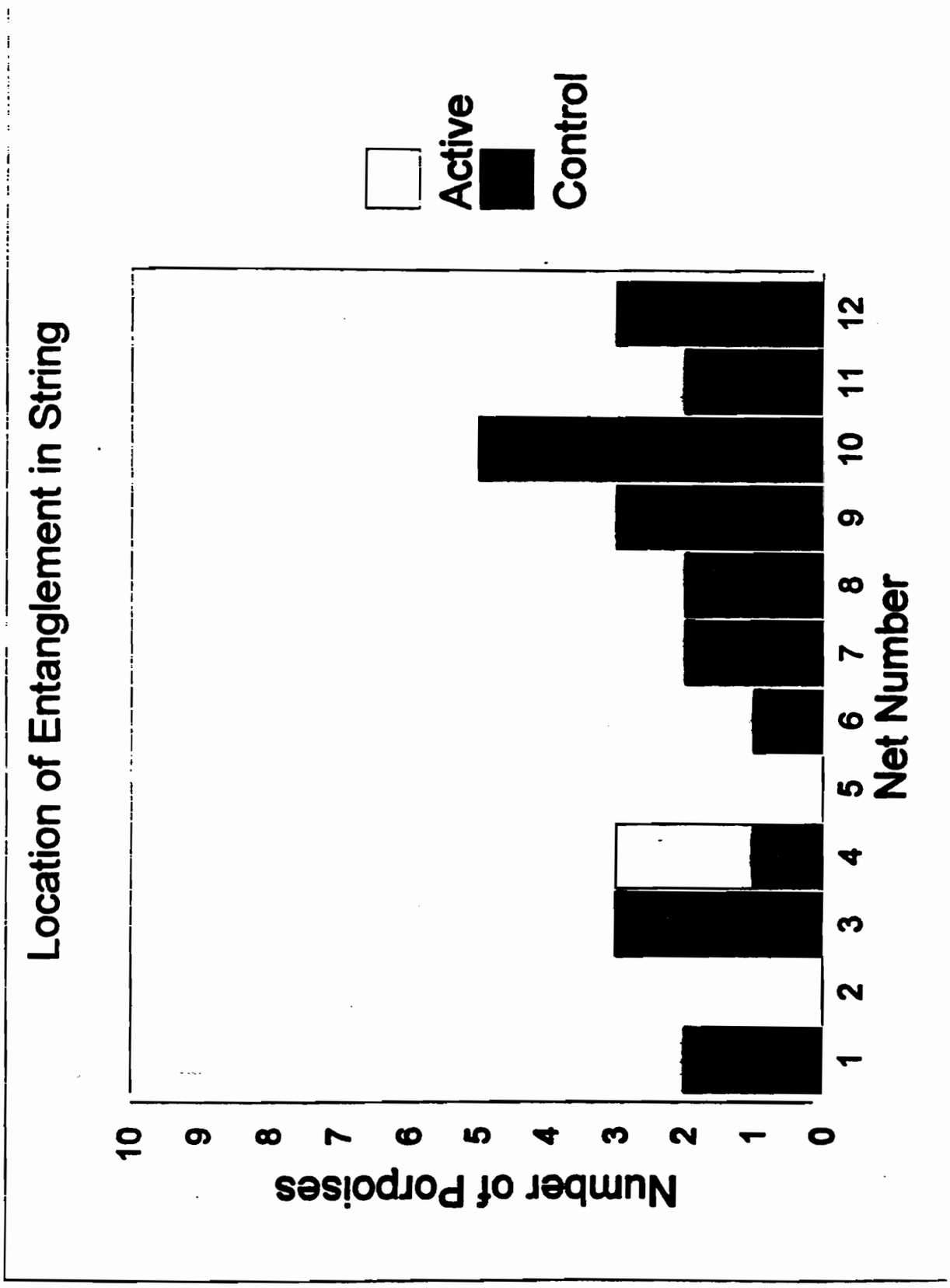



Figure 8. Location of harbor porpoise entanglements within experimental strings.

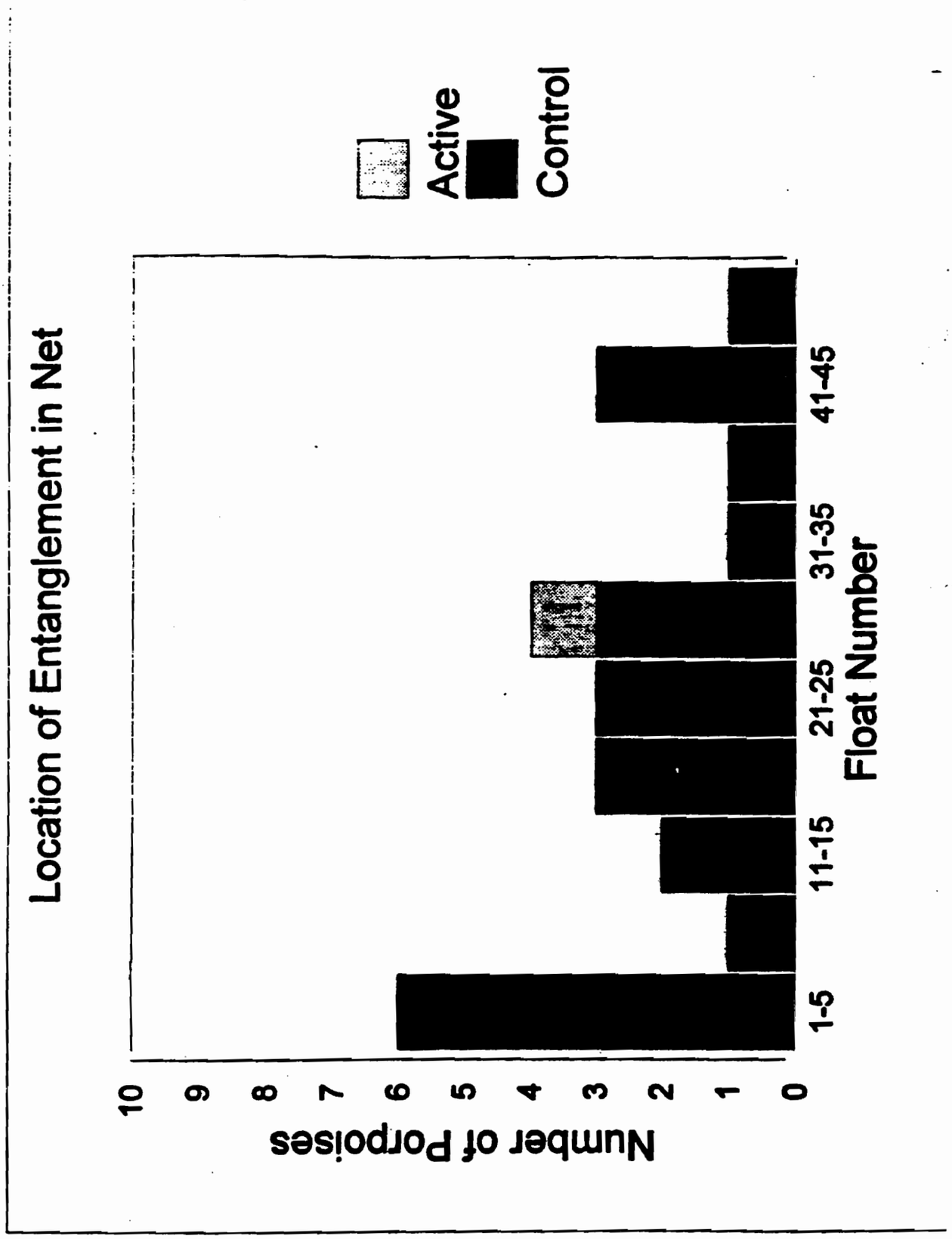
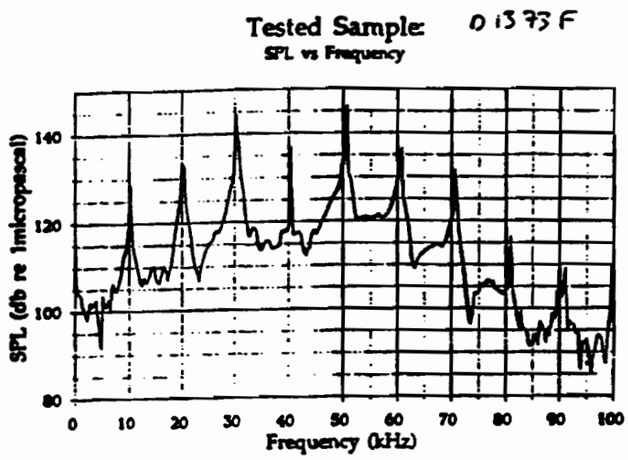
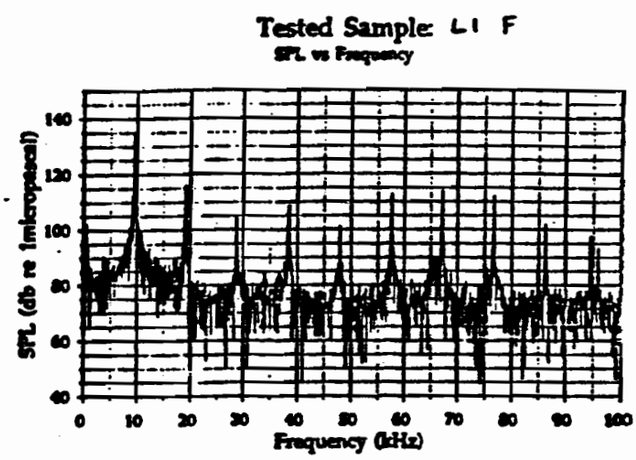
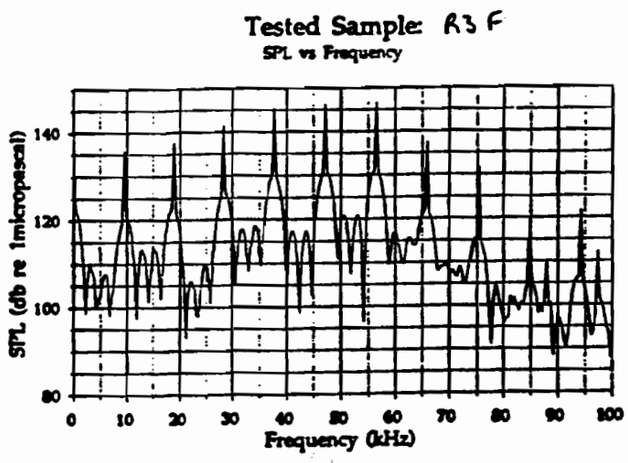



Figure 9. Location of harbor porpoise entanglements within experimental nets.



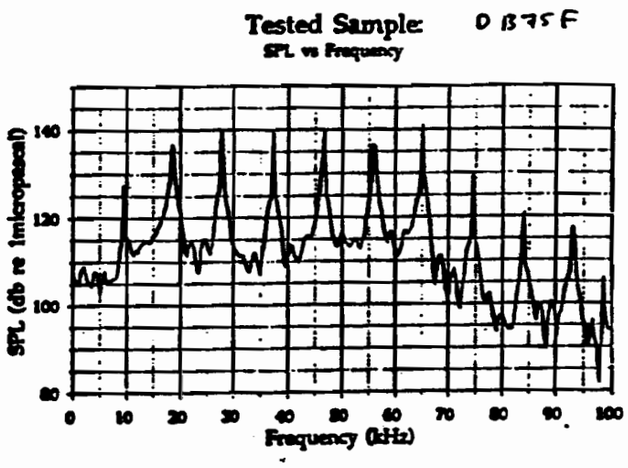




Figure 10. Variation in sound pressure levels and frequency characteristics of 4 randomly selected experimental alarms at full battery strength.

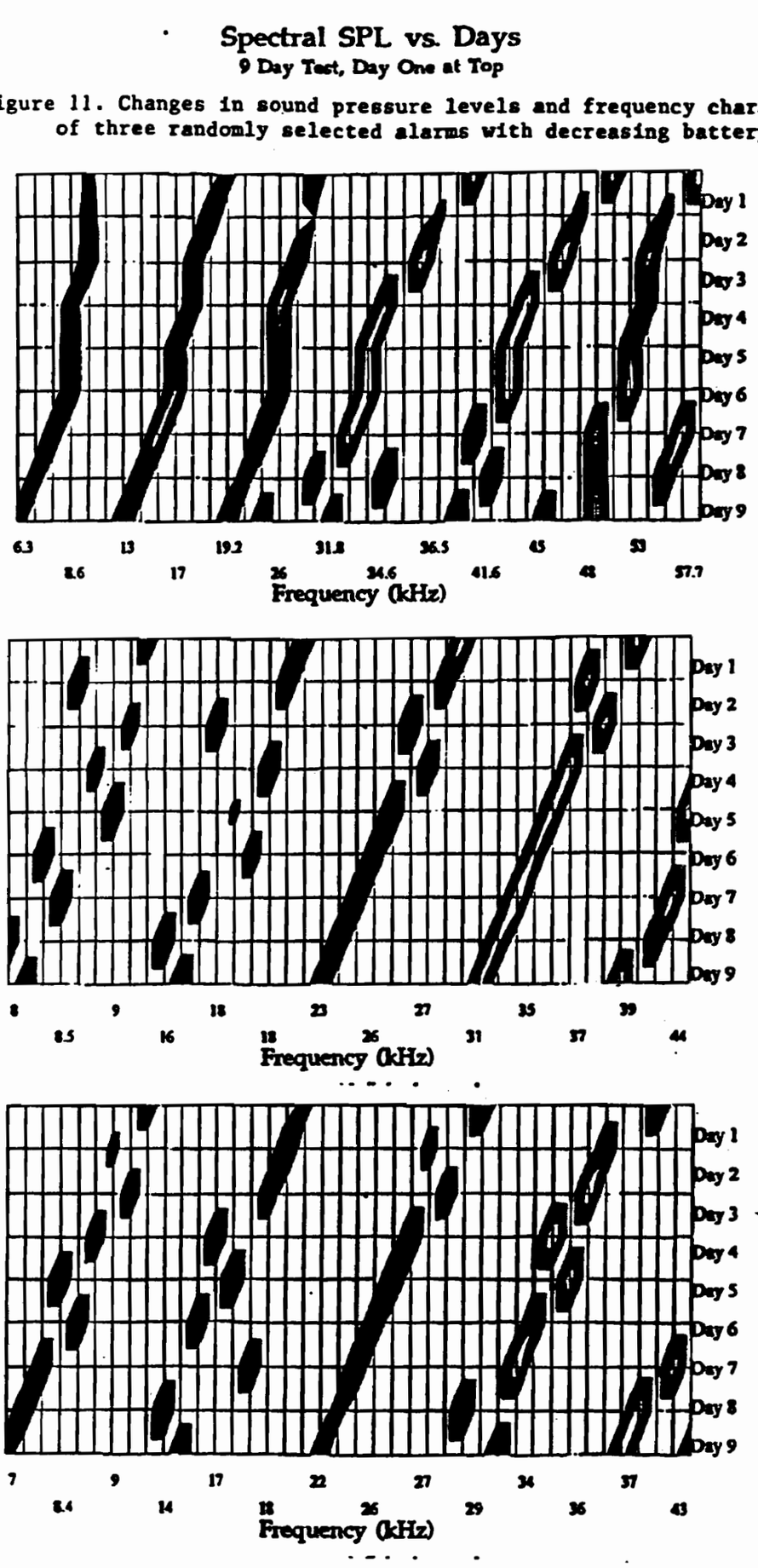



Figure 11. Changes in sound pressure levels and frequency characteristics of three randomly selected alarms with decreasing battery strength.

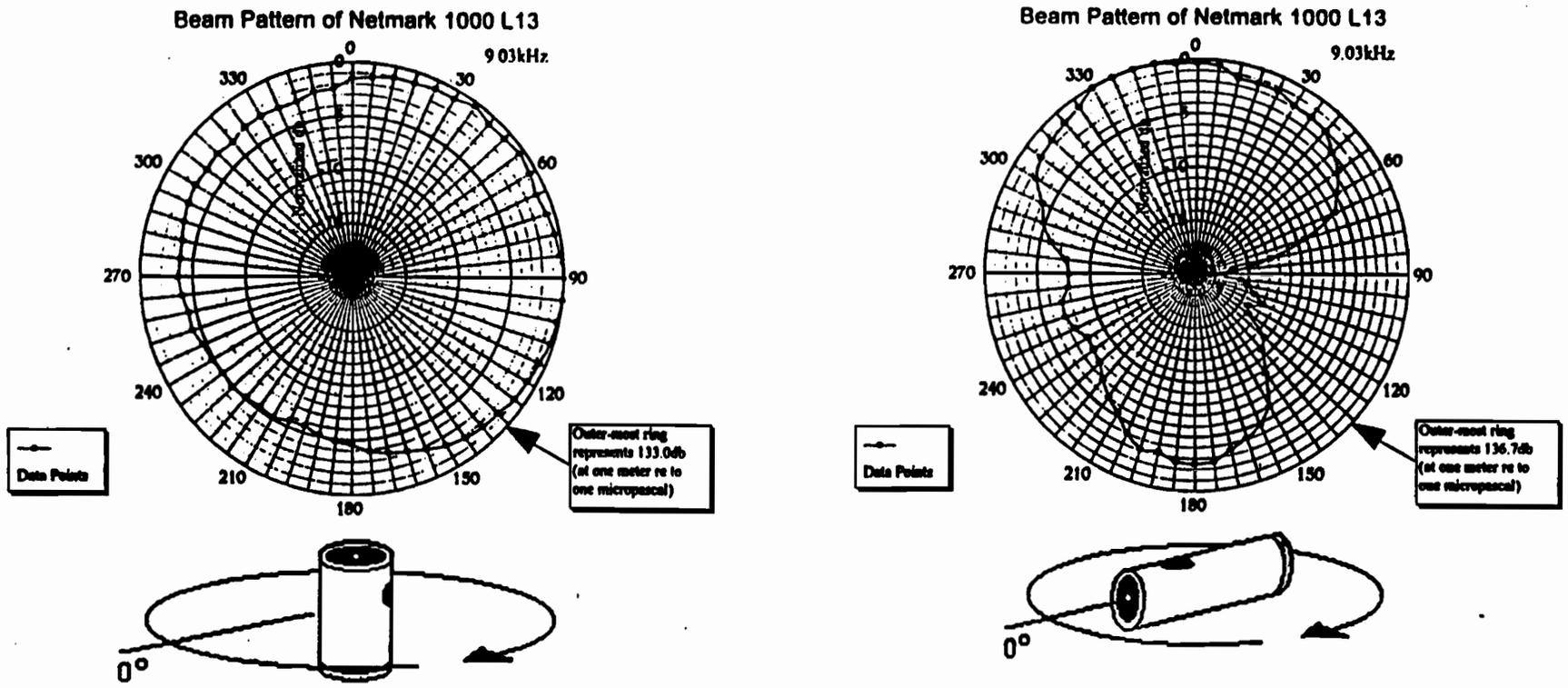



**Figure 12. Sound transmission beam pattern of experimental alarms.**

# FRAMEWORK 19
# APPENDIX III

## Section 7 Consultation Regarding Framework 15

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930

August 15, 1996

MEMORANDUM FOR: The Record

FROM: F/NE - Andrew A. Rosenberg

SUBJECT: Section 7 Consultation Regarding the Final Rule Implementing Framework Adjustment 15 to the Northeast Multispecies Fishery Management Plan

The New England Fishery Management Council (Council) has submitted Framework Adjustment 15 to the Northeast Multispecies Fishery Management Plan (FMP) to further reduce the bycatch of harbor porpoise, *Phocoena phocoena*, in the Mid-Coast component of the Gulf of Maine sink gillnet fishery. This framework extends the timing of the Mid-Coast gillnet closure area so that it now begins on September 15 instead of November 1. November and December were closed for both harbor porpoise and groundfish protection under Amendment 7, effective July 1, 1996.

The Council has also requested that the Regional Administrator consider either an experimental or operational fishery allowing or requiring, respectively, the use of pingers on gillnets from September 15-October 31. The period of September 15-October 14 has not yet been covered by an experimental fishery in the Mid-Coast area. Due to the lack of experimental data for this period, the use of pingers will be authorized under an experimental fishery from September 15-October 31. The only pingers authorized for use will be those with the sound characteristics of the device used in the 1994 experiment (Kraus, et. al. 1995) and subsequent experimental fisheries (10 kilohertz at 132 decibels re 1 micropascal at 1 meter).

Framework Adjustment 4, implemented in May 1994, established a series of three 30-day area closures designed to reduce the annual take of harbor porpoise in the Gulf of Maine sink gillnet fishery. Responding to the recommendations of its Harbor Porpoise Review Team (HPRT), the Council developed Framework Adjustment 12, which expanded the initial Mid-Coast closure in both time and area for 1995. The area was expanded to the south to cover all of the high bycatch area in a region known as the Jeffreys Ledge Band. The timing was extended by closing December in addition to November. The HPRT also raised concerns regarding high bycatch areas off southern New England and in the Mid-Coast area in the Spring and recommended that the Council address the problem in those areas. Responding to these concerns, the Council recommended, and the NMFS implemented, new closure areas in Framework Adjustment 14 (March 1996) to cover the areas south of Cape Cod off Rhode Island and Massachusetts in March (Southern New England Area) and the newly defined Mid-Coast area (as revised in Framework

12) which is closed from March 25 to April 25. Amendment 7 to the Multispecies FMP, effective July 1, 1996, implemented the three Gulf of Maine porpoise closures in Framework 12 as closures for both harbor porpoise and groundfish protection.

**Assessment of Impacts**

The action to be implemented under Framework 15 and the concurrent experimental fishery contain two potential impacts to endangered and threatened species. The first concern is that gillnet effort may be displaced into higher whale use areas during the September 15-October 31 time period. The second concern involves potential effects of introducing the pinger sound source into the lower water column in the closure area during the experimental fishery.

*Effort Displacement*

As stated in the Council's Environmental Assessment, the Mid-Coast area is not a concentration area for endangered and threatened species in the September 15-October 31 period. However, endangered whales including the northern right whale, *Eubalaena glacialis*, humpback whale, *Megaptera novaeangliae*, and finback whale, *Balaenoptera physalus*, and proposed species such as harbor porpoise, may transit the area during seasonal migrations. Entanglements of several of these species in groundfish sink gillnet gear have been documented. These impacts have been addressed in previous consultations on the Multispecies FMP. Given the known distribution of these species, gillnet effort is not likely to be displaced from the closure area into areas of higher whale or porpoise use.

Past experimental fisheries using similar acoustic deterrent devices were subject to a high level of observer coverage in which no interaction with endangered or threatened species was observed. Furthermore, allowing gillnets to operate in the closed area using acoustic deterrent devices will not increase effort beyond what has been traditional in past years under Amendment 5. Although a small number of vessels may purchase pingers and request authorization to participate in the experimental fishery, overall effort is likely to decrease. (In 1995, 13 vessels requested authorization in the Fall experimental fishery, and 6 withdrew at some point.) Therefore, the extension of the closure may be beneficial to endangered whales by reducing the threat of entanglement.

The experimental fishery will provide the agency with a value for bycatch rates with operational use of pingers during a new time period. If pingers are as effective as during the 1994 experiment (October 15-December 15), bycatch could be reduced by as much as 90%. If pingers are not as effective operationally during this period, a one-time incidence of bycatch from the small number (probably fewer than 15) of vessels likely to participate in the experimental fishery is not likely to counteract the overall expected bycatch reduction from extending the closure.

*Acoustic Disturbance Impacts*

The pinger sound source is designed to ensonify the sea water within a radius of 300 meters from each device, with the sound attenuating to 15 dB above ambient level at 100 meters. The strings of nets are deployed on or near the sea floor. There are several potential impacts from the introduction of a sound source into the habitat, including the following:

- temporary or permanent acoustic trauma
- attraction to the pingered nets which could increase entanglement threat
- displacement from areas where pingered nets are set, which could be important habitat
- habituation to the sound source which could nullify initial effectiveness in reducing entanglement threat

Little is known about adverse effects of the experimental pinger sound source on endangered and threatened species. These pingers have been in use in experimental fisheries in the Mid-Coast Area in late Fall of 1994 and 1995 and in the Spring of 1996. We have no evidence that there has been an adverse impact to endangered and threatened species from the sound source which has been introduced through the use of these pingers.

Harbor Porpoise

The pinger frequency used in the Kraus et. al. (1995) experiment and subsequent experimental fisheries was chosen to be within the hearing range of harbor porpoise. According to an unpublished report written for the agency by Dr. Darlene Ketten, a noted marine mammal hearing specialist, a sound would have to be at least 80 dB above the sensitivity threshold at a particular frequency to result in an adverse acoustic impact. Thus, according to data on harbor porpoise hearing from Anderson (1970a) presented in Richardson, et. al. (1995), the 132 dB level at a frequency of 10 kHz approaches the 80-decibel limit (at a distance of 1 meter from the device), but is not loud enough to result in acoustic trauma to harbor porpoise.

Throughout the period during which pinger use has been explored in the Mid-Coast area, no information has been collected which suggests that this particular sound source has resulted in attraction, displacement or habituation of harbor porpoise. Presumably, if the pingers attracted porpoise, the bycatch rates would have increased when the devices were used instead of decreasing by 90% as was observed in the Kraus, et. al.(1995) experiment.

Neither the experiment in 1994 nor the subsequent experimental fisheries were designed to collect information on displacement of porpoise. Although porpoise might be displaced from the area immediately surrounding a gillnet equipped with pingers, there is no evidence to support the theory that they would be displaced from the entire Jeffreys Ledge area. In a study of porpoise response to active acoustic deterrent techniques, Baldwin and Kraus (Baldwin and Kraus 1995 and Kraus, pers. comm.) reported that porpoise moved away from the immediate area of an acoustic deterrent signal (50-50.2 kHz upsweep) but did not leave the study area. It is

conceivable that an increase in bycatch levels over a period of several years during which the devices are used might indicate habituation to the devices.

Endangered Baleen Whales

No information has been collected which suggests that this particular sound source has resulted in acoustic trauma, attraction, or displacement of right, humpback, or finback whales. Less clinical information is available on the hearing ranges of the large whales than for smaller cetaceans such as harbor porpoise. However, inferences can be made based on post-mortem examination of ear structures and on frequencies of whale vocalizations.

Based on a summary of current information on baleen whale hearing in Richardson, et. al. (1995), baleen whales may be able to detect the 10 kHz pinger, but there is insufficient information to determine the decibel levels at which the various species can detect that frequency. Therefore, it is not possible to predict at this time whether this sound source is capable of causing acoustic trauma in endangered whales using the same theory as applied above for harbor porpoise. Vocalizations of greater than 10 kHz have been recorded for humpback whales in the Pacific (Silber 1986 in Richardson, et. al. 1995). If pingers are not significantly louder than vocalizations, there may not be any adverse effects. The pinger signal strength attenuates to ambient level at 300 meters, so the only whales which could be impacted are those which would approach within that radius.

*Conclusion*

We have reviewed the Council's framework adjustment document and concur with the Council's assessment that the proposed action is not likely to result in increased entanglement threat to endangered and threatened species. Based on information available at this time, we also conclude that the authorization of an experimental fishery allowing the use of gillnets (probably fewer than 15 vessels) equipped with the above-mentioned pingers during the September 15-October 31 period is not likely adversely affect endangered and threatened species. Therefore, the implementation of the final rule enacting Framework Adjustment 15 to the Northeast Multispecies Fishery Management Plan will not change the basis for our determination in the Biological Opinion issued on February 16, 1996, that the Northeast Multispecies FMP, as administered under Amendment 7, will not jeopardize the continued existence of endangered and threatened species under NMFS jurisdiction or result in adverse modification of critical habitat. Should project plans change or new information become available that changes the basis for this determination, then consultation should be reinitiated.

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cc: F/NEO1 - Jaffe
F/NEO2 - Thounhurst
GCNE - Martin
F/PR8 - Ziobro

FILE: 1514-05 (A) NEFMC - Multispecies FMP - Framework 15

**THEIR AVAILABLE BOTTOM IS LOCATED IN BLOCKS 132 & 139. SOME VESSELS MAY DISPLACE THEMSELVES OFFSHORE FOCUSING THEIR EFFORT ON CODFISH WHERE THEY WOULD HAVE NORMALLY REMAINED INSHORE FOCUSING ON FLATFISH. OTHER GILLNET DAY BOATS WITHOUT THE CAPABILITY TO GO OFF SHORE WILL BE FORCED TO TIE UP FOR THE PERIOD AS BLOCK 133 IS PRIMARILY OTTER TRAWL BOTTOM AND WOULD NOT ALLOW GILLNET ACTIVITY WITHOUT TREMENDOUS GEAR CONFLICT CONSEQUENSES.**

**3) THE UNFAIR EQUITY ISSUES THAT WOULD BE SUBJECT TO NEW HAMPSHIRE FISHERMEN WITH THE CONSIDERATION OF CLOSING BLOCKS 132 & 139 FOR THE MONTH OF MAY SHOULD BE REASON FOR THE COUNCIL TO CONSIDER A MORE BALANCED ALTERNATIVE FOR REPLACING THE DEFAULT. AS ALL FISHING PARTICIPANTS WITH INTERESTS IN THE GULF OF MAINE MUST CONTRIBUTE WITHIN THIS CLOSURE SCHEME THERE ARE MORE EQUITABLE ALTERNATIVES FOR CONSIDERATION.**

**THANK YOU FOR YOUR TIME AND CONSIDERATION.**

**RESPECTFULLY,**
**ERIK**

## AREA CLOSURE INFORMATION

**FOR THE PURPOSES OF TRYING TO PRESENT THE RAMIFICATIONS OF THE ALTERNATIVE PROPOSAL OF CLOSING BLOCKS 132 & 139 IN SUBSTITUTION TO THE DEFAULT CLOSURE THAT IS IN AMENDMENT 7, I WOULD HOPE THAT COUNCIL MEMBERS WOULD TAKE TIME TO REVIEW THE INFORMATION BELOW.**

**THE FOLLOWING INFORMATION COMPRISES LANDINGS FOR THE MONTH OF MAY 1996 FOR NEW HAMPSHIRE VESSELS WHOSE COMPLETE RANGE OF OPERATION ARE BLOCKS 132,133, & 139. THE MAKE UP OF THE FLEET IN THIS INFORMATION IS AS FOLLOWS**

**1) APPROXIMATELY 29 SMALL DAY BOAT DRAGGERS OPERATING IN ALL 3 BLOCKS.**

**2) APPROXIMATELY 12 SMALL DAY BOAT GILLNETTERS 95% OPERATING IN BLOCKS 132 & 139 AND 5% IN BLOCK 133.**

**3) THESE VESSELS LANDINGS PRINCIPLY ARE RELATED TO FISHERMEN'S CO-OPS LOCATED IN PORTSMOUTH, N.H., SEABROOK, N.H. & NEWBURYPORT, MA.**

**4) THE TOTAL CODFISH LANDINGS FOR THESE VESSELS IN THE MONTH OF MAY FOR 1996 HAS BEEN CONFIDENTLY ESTIMATED AT 377,682#s.**

**5) AS AN AVERAGE THIS WOULD REPRESENT**

**A) 297#s OF COD / DAY / VESSEL AT 31 DAYS OF EFFORT FOR THE MONTH.**

**B) 460#s OF COD / DAY / VESSEL AT 20 DAYS OF EFFORT FOR THE MONTH.**

**C) 614#s OF COD / DAY / VESSEL AT 15 DAYS OF EFFORT FOR THE MONTH.**

## REASONS NOT TO CONSIDER CLOSING BLOCKS 132 &139 FOR THE MONTH OF MAY AND CONSIDERING A MORE EQUITABLE PROPOSAL OTHER THAN THE DEFAULT.

**1) THE CLOSURE OF BLOCKS 132&139 FOR THE MONTH OF MAY WILL MORE ADVERSLY EFFECT VESSELS OUT OF NEW HAMPSHIRE. ALL SMALL DAY BOAT OTTER TRAWLS WOULD BE DISPLACED INTO BLOCK 133 WITH THE ARRAY OF OTHER OTTER TRAWL VESSELS THAT HAVE BEEN DISPLACED FROM OTHER AREAS. CONDENSING THESE VESSELS INTO THE SMALL AREA OF 133 CREATES OPERATIONAL SAFETY CONCERNS THAT THE COUNCIL SHOULD CONSIDER. THESE SMALL DAY BOATS DO NOT HAVE THE SIZE OR THE MAKE-UP TO FISH OUTSIDE THE CLOSURE.**

**2) DAY BOAT GILLNET VESSELS ARE HEAVILY DEPENDENT ON BLOCKS 132 & 139 FROM AN OPERATIONAL STAND POINT. 95% OF**

# FRAMEWORK 19
# APPENDIX IV

## Minutes of the Final Framework Meeting (9/9/96)

NEW ENGLAND FISHERY MANAGEMENT COUNCIL

FRAMEWORK COMMENTS

**Holiday Inn, Peabody, MA**
**September 9, 1996**

**Monday, September 9, 1996**

**Groundfish Committee Report - Framework 19**

Mr. Smith: I would like to welcome everyone to this special Council meeting. The primary order of business today is the two framework measures and principally Framework 19 which deals with the default. That is why we have to have this extra meeting to see if we could find an alternative area closure for the Gulf of Maine which would substitute for the November/December mid-coast closure that will automatically happen according to Amendment 7 on November 1. With that we will get into the other agenda issues after we deal with the principal one, but first I would like to recognize Erik Anderson for a moment.

Mr. Anderson: Because of an incident that took place last Thursday when three fishermen in our area were lost in a very tragic accident, I would like to have a moment of silence for them.

The Council observed a moment of silence for the three area fishermen that were lost at sea on Thursday, September 5, 1996.

Mr. Smith: It brings it back home just how difficult in lots of ways this particular form of livelihood really is.

Mr. Coates: We are addressing the Framework Adjustment 19 which is the default area closures in the Gulf of Maine which would have closed the so-called Mid-coast area to all fishing gear in November and December. As you know, we have been going over this through a subcommittee as well as through the full committee meetings. This reached a climax at the committee meeting at Woods Hole where we had assistance from the Northeast Fisheries Science Center (NEFSC) to analyze a number of options. As a result of the various options discussed, the committee agreed to recommend that areas 132 and 139 be closed during the period of May. That is the recommendation and would be the specific action under Framework Adjustment 19.

> **Mr. Coates moved on behalf of the Groundfish Committee:**
> **that the Council recommend submitting Framework 19 which would close blocks 132 an 139 for al gear types for the month of May to replace the November and December groundfish closure in the mid-coast area.**

I believe that we need to receive public comment as well today. Phil has some additional information to provide that shows the results of the various analyses.

Mr. Smith: A motion made on behalf of a committee needs no second.

Mr. Haring: I just want to briefly point out that we sent an errata memo out to Council members who received the first draft of this. It has since been corrected in all copies that have been made, pages 5 and 6 of the document. On page 5, the coordinates for the action were incorrectly given and the southern most line of latitude is 42°30'. Then on page 6, to the blocks that were included in the analysis of the Mid-coast area as it exists now, we added block 138 to the description. It was one of the blocks that was used, it just didn't get into the initial document that we were getting out in time to meet our deadlines. There were also a couple of other corrections that haven't been included in this version of the document, but fortunately it says draft on the front page. On page 1 the second paragraph says that the Council initiated this adjustment meeting on the 7th and that should read the 17th. On page 10 in the first paragraph we list the framework numbers that have been used to make modifications to the harbor porpoise closures and No. 14 should be added to that, so it is 4, 12, 14 and 15. The two lines of latitude should be 43°30 and 42°30.

We made the document available two weeks ago and was based on the Groundfish Committee meeting held at Woods Hole where we had the services of NEFSC available to us to run fairly rapid analyses of variations on the times and areas of the closures using these blocks. The objective of the committee basically was to achieve the same conservation objectives as the existing default closure while minimizing the economic cost and also dealing with some of the equity issues in terms of the distribution of those costs on different vessel categories, vessel size groups and gear types. The measurement of conservation for the purpose of this analysis and the equivalency was done based on cod landings. We are looking to achieve the same cod landings in a time and area closure as was measured in the Mid-coast area in 1993. The committee and the technical people involved in this recognized the assumptions inherent in that approach, but it is also the most expedient way of doing this and that is the way the analysis was done.

In terms of measuring the economic impacts, the total revenues generated from that area and time for all species was compared with the different proposals. In terms of the equity issues, basically moving it offshore was one of the objectives to get some of the smaller, inshore boats some grounds to fish on and also to move it to a different time of year when the price of fish is lower, therefore, you can achieve the same conservation objectives at a lower cost. Ten thousand pounds of $2 cod is worth a lot more to a fishermen then ten thousand pounds of .60 cod and therefore, you can save the ten thousand pounds of cod at a lower cost by moving it to a time when the prices are traditionally lower and the fish are more available. There was also some discussion made to moving it to a time during which spawning was

occurring as a way of getting an added benefit although the benefits of that approach are not really measurable and therefore it is a consideration but not a determining factor.

Mr. Coates: Other provisions of this, of course, is the issue of is this default closure substituted by the recommended action, and the issue of gillnets fishing in the so-called Mid-coast closure. There is still a harbor porpoise closure in effect and if you have read through the materials you received today, you know that the requested action by the Council to add the September 15 to October 31 closure for harbor porpoise protection has been approved by the Regional Director. The experiment to use pingers has also been approved. So, it is our intention to take action in conjunction with this substitute action to allow the pinger experiment to continue in November and December so the gillnet fishery could be prosecuted subject to the use of pingers.

Mr. Smith: Just so we are all clear on this, that means that the proposal now for the two blocks in May would serve as an alternative to the Mid-coast closure for November and December and would not be added.

Mr. Nelson: Phil, if you could just go over a little bit about the concern about displaced effort. We have a lot of areas that, if you closed those two blocks, that leaves a lot of area open for boats that normally would have fished there, to go elsewhere. I think we need to address whether the displaced effort by those boats are really taken into account so that the cod landings are really going to have a savings or should there be a concern that we are just focusing on a small segment that will not be able to go anywhere else. There might be an equity issue here. My concern is what about displaced effort and cod landings. We have areas in Ipswich Bay that will be open and a lot of spawning takes place during that time frame. Are we going to be targeting those spawning fish in that area?

Mr. Coates: Any seasonal area/time closure, be it a fall November/December, be it a spring/May, or whatever, if it is focussed on a relatively short time period in a relatively small area, there will always be some displacement or recoupment, whatever you might want to call it, i.e. activity that takes place where people that would otherwise be impacted, will move to other places to fish. This action, however, is based on the fact, and let's face it the concentration of codfish and we have all seen the charts, is on Jeffreys Ledge and that area. This is where the fish are mostly caught, particularly during that month of May. There will be some adjustments and some recoupment and it is not easy to evaluate that until after the fact and you see what occurred in terms of landings beyond the specific area closure. This was discussed at the last Groundfish meeting and the only type of area closure that you really occur a benefit is where you have a well spring effect where there is a large enough area closed. An analogous situation would be the eastern end of Georges Bank, in the Canadian area where the fishing rates have been so low there, that there has been surplus production.

I think there has been a lot of feeling that the robust stocks of haddock, cod, scallops and yellowtail flounder out in that area is a consequence of very low fishing mortality in that area and you have a well spring situation there where those fish are producing additional fish that now move across now into Area 2 which is all closed. One of theories behind the Groundfish Plan is that you have closed a pretty significant area out there and as a consequence you will get an area within which a concentration of fish will be produced and there will be some migration out of there and they will be caught up when they leave the areas, but the overall benefit will be of greatly enhanced production. That is a year-round closure. In the areas in the GOM they are relatively small in comparison and as a consequence there will be some recoupment. The main feature of this is that when you look at some of these numbers you are reducing your total landings theoretically from 4.5 million pounds down to 1.7 and most of that is codfish. If you look at this on a theoretical basis, you are saving codfish, you are not saving half a million pounds of whiting which are supposedly available for people to harvest during the November/December period. You are not saving about half a million pounds of monkfish, recognizing that there is a Monkfish Plan coming along that will take care of that, actually it is 800,000 pounds of monkfish. So, these fish are available for these harvesters to utilize if, in fact, the May closure takes place. It is a very focussed action and it will achieve the benefits of reaching codfish reduction targets. I would like to ask the regional office if they have had a chance to look at the issues associated with small area closures and what they sense will be the level of adjustment or recoupment.

Mr. Smith: I am just curious as to whether there has been any analysis of the extent of possible recruitment that might occur when you close a small area like 132 and 139. Has anybody been able to take a crack at where does the effort go and what does it catch?

Ms. Kurkul: No, there has not been any specific studies in that regard. I think, as Phil pointed out, the smaller the area the more likely that closure is circumvented. You will have displacement no matter what, so the issue is when you have displacement, do you have displacement to a less productive area where there is still conservation benefits. I think this is the goal here.

Mr. Haring: A couple of things on this point. One is that being a smaller area and time the amount of effort that is likely displaced is smaller and that would have to be substantiated, looking at it in terms of the time of year and the size of the area. The other thing is that when we did these analyses, we looked at various combinations. For example, we looked at closing the entire Mid-coast area for 20 days and did not achieve the same level of conservation or achieve approximately the same level of conservation for cod for the entire Mid-coast area for 20 days. We would assume that the bulk of that was coming from blocks 132 and 139 during that period. So, if you made that area smaller during the month of May, even if that effort was displaced to the outside areas, you wouldn't expect, at least in terms of cod, that that much cod would be lost in a net effect basis. Some of the other species, on the other

hand, changes a little bit. There may be an increase on the impact on monkfish, but that is not one of the stocks being protected here. There may be an increase on witch flounder as a result of displacement but not as much as the amount of cod that is being saved in this smaller area during May on Jeffreys.

Mr. Anderson: Because of a number of other alternatives that meet the biological goals that we are trying to replace here with regards to opening up November and December in the default position that is in Amendment 7, I would like to make a motion to open up discussion to other alternatives that exists to meet the biological goals.

Mr. Smith: We can discuss them now, but there is already a motion on the floor. We either have to dispense with the motion or amend it and that is really not an amendment, but an alternative.

Mr. Anderson: Just as long as I am assured that there can be discussion about the other alternatives and I would like to have a minute to explain my reservations about the proposed action to the people who are not as familiar with this area. My particular feelings with reference to this proposal is that because it is located where it is and it is structured in the time that it is, that it provides some inequities that must be considered so that other Council members can understand what will be the final effect of this particular motion if it is considered. I believe you have all received something this morning and it just more or less explains the consequences of the action of closing 132 and 139 in May for inshore and dayboat fishermen within the New Hampshire area. I am very familiar with this area and very familiar with the consequences that this action will have with regards to this community. I have a couple of charts up there, but within the amendment there is a blown-up version of this chart which is on one of the last pages of the document.

I tried to do some calculations and I am relatively confident in the handout that was passed out this morning with regard to what these particular closures means. I would like to go through it in some detail. I will read the alternative as proposed. (This document is attachment A to the minutes.) For those of you who are not familiar with the area, I have put two charts up on the wall and I will try to explain my position.

Throughout the GOM these are the blocks within the closure. This is the Mid-coast closure right here. Naturally any interested party within these blocks benefit out of opening up November and December. All parties benefit out of opening up November and December. On the same hand, by redoing and looking at the alternative of closing 132 and 139 these are the only two blocks that are closed. This is the smaller chart, right here of those blocks. Blocks 132 and 139 on this chart does not extend to the upper range of 139. The gear types that have the opportunity to displace themselves like day boats will displace themselves into this block 133. It is small. This chart right here represents the operational chart of an inshore fishermen

out of New Hampshire. They do not go beyond this chart. All the dayboats that operate up here will be compressed here. Any other vessels that come into this particular area, plus the fact that there will be other vessels displaced into this area, this is just not a good area. I think there are some safety concerns also. But, once you compress a number of vessels in a small area, you are opening up possibilities of safety. The three mile line runs around here. Otter trawl fishing is not allowed in the state waters of New Hampshire, so you even compress this small area even more, but this logistical area right here. Ninety-five percent of all the gillnet activity takes place in 132 and 139. These vessels do not have the opportunity to displace into this 132 area. The few vessels that exist on Jeffreys that have the capacity to fish offshore, most of their effort has been focussed on blackfish in recent years. They will take their effort and they will go offshore and they will refocus on codfish. The other vessels that don't have the capability of exiting the closed area will tie up. This is just a viewpoint from the way I see the picture on a reality basis. It is a very neat package to just swap these two blocks, but the people that will probably pay the price is 1.6 million pounds of codfish that are being supposedly trying to be saved throughout the GOM in all three areas – 1.3 of them supposedly have to come out of this area right here. The Mass Bay area and the down east area contribute about 300,000 pounds out of the 1.6 million. I think there are other alternatives that are worthy of discussion that have been analyzed and will present a more equitable consideration. I would be glad to answer any questions.

Mr. Williamson: I just want to confirm what Erik is saying. I have fished in this area quite a bit myself and what he is describing is entirely accurate. I also want to point out that the vessels that will be effected by this are not just New Hampshire vessels but vessels that fish out of Massachusetts and York County, Maine. We spent a week talking to the small gillnetters involved and one thing is clear, the best option for Maine will be to tie up rather than risk losing gear to fish on the bottom that they will be forced to fish on in that 133 block. For the small otter trawl vessels that are going to be forced to keep their effort in that area they are anticipating an enormous competition from large vessels coming into that near shore 133 block to fish along side the smaller otter trawls. Now, they are anticipating that there will be more traffic of very large vessels coming in to that inshore area targeting spawning codfish. Their concern now is for the density of traffic that will be coming in due to this closure.

Ms. Stevenson: I believe that this is a highly used area. I know it will very significantly hurt the trawlers in Portland. But the fact is that when you want to close an area to protect a certain species, the place that you want to close is the place that everybody fishes. That is true on the other closed areas that we have. It is true here, if it is the right place to be closed, it is the place everybody fishes. No matter when we close it, all of the analysis said that Jeffreys had to be closed because that is where almost all the codfish are caught. We can't change that fact. What I would like to ask Erik, which I asked him at the committee meeting, would you rather have this or the default? The default is 50 percent impacted by gillnetters, this is 23

percent impacted. This would be much lower than the default.

Mr. Anderson: As I mentioned, the default benefits everybody. There are other alternatives that have been analyzed that provide a more equitable balance in considering another spring closure scenario rather than 132 and 139. Those are the proposals that we should be discussing to make this more equitable.

Mr. Smith: Let's capture that point. What would your preferred alternative be. We have had three months worth of meetings trying to get to that point and we have to make a decision today. If we do nothing, we will have a November/December closure and all the other alternatives greatly minimize that foregone revenue. We need to pick something and I haven't heard yet what that better alternative is.

Mr. Anderson: Within the package there is Alternatives 3, 5 and 6 that meet biological goals. There was one other proposal that was not considered at the special meeting at Woods Hole by the Groundfish Committee that was probably the only proposal that was analyzed that does not appear here. So, in actuality there are four other proposals that could be considered to replace the proposed action. Proposal 6 which calls for a whole Mid-coast closure between May 10 and May 30 is another 20 day block that encompasses the whole Mid-coast closure. That is one alternative. There is also Alternative 5 which takes blocks 138, 139, 140 and 147 and closes them from May 1 to June 9. Are you asking if I have a preferred alternative?

Mr. Smith: Yes. You have just gone through exactly what I did and looked for a more palliative alternative. I looked at Alternative 6 and said, "well, that's the whole coast, but is ten days less, so maybe that is more viable." But then you look at the cod savings and it is identical. So, it closes a whole lot more water, but doesn't save any more cod and has a little bit less of a revenue benefit, so that is a wash with reference to the proposal. You can make the same argument for Alternative 5. Block 132 is not in there and that is a key area, but it is a longer period of time, 40 days. I can see how those tradeoffs are made and I think everybody has mulled those over in the last week. The question is if the proposed course of action that the committee came forth with isn't acceptable, what is the next best alternative.

Mr. Anderson: There is one other thing that probably did not receive some discussion and it is probably hard for us to speculate on at this time. But, there has been another ingredient in this whole scenario that we have not been able to lock up on. That is the recommendation of the Harbor Porpoise Take Reduction Team (HPTRT) in reference to gillnet closures with regards to saving harbor porpoise. As we all recognize, and I think that is has been stated before, the HPTRT Plan has not been accepted at this moment, I am not even sure that it is in proposed rule. But, two of those months in the HPTRT plan call for complete gillnet closures in the Mid-coast area and that is the months of January and March. Those particular closures account for approximately 200,000 pounds of groundfish savings with regards to codfish. I realize that the HPTRT Plan has not been finalized and put forward yet,

but if it does, then there is an additional benefit of 200,000 pounds of codfish which should have the potential of being subtracted from a biological goal of 1.2 million pounds. Should we have a discussion on this at this time and if it is, it lowers our biological goal to approximately 1 million pounds not the 1.3 million pounds.

Ms. Stevenson: We have gone over this and I don't know how much you want to listen to Erik and I argue, that the gillnet restrictions under the plan do not, at this moment, meet the 50 percent reduction. So we can't count any of the reduction for any of the harbor porpoise closures because all of the harbor porpoise closures don't get us to the 50 percent. This closure, whether I like it or not, is on top of the 50 percent reduction, not in place of. We are not at the 50 percent reduction and this is on top of the 50 percent reduction.

Mr. Smith: Procedurally we have a motion on the floor. We can get some comment on it, we can go up and down on it, we can have a motion for an alternative, but I don't hear a clear-cut alternative to the committee's proposal that has come forth. I hear some concern about it. I would like to hear from other Council members.

Mr. Coates: Regarding the status of the HPTRT Plan, there is a November/ December action recommended in the HPTRT Plan as well. The HPTRT Plan will not be operative for 1996. It is my understanding that if this Council recommends to the Regional Director that they employ the use of pingers during the November /December period, it extends the current experiment which has just been authorized for September 15 to October 31. There may be consideration also, since they are also talking about the Mid-coast closing in January which would be a September through January closure, there might be consideration for pingers. I know there are some concerns about the animals learning to tolerate the pinger noise and then being subject to being taken. At this point, we would be recommending, for at least the November/December period which is now closed to gillnetters, to accept the substitute and then we would recommend the use of pingers in that November/December period which gets at least those folks that are using pingers off the hook in terms of continued fishing. The January closure may well be in the same situation. I would ask Pat specifically about that whether this recommendation on the Mid-coast closure for January would be amenable to a possible consideration by pointers. I don't want to put you on the spot and I don't know if you can speak for the whole HPTRT.

Ms. Fiorelli: I really can't speak to it because what the HPTRT agreed to do was to reconvene and discuss the whole issue and open up the whole issue again, since the basis of the plan was the Council's closed area for harbor porpoise. If those change, we then all have to get back together again. There was no default and no discussion of, well, "what if."

Ms. Kurkul: Can I clarify my understanding of the motion that is on the table? The current motion would close areas 132 and 139 for the month of May and in

conjunction with that closure would open up the November/December time period for groundfish and allow the use of pingers by gillnetters during the November/December harbor porpoise closure. Is that correct?

Mr. Haring: If I may, the second part of that Phil Coates indicated that it was going to be an additional motion. It was not included in the document that was distributed, but it has been distributed as an appendix to be considered as a separate action.

Mr. Smith: The motion right now is to go with the committee proposal of the two blocks in May. It leaves open what happens for gillnetting in November and December. The discussion has been since we have already had a previous action on using pingers in that area and the data supports that it is the right time of year and you get a lot of benefit from it, the Council would be amenable to proposing that it be extended through the November/December period. In other words, the gillnetters then don't have to give up November/December Mid-coast and those two blocks in May. The two blocks in May for them would be an alternative to what they have to suffer now under the default.

Ms. Kurkul: Right. By what you just said, isn't the decision on whether to open November /December tied closely to the issue of whether you allow pinger use and so it may make sense to have it as one motion instead of two.

Mr. Smith: I am amenable to that.

Ms. Stevenson: I thought we voted on that at the last meeting, that if it was changed we would request.

Mr. Smith: Just to be clear, if no one has any objection, the motion would be amended to add that language. Now the amended motion needs a second because it is not a committee vote and the initial motion did not have a second.

Mr. Coates moved to amend and Mr. Williamson seconded:

**if this motion passes, that the Council would request that in November and December it would be open to gillnetting with the use of pingers.**

Mr. Avila: You said that there were several alternatives that would meet the goals. obviously you have talked to some of the fishermen in this area, is there one of these alternatives they prefer and can we look at that and forget the rest?

Mr. Anderson: In the order of preference I would like to start with them and have each one of them receive consideration.

Mr. Avila: That was not my motion. I said was there one of them that was preferred

by the fishermen?

Mr. Anderson: One was a closure in the Mid-coast area for fixed gear, December 15 to March 31. This proposal, in actuality, comes up to replacing 1.3 million pounds of codfish for revenue substitution at 2.4 million dollars. Since it is not in any one of these proposals that you have I can explain it up here.

Mr. Avila: That is not the question.

Mr. Anderson: You asked for a proposal that the fishermen preferred.

Mr. Smith: I am finding that the alternative that you are describing was very strongly rejected and that is why it is not on the paper. Is that correct.

Mr. Anderson: It was never considered.

Mr. Coates: There was discussion about it though and I don't believe there was any enthusiasm for it, whatsoever, other than Erik and some of the other people that were in attendance at the meeting. John Williamson supported it to some extend, but the major concerns were that you have this shifting of one gear group is out and then the other gear group is out. Then you have the problems attendant with people moving into one area and then not being able to be displaced. There were a whole host of issues associated with potential gear conflicts and there was concern that this was a very unwieldy type of action. Perhaps others at the meeting could reflect additional reasons why they were not enthusiastic about it.

Mr. Smith: Before we belabor it, without analysis and without presentation in the document we probably can't vote it today, so it is an unproductive line of discussion or we suffer the default in November and December. Let's not go down an unproductive line of questioning.

Mr. Anderson: Other than that, Rodney, Alternatives 5 or 6 were preferred from the people that I talked to in our area as they thought they were more equitable.

Mr. Smith: Ok. There is a motion on the floor which captured part of what people were concerned with. We can discuss it further or if someone wants to discuss an alternative as a motion. I think I hear people saying that the proposed course of action of Alternatives 5 or 6 is the arena that we can discuss these in. Perhaps we ought to find out if there is a real strong movement to substitute Alternative 5 or 6 for this one.

Mr. Williamson: My sense is that this is going to go ahead and I would just like to see if there is some room to perfect it a little bit. Two things that I would like to see included and it might be a night closure for blocks 140 and 133 so that we could try to keep the level of otter trawl activity down. This has been requested by the small

otter trawl fleet that frequents this area. Could we create some sort of system for that area during this period of time that will not allow any otter trawling at night specifically when the codfish come down on the mud to spawn. The second thing I would like to see this mechanism disclosure that we are proposing here be limited to one year and that we get right to work trying to design something that will achieve the goals that we are trying to achieve under a more comprehensive plan that will take into account problems of harbor porpoise and gear conflicts because we are creating an enormous reshifting patterns of behavior that will create massive gear conflicts. We are going to have to be ready for it. This is a prediction that I am 100 percent sure that next spring there will be enormous gear conflicts happening on Stellwagen Bank and on block 133. These are all unintended consequences of our actions and we are going to have to deal with them. I think the time to get started is right away. It will take a full year to come up with a comprehensive plan to try and achieve what we are trying to achieve with this closure that we ar putting into place.

Mr. Smith: Those are two good thoughts and a good rationale for why. I am wondering about if we do it for one year and then we default to the November/December closure again. There are two ways of looking at that. If that is really undesirable, why would we want to have a situation where we default to that. On the other hand, if it so undesirable and we know we are going to have to default to it, we know we will get on with the task of finding a better alternative then whatever it is that we vote today. I don't have any objection to that. To be clear, we would be designing an alternative for the 1997-98 fishing year, because this one we are talking about now is the 96-97 year. To your other point on the night closure, it has been discussed a lot and if there is a consensus on that, I am agreeable to anything. I wonder if we can add that into this framework document without earlier notice that it would be on the agenda and without any type of analysis. I hate to see process keep us from an idea that everybody agrees with, but if we submit this thing and then it gets rejected because it didn't go through the right number of hoops, then we lose big time, because you are stuck with November and December. Now, Groundfish Committee, has there been enough discussion of that as we went through the summer that you feel comfortable and that Pat feels comfortable that we could add it in.

Mr. Coates: We have had sporadic discussion about night closures, but nothing intensified. I would think we would have a problem with that even though I happen to be personally a fan of night closures which does allow a measurable examination of effort. If you stop somebody from fishing 50 percent of their time and again there is a recoupment issue, so they catch up to the fish they didn't catch during the night in the day time. I could not say that the committee had a substantive enough discussion on this to be able to bring it forward at this time.

Mr. Smith: We don't have to act on that part of it right now. We could pass this framework as it is and with John's second point of sun setting in a year and in another framework between now and implementation in May, get the night closure

issue fully discussed. The only thing we have to decide on is something that from the analysis, saves codfish and is has better economic benefit so that we don't have to do the November/December closure. If that makes you comfortable that we could still consider the night closure part of that, I would say leave that out of your motion right now and deal with the sunset alone as an amendment and move ahead with it.

Mr. Nelson: I would want to discuss the night closure a little bit more before we drop this out of consideration. If we look at the various alternatives that we have, 5 and 6, for example, have in there closures of at least 140 or 132 part in one of the other. So we are looking at total closures of those and so a lot of discussion has already taken place on closing those particular areas down. They are listed as alternatives for consideration of today's meeting. If anyone was concerned about that area being closed, I suspect they would be here and be well aware of the ramifications associated with that. If you had selected Alternative 6, both those areas would have been closed entirely and if you were going half way and just closing that at night, that doesn't seem to me to be as drastic a measure as what you would have with a proposed alternative already. We could postpone it if you want, but I think it certainly has a basis for consideration and it does address one of the issues that I have always been concerned about. That is that we are going to continue to harvest spawning fish and biologically I can't see how we can rationalize doing that. If Alternative 6 or a modification of that prevents the spawning fish from being harvested then I would be supportive of that. Otherwise I have problems with these measures. My point is that I think we have discussed 132 and 140 as far as total closure, maybe we haven't done it as a night closure, but a total closure is 50 percent more prohibitive than a night closure.

Mr. Smith: Hearing that, could we then put the night closure thing in if the Council is willing, if John's line of reasoning can prevail in the review of the document and if the Council wants to then vote it forward. I will ask Pat if it can be approved?

Ms. Kurkul: You know how much I like these legal questions when Gene is gone. The question that needs to be answered is does the document analyze the impacts of the alternatives that the Council is considering and could the industry and does the Council have everything in front of them they need to know what the impacts of each alternative are. I hear John's argument, and on the other hand, in some ways the proposal to have the night closure was not so much a clear impact argument as presented here in the document as it was an allocation issue of sorts. I can't say yes or no, I think that my impression is that it goes beyond the analysis in the document and that including it is putting in a substantive change that the Council and industry did not have an opportunity to see ahead of time.

Mr. Smith: In terms of the analysis question, if I understand John right, the only way to deal with that is to show based on what we have in this table in the document on page 17, that one of those alternatives as amended with a night closure shows that there is no worse impact on cod and a better revenue impact. Then the Council votes

if it so chooses and the staff does the analysis, however, to show a proportion of the time out. If it is just an analytical question and if the staff can do that if the Council votes it, the Council has a right to do that. The other question is that if there are other parts of this that are contentious, for example, the gear conflict issue and haven't been raised, that is why I am asking you the question. John makes a good point. If you close the whole area, it is a worse effect.

Mr. Haring: In terms of analyzing this, we are not going to be able to do any more quantitative analysis of a proposal to close it at night and the reason is that the decision to remain in an area to fish during the day and go home at night or to not fish in an area because you can't fish around the clock, is one that individual operators make and we don't have the ability to predict what that decision will be. Clearly there are some otter trawl vessels that fish in the day time in that area that would either steam outside of that area or go home at night if the area were closed at night. There are other vessels that may depend on that area at night for winter flounder during that time of the year. The other issue is if the area is not open at night there are some vessels that may not even come to that area and seek a completely alternative way of fishing during that period. In other words, go to a ground where they can fish around the clock and not have to do any day/night steaming and so on. What we would do for an analysis on something like this is essentially the qualitative kind of analysis summarizing the comments of people here and members of the public that might come to the mike and say, "yes, if it is closed at night I won't have an alternative because I fish there at night. Or, if it is closed at night, I am going to have and go someplace else to fish or it is not going to effect me at all." We would get a sense from those comments what the impacts would be and quantitatively describe them in the document.

Mr. Smith: Let's look at it this way. There are already regional office concerns that this might be a problem posed at this time and in this document and we have time to deal with this issue this winter and get it right and get into effect for May if we so chose. Now, as a strawman I see some real pitfalls to this thing and I don't see the burning deadline that we have with the November/December thing. Perhaps we ought to defer the night part of this. Do you agree or do you want more discussion?

Ms. Stevenson: I agree, but I have another point.

Mr. Smith: I don't want to trample on the night closure issue, but I just want to offer a strawman.

Mr. Nelson: I think if there is a concern on the regional level why create a problem where we don't have to and therefore our focus should be on what should be a fair and objective measure to substitute for the November/December closure. That unfortunately means that I have some concerns with 133 and 140 being closed because it will not address the displaced effort onto spawning fish and therefore I have trouble with this motion and I am not sure how we will address it. The night

closure does address that. I understand your point and it is well taken.

Ms. Stevenson: Obviously the whole rationale for this closure is not spawning fish. I agree with you we would love to do something for spawning fish. My concern that I want to address was John's suggestion that it only be a one year deal. I don't care what it is in future years, but my problem is that we have to be real specific about the timing if we only want to make it a one year deal. Assuming that we do something that is in the spring and then it is November and December. Is that going to be November/December of the same year so we have a closure in May and then one in November/December? Is NMFS going to let us skip November/December this year and go to May and then skip May again and go to November/December. I don't think so. We just have to address that question before we go, "oh sure, November/December will be the default." I would much rather that there be some May closure or some spring closure be the default. I would like to leave it open to question what the actual closure is in some future year.

Mr. Williamson: I had something in mind for a default, but it is falling on the lines of closing everything above $42^0$ the following year if we didn't come up with a better alternative . A possible default would be to close the entire Mid-coast area for the month of May. We have that analysis on Alternative 6. I will suggest that.

Mr. Smith: That sounds like a motion to amend that would leave out the night trawling. Go below pingers and just add, "one year only and the default in the future after this year, if we don't come up with something else, would be the entire Mid-coast area closed for the month of May." Alternative 6 is the default after year 1.

Mr. Smith: So the motion now basically is 132 and 139 closed in May for the 1996-1997 fishing year which would mean May 1997 and after that fishing year, if we take no further action, the following year the closure would be the entire Mid-coast from May 10 to May 30. If that is popular as a default, I wonder why we don't do it as the proposal?

Ms. Stevenson: It is popular as a default because it is safer and it addresses the concerns that this one might not be perfect and so it gives us a safe default and then if we are happy with this one you could go back to it some other time.

Mr. Smith: Ok. Now we need to have this as a motion to amend so we can have a second and be discussing it formally.

Mr. Williamson: Could I say just what we discussed and make that as a motion to amend.

> Mr. Coates moved to amend and Mr. Williamson seconded:
> **that the Council recommend that during November and December the area be open to gillnetters with the use of pingers one year only. The default in**

**the future, after this year, would be the entire Mid-coast area closed for the month of May; 1997--blocks 132/139 closed in May; 1998 and after--default closure May 10 through 30 (use Alternative 6 as the default)**

Mr. Smith: Ok, he doesn't object so his motion perfected. So the perfected motion is 132 and 139 closed in May and in the 1997-98 fishing year the default measure will be the entire Mid-coast area closed from May 10 to May 30 which is Alternative 6 in the document. So without objection that is the new motion on the floor.

Mr. Williamson: Back to the night closure, there has been an analysis done on closures for blocks for 133 an 140 as John Nelson pointed out. The question I would think would be if we could go forward today with a closure that was blocks 132, 133 139 and 140, if that was something we could do today, then why couldn't we be going ahead with a closure that would be 132, 139 and nighttime periods for 133 and 140. There is concern about the analysis being done for night time only.

Mr. Smith: I am not sure that I got it clearly. You are suggesting one of the alternatives that has been analyzed but not with respect to the night closures. It has been analyzed as four blocks closed for some period.

Mr. Nelson: I think Alternative 6 has those two other blocks incorporated in as well as others. I think the committee looked at it, but they felt that the area was too extensive, so that was one of their concerns. I don't know if you can separate it out just for those two other blocks.

Mr. Smith: Does somebody want to comment on this? We have the same problems with night closure that we have just talked about.

Mr. Coates: As I said, I am certainly not opposed to the use of night closures as a management tool. We have them in state waters in Massachusetts and I think they have provided some benefits, but there are a couple of additional problems. When we went through this effort in Massachusetts there was a lot of discussion about enforceability of night closures. Basically, our night closure is applicable to all mobile gear so that allowed anybody out there investigating at least for moving targets as opposed to vessels laying to for whatever reason, boats that might tend their nets and gillnetters and things like that.

I can see some problems in the Exclusive Economic Zone (EEZ) if such a closure was implemented. For example, we are looking at creating an exemption for a large class of small scale scallopers who would be allowed to operate under the premise that if they don't catch any groundfish they should be able to fish. I think that might create an additional problem with regard to enforcing a night closure. We can ask the Coast Guard at some point about that. I am not trying to hide behind the enforceability issue because there are a lot of things in this plan that are difficult and the Coast Guard made their best effort to deal with them. I think that is one problem

that I don't see in state waters because it is closed to all mobile gear and that includes scallopers and trawlers. That is something that you might have to consider.

The other issue is that this would be focussing specifically on mobile gear. I presume that gillnetters would not be effected by this as their nets would be in the water and they plan to haul out at night.

Mr. Williamson: What I proposed was just for mobile gear.

Mr. Coates: And it is basically to deal with the anticipated redirection of mobile gear onto areas where it is presumed to be spawning fish.

Mr. Williamson: That is correct. That is something that has been requested by the small otter trawl fleet.

Mr. Coates: Well, this is another issue that has been going on about the perceived increase in large vessel effort near the EEZ. I understand that issue, but I am just thinking that it is trying to enfold a different initiative into this groundfish protection. I am not saying it won't but it does raise some concerns. There was much discussion about this at the committee level.

Mr. Smith: I can't envision that this thing is going to move through the system efficiently and not potentially be rejected because of a lot of these things that are coming up as a new part of this particular framework after we have had about four months of discussion on blocks and times, but not a night closure. I know we have talked about night closure, but I see us jeopardizing the November and December period, in effect, having to suffer through that. Only If you thought in this framework you could capture what you want in terms of a night closure soon like in November, December or January for those blocks. Would it be necessary to push forward with it right now. If you are really only talking about it as a part of the proposal for May, you have some time to get consensus on it if you are going to do it. If you want to get it for November and December I think you are dead on arrival because it has not had the discussion that a contentious issue like this will need. I would suggest that it is a new framework.

Ms. Alden: I agree with you that it is likely that this is where we stand. I just want to say that because it is something which probably has some real merit given the behavior of the fish at that time of year. This is a frustration about the measurement of this entire groundfish closure which is that we can only look at landings and we can't look at qualitative impact on the behavior of the fish and what the fish are doing at the time. The fishermen can tell us, and that is exactly the point, but unfortunately the math can't accommodate that yet. I will just say again I hope, as we go forward to analyze changes for the year after this, that we make efforts to try to consider this. Clearly there is more to it. Barbara was right that the November/December closure was only calculated by the amount of landings at that

time, but we all know that there are other factors which influence the fish.

Mr. Smith: Is the night closure thing dead or do people still want to champion it? Ok, for now it is dead and we will reconsider it as soon as somebody wants to bring it up for a framework. So, the motion is to close 132 and 139 for May. In year 2 use Alternative 6 in the plan as the default. Is there more discussion on that motion?

Mr. Anderson: I understand the motion as it exists right now and from what I presented earlier there seems to be somewhat a disregard for some of the equity issues that are involved in blocks 132 an 139 closure. To take and answer Rodney's question or Barbara's question with what is the preferred alternative that would more or less spread the equity among the different user groups in this area I would like to take into consideration Alternative 5 which closes 138, 139, 140 and 147 from May 1 to June 9. I recognize that it is another nine days beyond what the other 132 and 139 blocks does, but it does address the equity issues that are involved in considering the closures of 132 and 139 and the equity issues of how it effects inshore fishermen from the New Hampshire, Cape Ann and Southern Maine areas.

Mr. Smith: Someone can correct me if I am wrong on parliamentary procedure, but it is not an amendment, it's an alternative or a different motion and we go round and round on a substitute motion type of thing, but I have no objection to hearing a substitute offered if it gets a second and discuss it. However, I think the parliamentary procedure is to go up or down on this and deal with other motions. Now I think it is cleaner to discuss the alternative first. If it goes up, then you don't have to vote on the other one. If it goes down, you still have this one on the table. My preference is that if you make this motion and make it as a substitute motion. Does anybody object to that?

> Mr. Anderson offered as a substitute motion and Mr. Nelson seconded:
>
> **to consider Alternative 5 as a preferred alternative [closure of blocks 138, 139, 140 and 147 from May 1 to June 9.]**

Ms. Stevenson: I have a very serious equity problem with this motion because the motion that is proposed by the committee allows a five-fold decrease in the gillnets with only a 50 percent decrease in the trawl impact. This alternative only gives the trawlers a 30 percent decrease and it is a seven or eight fold decrease for the gillnetters. It does not protect one of the very significant areas for codfish which is 132. I would also suggest that the Council strongly consider the divergence of the impacts on the different fleets with this alternative over the one chosen by the committee.

Mr. Anderson: The fact is that it includes block 138 with the multitude of information that has been given to us in the course of looking at these individual blocks. Block 138 does account for substantial codfish landings through that

particular time. To eliminate it or not consider it only offers the opportunity for that area to be used by other sectors that .....Block 138 is basically not a sector accessible by the inshore fleet on a day boat type of basis. You just start to spread the equity a little bit fairer when you use block 138 which accounts for a large portion of groundfish or codfish landings in the month of May. I personally believe that 140 and 147 are really not players in this whole thing and they contribute a very low number, but they were used in this particular analysis. Probably the blocks that take into account the bulk of the landings through that May 1/June 9 period, is 138 and 139. Blocks 140 and 147 are very small. We have the information to look at it to see what blocks 140 an 147 contribute to this whole thing. At least, it makes it in more equitable plan for all the interested parties that fish in the Mid-coast area.

Mr. Smith: It is interesting that, of all the alternatives, that is the one with the next greatest impact in terms of revenue. In other words, it is closest to the revenue impacts of the default leaving aside differential impacts between gears. It moves the closure a little bit farther up the coast, but there is something like 2.3 million dollars of revenue foregone in that one and there is not that much in any other one.

Mr. Haring: Alternative 5 closes 138 and doesn't close 132, but it also doesn't do anything for 133 and my understanding in justifying looking at some of these alternatives was to deal with the displacement of effort into 133 which could still occur, I think. If you close 138 the boats that fish there are going to go to 132 and 133.

Mr. Smith: But, what he is saying, is if you don't close 132 then those boats don't get displaced into 133, they still fish in 132.

Ms. Stevenson: What I was going to suggest is that obviously the one that we picked has the least economic ?, but if you want to look at another one, I would suggest that we look at Alternative 6 because that closes every where and you don't have the displacement issue. If the displacement issue is what is concerning you, then that is the one that we should pick.

Mr. Smith: The thing that is attractive about Alternative 6, it solves your inequity problem because nobody can fish and everybody suffers equally and it is the shortest period of time. If you have to plan this as a business and you have to do a haul out you would rather have it for 20 days than 40 days. Discussion on the substitute or amend the substitute if you so chose. I will now take public comment because as a framework proposal that is part of the process. I thank the public for your patience out there and I know you all have a lot of different views out there and I wanted to get Council comment. Let me explain further. When all is said and done the proposal, instead of November/December closures of Mid-Coast Maine, the proposal would be to close blocks 138,139, 140 and 147 from May 1 to June 9 which is Alternative 5 It does not have the one year language or the defaults.

Carl Bouchard, F/V Stormy Weather: I have been to all the meetings on this proposed closure including the one at Woods Hole. One of the questions asked at Woods Hole was do we have to chose one of these proposed options. I believe the question was Erik to Phil who was chairing the committee at the time and the answer was, yes, we can discuss and we can elect an alternate that is not here in this program. This morning I heard that we would be wasting time if we discussed something else. I believe that the option is that we can still chose something else other than what is in the proposed document as long as it can be quantified by Woods Hole which would be a simple phone call to put a question in the computer for five minutes.

Mr. Smith: My understanding is that the reason they met at Woods Hole was to be able to discuss any alternative that wasn't on the table. Now we have a real difficult time of picking a new idea and getting more analysis because we need this amount of time from now...

Mr. Bouchard: I understand that. Which of these two evils is better and who does it effect the most should not be the question before us. Instead it should be what plan would effect everyone equally -- all gear types and all boat sizes and no dodging the bullet by any group. I would suggest that you reduce the base line days at sea (DAS) on a percentage basis to reach the goal of the 1.2 million pounds of codfish. No blocks of time, no isolated areas or groups that are severely impacted more than another. We are all in this together. This is the only way to share the burden equally. Even if it takes three days, five days or ten days or whatever away from the baseline, everybody would share equally. On the fleet DAS we are going to be cut to 88 days. Some are on individual days, or whatever the case might be. If you are landing codfish you know how many codfish are landed in a day. You take the percentage of what it takes to arrive at 1.2 million pounds. It might be two days off of the fleet days at sea or it might be five days, but everybody would share equally, whether you are a gillnetter or a hook fishermen, draggers, 10, 40 or 100 foot boats, everybody would share equally. It doesn't lock anybody's door near or far. Tell them you must stay home this week or next month.

This information is available in the computer at Woods Hole right now. It has to be or you would not have been able to arrive at the fleet DAS program and it would only take a phone call. Remember, this is not just for November/December of this year, but for all years to come. I think that has been touched on with the sunset provision. I think it is a must if any policy went through. It is very easy for any Council member here to vote yes for something that does not effect their boats or their area. It is just another way of dodging the bullet. A proposal like this effects everybody on an equal basis. In a similar line, displacing effort from inshore to offshore, forcing boats to go where they are unfamiliar or incapable of going, has severe consequences. We lost three fishermen in our area this past week. The primary reason that those guys were there was because of Amendment 7, because they were saving their DAS to when they can make the most money. The only

reason that boat was tuna fishing was because of Amendment 7. The captain of that boat never liked going tuna fishing. This is something he had to do to survive because of Amendment 7 DAS. Now if you close an inshore area to the small boats in November and December the very small ones are not going to go outside that line, but you will have marginal boats, 55 feet, that will try to fish outside this line and I wouldn't want to be the one that voted to say you have to go there or stay home.

Edward MacLeod, Gloucester Fishermen's Wives and the Gloucester Fishermen's Association: I sympathize with Mr. Bouchard because in Gloucester we have had 10,000 lives lost since 1623 in pursuing this vocation. Fisheries in itself does not lose lives, perhaps in this new area it may, but certainly at this present time, historically we look back and can't blame fisheries management for the loss of those lives. But, what does concern me is that I and other members of our organization have attended numerous committee meetings, we have heard Phil try to weed out and bring out all of the arguments and that is understandable. What I would remind all of the members on this board is that Amendment 7 was fought by every single fishing community in every single gear sector and there is nobody that is happy with Amendment 7. This is proven by the fact that in New Bedford you have a new scallop organization, East Coast Scallopers. One of the reasons that they formed is because they didn't like the way they were treated in closed areas on groundfish. You have a lawsuit coming out of Portland, Maine and you have a new draggers association in New Bedford. All of these associations are being formed because they are not happy with the way in which they were dealt with. I would hope that when the committee comes back with a recommendation, that they should stick to the issues and not try to bring other side issues that weren't even discussed, such as the night closure issue, because that is a separate issue. If you want to talk about night closure, talk about the closure of the spawning area in its entirety, not just as a matter of disposition of the harvest of that fishery.

We are in favor of the proposal that came forth from the committee. We have gone on record as being in favor of that and the people that I represent who are in attendance here, that I have the approval of them to take and voice their approval of the new recommendation. I just want Erik and John and John to know to what you have gone through we have gone through and are going through. If you take and look at the socio-economic statement that was put out on Amendment 7, look at what is financially feasible as far as the opportunity for a future in the gillnet fleet versus what is going to happen in the class 3 and class 4 trawlers.

Mr. Smith: Other comments from the audience?

Mr. Calomo: Vito Calomo, Executive Director of the Fisheries out of Gloucester. I have gone to many meetings throughout the year and I think from Maine to Rhode Island, I just don't know where the hell we are coming from sometimes. We discussed this night closure and here we are, hours later, still on this night closure. You have had committee meetings that I thought would go at least in a direction that

was satisfying to everybody. No one wants another closure, especially fishermen, but I support the original May 1 to May 30 on Jeffrey's. You have gone in every direction. I don't understand how we can come here, after months of meetings, and be this far apart. I don't understand how we can take, time and time again, with a night closure that we discussed many, many times. In other areas it seems like we are pitting fishermen against fishermen from Maine to Massachusetts to New Hampshire. I agree with the other gentlemen who spoke that said "it should be equal to all," but in all my life as a fisherman in my family, it has never been equal to all but we should try to get a little closer. I am almost ready to say "let's go back to the default." I just don't know where we are coming from. I have a real problem listening to this today.

I also want to say that no matter where we go on this closure, I am a little confused about a few things. As Amendment 7 has taken a lot of us out of the business, and as we enter the 88-day second year, it is going to take a lot more fishermen out of the business. You talk about the socio- and economic impact study of Amendment 7, there is no other port in the eastern seaboard that is going to get hit harder than Gloucester is as one of the biggest and oldest fishing ports. During your direction of Amendment 7, which no one was happy with but the fish, we in Gloucester have spent millions of dollars redirecting our effort so we can get away from the groundfish and hoping that you, as managers, have made the right decision to see this come back so we can fish groundfish again. We spent millions of dollars in pelagics, herring, mackerel and maybe menhaden. Where does this plan fit in with the closed areas? I read in one case that pelagic fishing is an exemption so I am a little confused. I have some questions that I need answered; if you are going with a pelagic mid-water trawl, is this allowable?

Mr. Smith: That is an entirely different issue that we haven't even discussed yet and it is a different topic for today. We need to talk about this motion.

Mr. Calomo: Well in this closed area motion, this is a major consideration for half of the fishermen that I have brought up who have invested millions of dollars. I think it is an answer I need to know. I think it is part of the motion that I want answered.

Mr. Haring: The answer to the question on whether or not pelagic mid-water trawling is allowed in the closed area...

Mr. Calomo: Pelagic mid-water trawling, right?

Mr. Haring: Yes, pelagic, and in the regulations it states that in the area closures in the Gulf of Maine, that group of exempted gears, of which mid-water trawling is one, are exempt with the exception that it does not apply to vessels that are fishing or using exempted gears excluding mid-water trawl gear. In other words, at this point, mid-water trawl gear cannot fish in those closed areas. When the Council submitted that in Amendment 7, they excluded mid-water trawl fishing in those three closed

areas in the Gulf of Maine pending a review and a separate analysis that might allow them in once observer data is analyzed. So the status, right now, is that they are not allowed into those areas.

Mr. Calomo: They haven't proven to be catching groundfish if they are pelagic mid-water. If you say mid-water, yes there is a groundfish mid-water trawl that could catch groundfish. That is a groundfish net, though. We are talking a pelagic mid-water trawl. That is altogether a different type of net.

Mr. Haring: That distinction hasn't been taken up by the Council or the Enforcement Committee in terms of trying to define a pelagic mid-water trawl as an exempted gear that could go into those closed areas. That is not to say that they can't do that, but it hasn't been done yet.

Mr. Calomo: I don't want to hold this up because I know we have a motion and I have spoken on the motion, but I also need this answered. When will that be taken up?

Mr. Coates: Part of this will be addressed today when we discuss the issue of the other closed areas, and it is an area that warrants discussion, but it will be addressed. There are some concerns about this distinction about the various types of so-called mid-water gear and that needs to be clarified.

Mr. Calomo: I appreciate that and I appreciate you giving me the opportunity to speak. I have a lot of people who have invested millions of dollars and I needed to have this out so that they can understand it. Again, I am in favor of the original motion that Phil Coates put on the floor to accept May 1 to May 30 on Jeffrey's.

Mr. Smith: Let me see if I can put what I think these two different motions are in my own perspective. If we accept Alternative 5 it is neutral in terms of the cod impact; it brings us 50% of the way back towards the revenue impact that would be suffered by the trawl sector if we had stayed with the default --- that is the difference between the 2.9 to the 2 million revenue impact rows in this table; Alternative 5 is actually a little better for the gillnet fleet, but not a whole lot, $30,000, so there is a big impact on the trawl sector. These are all the disadvantages. The advantage side is that the small boat fleet, and predominantly gillnetters, but also some small trawlers who come out of New Hampshire or far southwestern Maine, that would go to Jeffrey's could then do that because 132 would be open.

Ms. Stevenson: Then the Maine small vessels couldn't go anywhere and even Erik said he didn't know why those two areas were in there but they are in that alternative so they would be closed to the detriment of those small vessels without any benefit to the codfish.

Mr. Smith: You mean 140 and 141?

Ms. Stevenson: Yes.

Mr. Coates: I would just note that the representatives of two organization in Gloucester that represent a fairly significant sector, and Gloucester being the most proximate to Jeffrey's Ledge, have spoken out in favor of the alternative that was developed by the committee.

Mr. Anderson: In reference to Alternative 5, I have looked at the information that has been supplied to us and I don't know whether any of the other Council people have it, but block 140 in the month of May, if we include it in there, is going to account for 47 pounds of codfish. I don't even know why it is in the analysis. Block 147 should not be in the analysis either. Basically, like I said, blocks 138 and 139 make up the bulk of this closure.

Mr. Matt Russo, F/V Mary and Josephine, Inshore trawler: I just want to start by saying that I have gone to the last two meetings, very important meetings, because I fish inshore Jeffrey's, Ipswich Bay, and Mass. Bay all year round, day and night. At the last two meetings, the first one in Saugus, I talked with the Groundfish Committee and we had a bunch of alternatives and we got down to two or three of them and then we decided to go down to Woods Hole. Down in Woods Hole, we sat there for nine (9) hours and talked and talked and talked. I myself talked a lot, but on this booklet that you brought up to this Council on page 5, where it says 3.1, the Proposed Action "to replace the November-December closure of the Mid-coast Area to vessels capable of catching groundfish with a closure of the area defined by blocks 132 and 139 for the period May 1 through May 31," and then the mention of the 30 minute square blocks. That was the first proposed alternative. It is not even in the top three now and we sat there with all the landings and all the data from Woods Hole that will support this closure --- it supported it --- fish migrate in those two blocks.

I know Erik has a concern about his gillnetters, they fish there as well as I do, all year round. Our biggest concern right now is 1.3 million pounds of fish. You get it done in four weeks in May, the fish are cheap, they are spawning, they are swimming through there. The Groundfish Committee all agreed on this proposal --- May 1 through May 31. Everybody agreed to it. They might have been in the second one, which is the rolling closure, but everybody stuck by those two blocks from May 1 through May 31. The fish go in and they go out. When you closed Georges, you weren't worried about all the other areas, and the well-spring effect. I believe in that. You have an imaginary fish on Georges and the fish are going to come out.

But getting back to the most important thing where everybody agreed on this proposal and then all of a sudden we come to this meeting and there are more members, you start adding night closure and other proposals, all you are doing is going back. You are going to have to go back to Woods Hole again. The data

supports it --- 1.5 million pounds of fish in the month of May in those two little blocks. It is not a big area, it is quick, and you get your amount of fish in those four weeks. If you close the whole Mid-coast, all the small boats will be out of business for a month. Is that what you want? Everybody out of the fisheries for a month? Not everybody, just the small boats because they can't steam out 20-30 miles. So you guys better reconsider your other alternatives and stick by the one that you all agreed on. It is there and you have the support. One other thing, when I sat at that meeting for nine hours, there were only two fishermen and they are here again, and we are getting sick of it. Nine hours hurts. Your best information is from the fishermen, from your logbooks and from the data down in Woods Hole.

Mr. Smith: Any other comments on the motion?

Mr. Williamson: It just occurred to me that there was something else that we had to address on this too and that is do we include the party boat sector in this closure? There is a letter that we got from Maggie Raymond's group saying that they would be in favor of excluding party boat fishermen from having to participate in this and I would tend to support that too.

Mr. Haring: The current regulation provides an exemption in the Gulf of Maine area closures for party and charter vessels.

Mr. Smith: Do you mean for November and December?

Mr. Haring: And in the Mass. Bay Closure and the northeast closure. That wasn't discussed in this document and therefore it would extend the time process into the November time period.

Mr. Smith: But if they had been exempt in the previous document, Amendment 7 that went in, and this document is silent on it, then you would assume that they are also exempt?

Mr. Haring: Right.

Mr. Smith: Any objection?

Mr. Rathbun: I just have to say that I have been listening as carefully as I can and I can't support Alternative 5 as the principle alternative. On balance, the original motion, although it is not acceptable to some, it is the preferred alternative that I will vote for. I will not support Alternative 5.

Mr. Amaru: This is strictly rhetorical, but I want to tell the rest of the Council members who weren't at the Groundfish Committee meeting that despite the eloquence of Mr. Russo's attempt to reflect what happened at the meeting, in fact there was not a universal affirmation of the alternative that we selected. There was

one vote against, but that doesn't reduce the impact that the discussion carried strongly in the direction of that alternative. I have also listened closely and I haven't said anything because I said what I needed to say at the Groundfish Committee meeting. Despite the implications and the difficulties and the slings and arrows of very frustrated fishermen, I believe that if there were going to be an additional alternative and discussion, it should have centered around Alternative 6, however, that didn't happen so we are left with the two that we have on the table and I would have to continue to support the motion that I supported at the Groundfish Committee meeting.

Mr. Smith: Other comments?

Mr. Bouchard: I have a question as to the baseline days-at-sea. If a Council member might put that forward as a proposed alternative, I am sure you could make a phone call to Woods Hole to get the data back. There is more than enough time to consider that today. If somebody on the committee would like to put that forward as a proposal, I think it has a lot of merit because it does treat everybody, every single person equally.

Mr. Smith: You made that point well before and no one offered it. They have their right to do it again, if they so choose, but then I guess we have to move on.

Mr. Bouchard: I just request that a Council member may do that.

Mr. Anderson: Carl, could I hear it once again to make consideration for its possibilities?

Mr. Bouchard: We just keep coming up with an equity issue, big boats, small boats, areas in my backyard or your backyard. We are in this together and everybody is suffering the consequences. So if everybody shares equally, if it is one day or ten days, it doesn't matter if you are out there with a fishing pole or a party boat or if you have a 100' dragger, you should share your portion of the burden. I don't know exactly how you arrived at the 88 days-at-sea for fleet average, but that connotates a given number of pounds of groundfish which is what you were looking for to come up with so many million pounds of groundfish for the year. If you divided that by the number of boats, whether they had fleet days or individual days, put that into the computer and asked how many days does it take to come up with 1.2 million pounds of codfish, I think this is going to come out real easy. If a person is on fleet days, and another person is on individual days, you can't say that both groups should take a certain specific number of days because the answer comes out different. You can't say they should take five days or ten days, it takes a percentage of their days to come up with the accurate number.

Ms. Stevenson: We had a side discussion about whether or not it would take a plan amendment and it wouldn't, but the whole basis that the intent of Amendment 7 was

that there not be more than 50% reduction in days. I had a question for Carl, in this aspect, if it was 40 days out of your 88 that you would lose, would you have the same position?

Mr. Bouchard: Everybody is going to share equal. Eighty-eight (88) days isn't enough for anybody. I don't believe that is going to be the case because I think there is more than 2.5 million pounds of codfish being landed and you are only looking to save 1.2.

Mr. Avila: Carl, are you proposing this for everybody who has fleet days or just for the people who fish in the Gulf of Maine?

Mr. Bouchard: For everybody who has a groundfish permit.

Mr. Avila: So for the fellow out of New Jersey who uses his for flounders, he should give up a percentage to save codfish in the Gulf of Maine.

Mr. Bouchard: I thought we were talking about area 42°?

Mr. Avila: That's what I just asked, are you saying for everyone within the range? There are people down in Virginia that have 88 days.

Mr. Bouchard: I am not too concerned with the people in Virginia so far as the codfish.

Mr. Williamson: Carl, when we were in Woods Hole, I think you heard a proposal I was making at the time that would talk about shutting...

Mr. Bouchard: You wanted to take a 20-day block of time.

Mr. Williamson: And out of that May/June period, which is when we have an intense concentration of effort on codfish, and the analysis for that is that we would achieve the equivalency here that we were looking for. I think you are getting at the nut of what we have to do, and your question is the mechanism to go about doing it. I don't think it can be done here today, but you are talking about equivalency of something like 20 days for everybody to get at the amount of codfish we are trying to target.

Mr. Bouchard: Are you telling me that there is only 10 million pounds of codfish landed? What is the goal of codfish to be landed? You are talking about taking 20 days out of 88 which is 25%. How many codfish during the Amendment 7 program? You are talking about a lot more than 7-8 million pounds.

Mr. Haring: The target TAC for the first year is 10 million pounds combining Georges and Jeffreys.

Mr. Bouchard: So you want to save 10% which means everybody would take approximately 10% of their days off. Is that correct?

Mr. Haring: It is not a straight forward, pound for pound, kind of thing. It deals with fishing mortality rates and it is not just saying we had 10,000 days and 30 million pounds and we want it to go down to 10 million pounds so we cut the days in third.

Mr. Bouchard: But you are looking to save approximately 10% of the codfish landing, isn't that correct with the 1.2?

Mr. Haring: No, we didn't make that calculation.

Mr. Bouchard: Well the goal here is to take away 1.2 million of landings.

Mr. Haring: Not explicately, no. We are using that as a benchmark to compare different alternatives in a short-term kind of analysis as to what would give an equivalent result. But we are not looking to just say 1.2 million pounds, that is not the objective.

Mr. Bouchard: I was appointed to a committee to come up with a possible alternative to this default and then that kind of fell apart and I just followed along with the process with the meetings in Danvers and Woods Hole. This committee's goal was to come up with an alternative plan that would equal 1.2 million pounds of codfish and the Regional Director said that if somebody could come up with a proposal that did that, he would accept it if the Council voted for it. So to me we keep coming back to 1.2 million pounds of codfish. That's what all these numbers were run for two weeks ago down in Woods Hole.

Mr. Haring: As I said, that was a way of comparing the short term effects of one closure with another but when you start trying to look at days-at-sea and how many pounds per day all of the vessels that fish in the Gulf of Maine catch and then just keep adding a day until you reach the 1.2 million pounds, you raise all sorts of other complications.

Mr. Bouchard: What we keep coming back to is that we are asking a small group to come up with this percentage of the landings rather than take it from the entire community and I don't think it is right to ask any group or sector to do it for everybody else.

Mr. Smith: I don't believe, at this late date in this process, we can just call Woods Hole and get a new number and, effectively, make a change of this magnitude without having informed the public that there is an entirely different concept that now was adopted today. So I think John had the right idea, if this is an idea for the future that may be better than closed areas in a certain time period, it is going to

have to get developed and analyzed further --- it can't be done today. You are sincere about it and I appreciate it, but we are beating a dead horse.

Mr. Joe Orlando, Gloucester fisherman: I am also an inshore dragger and I did attend the meeting at Woods Hole and our number one alternative is Barbara's proposal for the two blocks. The numbers were there so let's go with it, please. I only have 88 days next year, I can't lose one more day to any other kind of alternative. I don't know if I will make it with 88 days, but I don't want to lose any more.

Mr. Smith: Other comments? Seeing none, the motion on the floor is for Alternative 5 with no adjustment as it exists in the document with 138, 139, 140 and 147 closed from May 1 to June 9.

**The substitute motion failed on a voice vote with one abstention, Ms. Kurkul.**

Mr. Smith: The original motion is now back on the floor which was the proposed action column in the document with the two adjustments that it would be a one-year sunset and the default would then become Alternative 6.

Ms. Kurkul: Additional clarification is needed on this motion. It seems to imply that if November and December were open that the use of pingers in that time period would only be for one year and that there would be a sunset on the pinger use as well?

Mr. Haring: The Groundfish Committee when they discussed allowing the use of pingers by gillnetters into the closed areas, the language of the motion was contingent on a recommendation of the Take Reduction Team. There is no recommendation on this because they haven't met to make this recommendation or not, so having it for one year would provide an impetuous to at least get a recommendation from them to give the Council the ability to analyze and make whatever long term decision they wanted to about the use of pingers in November and December for 1997 and beyond. I think that was pretty much what the committee had decided and having this in year for this year based on the data that is available and summarized in the appendix is justifiable based on the data. Perhaps the broader picture needs to be reviewed and analyzed by all of the affected parties and that includes the Council and the Take Reduction Team for 1997 and beyond.

Mr. Nelson: Maybe Pat has more of a clarification on this, but the Council voted on Framework 14 which suggested to the Regional Director to consider using pingers in the November and December and the September and October time frame and if November and December remained closed, the considerations of what happened with Amendment 7 would apply to November and December. If we are moving it so that November and December are not in consideration here and the RD has considered

the use of pingers from September 15 through December 31, I am not sure what this needs to be in this motion for and perhaps we ought to get further clarification on what NMFS is considering with Framework 14. The Take Reduction is not on the table here and that is something that happens later on, if anything is going to happen at all. So we have Framework 14 sent to the Regional Director and I thought I had earlier that that was approved, but perhaps we need some clarification on it.

Ms. Kurkul: I think it is Framework 15 that would close from September through October and that was approved and will be effective September 15. I agree generally with all the other comments John made. If the decision is that there is information available to show that pingers are effective in the November/December time period, if the Council is moving to remove the groundfish closure for that time period, then what the TRT does at a later point can be part of a later framework process. I can't see tying this action to that TRT action.

Mr. Smith: So you are suggesting that it is cleaner if we just not say that pingers are required in November and December if we go with the May option.

Ms. Kurkul: I am suggesting that if you are going to open the November/December time period, you may as well allow pinger use in there and not have a sunset on that pinger use.

Mr. Smith: I am trying to figure out how to construct this as what is becoming a more complicated motion as we speak.
Mr. Nelson: We don't need to address November and December if we are going to put in a new motion that substitutes for that. If the new motion is substituted for November and December, the use of pingers and gillnetters in that area is under a framework.

Mr. Haring: If you open up November and December to the use of pingers and then the default to the proposed action is a different closure in May, in other words, it doesn't revert back to the November and December closure again, then that action would stay unless you explicately put a sunset provision on it.

Ms. Kurkul: Just take the words "one year only" out of the motion.

Mr. Haring: Then the default would be the Mid-coast Closure in May and so on.

Mr. Smith: Then if everyone agrees, we will take discussion. Audience?

Mr. Art Odlin, Resource Trading Company: Before you vote on this, I would like to have some clarification on what is means by "vessels capable of catching groundfish?" Does that mean that we are going to have to go to another framework? At the public hearing held in Portland by Chris Finlayson on June 11 this issue was discussed and he came back to the Groundfish Committee with a suggestion that we used exempted

gear which would allow mid-water trawlers in it. I respectfully request that the Council do that now and change it to exempted gear. We have Framework 18 now that has been six months in development. May is an essential part of the herring fisheries in the Jeffrey's middle bank area. If you are not going to do that, how are you going to address it?

Mr. Smith: If I understand this correctly, the presumption we make in Amendment 7 and all of these other frameworks is that the exempted gear doesn't take groundfish. That's why it is allowed. If we agree with that, then his proposal ought to be something that we can accept. Having said that, is there a problem with that that someone may have.

Mr. Odlin: We do have sea-sampling data and Andy has given us an oral report on it, zero. Further, I forwarded information on to David Pierce who is working it out now, but that is basically zero. If there is a problem with this perception of this gear, why haven't we gotten more observers out. The industry will take them any time day or night. This thing has been going on too long and dragging on.

Mr. Haring: When the Council discussed this in Amendment 7, they had a list of exempted gears including mid-water trawls. It said it was exempt from all of the provisions, but they said that in the case of the Gulf of Maine area closures, that list of exempted gears did not include mid-water trawls because they wanted a review of the bycatch data from observers and some other concerns. So nobody has brought forward that analysis or requested that exemption or whatever to get that process formally initiated. I don't think the Council can just do it at this point in this framework.

Mr. Odlin: My question is, is an oral report from the Regional Director, who left the room to go out and call his office to get it and came back and said it was zero bycatch, especially when it was in juvenile protection areas, isn't that a valid review? Do you have to have it in print? If it isn't why hasn't it been requested?

Mr. Smith: I trust the Regional Director as much as the next guy, but the process is to have a defense for allowing an exempted fishery. Maybe your frustration is well noted because we haven't come to closure on the thing yet and it may have to be another framework, but I am not prepared to say "let's change the word," simply because the RD said in passing after a phone call that things were okay. To me, that is not what you would call justification unless it is supported by something else that I don't know about.

Ms. Kurkul: I think what Andy did was to report on the information that was available. It was limited, but on the other hand, it did show zero to minimal bycatch. The problem at this point is that despite having that information, the Council did move forward with a list of exemptions that did not include mid-water trawl for those areas. They intentionally decided to exclude mid-water trawls from those

areas. So there has to be some Council discussion now on why they would be changing their position on that.

Mr. Smith: So it would probably not be appropriate to just change the words here now since we had a record of the Council saying we weren't going to include it. We can address it, but we can't do it today. So the motion is as stated on the board and as we have discussed. We have a record that says the Council chose not to include that gear as an exempted gear when they submitted Amendment 7. As much as you might like us to do it just because we heard a good argument in favor, we just can't change that record.

Mr. Odlin: Unknown comment.

Mr. Coates: I will pledge that we will address this as soon as the Groundfish Committee can get around to it. If it takes another framework to take care of this current exclusion, because mid-water gear cannot be fished in these areas, we should have something assuming the data shows no bycatch. There is going to be some more discussions about this today with regard to the whole issue of the other closed areas, but if it doesn't show any problem then we can move forward with the framework and have it in place in plenty of time to take care of your concerns about next May. There is no impact in November and December, that closure goes away.

Mr. MacLeod: A point of clarification, does this motion mean that if the proposal of the closure of the two zones does not provide the results necessary that you then go immediately to Alternative 6? Or does the motion say that if the two areas provide close to what you are looking for, that you would have the option of adjusting it between there and Alternative 6?

Mr. Coates: You have to remember that the timing of this is May, 1997 for this alternative to go forward. We are then talking about May of 1998 for the same thing or if we discover that it isn't working, then we would be making an adjustment and the default would be triggered for May of 1998. That should give us enough time to make a rational decision as to whether or not this May of 1997 action met what we feel to be our goals.

Mr. MacLeod: But you have that zone from where you are now to the ultimate Alternative 6 and somewhere in between that zone to adjust it?

Mr. Coates: Right. There is information that will be forthcoming, statistical information, and I am not how timely that will be and that is going to create a crimp. I truly hope that in April of 1998 we won't be trying to take some extraordinary action to prevent the default being triggered if in fact the information shows that everything is fine. If the information shows we have come close to our target recognizing there are other factors and everything else that has to be analyzed, then it would seem that this would go forward. The default only gets triggered if there are

some significant problems.

Mr. Smith: Or if we choose to do nothing, that's where the default is. If we choose to do nothing, in Year 2 we go to Alternative 6. What you are talking about is a little bit different. If we analyze after Year 1 and say "it really didn't do what we thought it was going to do," then we can adjust the time or area.

**Tape 4**

Mr. Williamson: Just to be clear, my intent when I was calling for a sunset in the default was that I was sure that the action that we are taking today is going to be discriminating against a certain segment of the fleet, namely the small boats working this area. My intention is that we are going to get to work right away trying to find some alternative to that default and to the action that we are taking. It isn't that we are going to be necessarily waiting for the analysis to be done as to what this May closure ends up looking like because it is fairly clear to me that the repercussions of this are going to be very bad. I am trying to head off having this thing become cemented in as opposed to our strategy in the future.

Mr. Smith: Fair enough. Other comments?

Ms. Alden: I just want to say I don't think we should be saying that we are going to be looking at the effects of this measure. We should be right up front and say that a year is too quick for us to ever know that. Every time we delude ourselves and we delude the public to that effect. So I think the reason for the default really is what John just said which is that the impacts of this are going to be very severe on a small group of people. That is the problem with area closures and it is exactly what happened down east. The reason for the default alternative is that more people want to look at what is going to happen next year. We don't know what the right answer for this is and this gives us only a one year fix.

Mr. Smith: I think we would all like this better if we called this an "interim" measure for this year to avoid the default of November and December and during this interim period the committee may want to find a better alternative for the future.

Ms. Fiorelli: I am not sure what your intent is but Framework 15 authorizes an experimental fishery with the use of pingers between September 15 and October 31. Are you, by this motion, authorizing a continuance of that experimental fishery for November and December?

Mr. Smith: We are requesting it.

Ms. Kurkul: Not an experimental fishery, you are opening it up to the use of pingers in November and December.

Ms. Fiorelli: That was precisely my question.

Mr. Smith: Under Amendment 7, November and December would be closed because of harbor porpoise protection. Under this motion, one of the objectives of it is to allow gillnetters to fish in November and December and we require that they do it with pingers.

Additional comments on the motion? Seeing none, the motion is as you read it and I will state it again. It is blocks 132 and 139 closed in May, November and December gillnetters would be able to fish with the use of pingers and the default after year 1, if we did nothing further, the default for year 2 would be Alternative 6, 20 days out in the entire Mid-coast area.

**The perfected motion carried on a show of hands with 3 abstentions.**

Mr. Anderson: Since the motion is passed right now and we would almost have to consider that the document that was passed out to us for the draft of Framework Adjustment 19, I would like to see a little more of a detailed concern to what is on page 8, item 4 which says "conservation and management measures shall not discriminate between residents of different states." I feel that the answer or the justification of it within the document is very short, a little sweet and not fully investigated.

Mr. Smith: So your request is basically where National Standard 4 is discussed that it have more discussion about what the relative impacts are going to be on residents of different states in the Gulf of Maine.

Mr. Anderson: That's right, residents of different states and also different gear sectors.

Mr. Haring: If Erik has raised a legitimate concern about the distribution of impacts here, rather than have me kind of make something up, I would appreciate getting some comment in response to his concerns from the Council that I can use to substantiate this discussion here. Does this discriminate against vessels from a particular state? The 602 Guidelines do provide some guidance on this and I think that the question of fairness and equity is described in there. You may take some action which affects groups differently provided there is a conservation basis for doing that and it is expressed in the document.

Mr. Smith: I thought about this as the folks from New Hampshire made their good case on that point and the thing that struck me is that the reason the boats from the southwest corner of Maine to the northeast corner of Massachusetts appear to be more heavily impacted by this proposal than residents of other states is because the area that produces the most cod happens to be right out offshore of that geographic area. If you are going to save cod landings in the shortest period of time possible,

you have to go to the place where most of the cod are taken. You can have it both ways and we voted no on that motion. You could broaden the area and push it up the coast of Maine and call it more time, but that is a different type of impact which we chose to vote no on. So it is because Jeffreys is right in the bite of southwestern Maine to northeastern Massachusetts that people who go to that area to fish are going to see more consequence than people who don't go there. Phil has a good point, this is a hot issue and the staff shouldn't be left to their own devise.

Mr. Rathbun: I agree, in a sense, to Erik's point, but on the other hand, the Nantucket Shoals closed area impacts the citizens of Rhode Island and Massachusetts almost exclusively and we didn't hear any complaints from the people of New Hampshire when we put the Nantucket Shoals closed area in. We put it in because the fish were there and we needed to protect them there. We didn't put it in specifically to address any particular state, we put it in for a fisheries issue entirely and it had nothing whatsoever to do with the people that lived in the area. So although it is a point, I don't think it is a valid point to obviate the closure.

Mr. Smith: Other thoughts to contribute to Phil's request?

Mr. Nelson: To Ben's comments, I think that the Council went to great length as far as discussing the problem that we were going to have with a closed area in Georges and the impacts that were going to take place with displacement. I think this is exactly what we are looking at again in closing a small area off of the Maine/New Hampshire/northern Massachusetts coastline and what type of displacement are we going to be faced with and how much of an impact that is going to be on the folks in that area. I think we did discuss the impacts from the closures in the Georges area and there was a lot of concern about the displacement to the Gulf of Maine area which, of course, we saw happen and what we are dealing with now is part of the problem. So we do need to address what Erik has brought up and whatever comments we can provide certainly would be appropriate and it is helpful.

Mr. Amaru: John is right and it is an issue that occurred in southern New England when we lost some of our ground. I don't now what the answer is but one thing I do know in looking at the numbers for the lost revenue, is that it seems to me that the group of fishing organizations that were in support of the motion that was passed are impacted far more than those vessels that are not in support of it in terms of lost revenue for the period 314,000. I know there is a larger sector of boats that are fishing from those areas and producing greater revenue but the amount of revenue lost is four times greater for one sector than for another. If we had not done this action and we were stuck with the original default, the amount of revenue that would have been lost
to the gillnet sector would have been almost six times as great.

Mr. Smith: John, if you don't mind I want to take someone ought of order to clarify the Magnuson Act for us.

going to suggest is that we point out that while we recognize that it has different impacts, we have another closure which one sector of the fleet has already gone through and has already been impacted by. We have another closure which will virtually solely impact us from the State of Massachusetts. This closure area impacts vessels from all three states and some from further south and it very significantly impacts at least the trawl fleet in Portland. So the impacts are spread broadly amongst the three states. The alternatives may be less in their particular state, but it certainly impacts all three.

Mr. Amaru: That is what I was going to say and I would also like to add that Pat Kurkul's clarification was timely and very well put. It certainly helped me understand something that I had a false understanding of because, like Erik, I felt that that section of the 602 Guidelines was somewhat contradicting what we could do. But put in the guise of your definition, it helped considerably.

Mr. Anderson: Could you explain what you said a little bit more, Barbara, about the measures that affect the state of Maine?

Ms. Stevenson: Didn't we just have a northeast closure? Wasn't it closed all of last month?

Mr. Anderson: That's the concern I have raised with the fact of this analysis is that the alternatives that are available to the participants of this particular area of this particular closure cause a level of concern for me. It is not that the impacts don't spread throughout different participants, it is the alternatives that are available for those participants that create a situation I think is discriminatory.

Mr. Smith: We have dispensed with the first item on the agenda, which was Framework 19, unless people have something else to add to that subject, and it also happens to be noon. Let's break for lunch now.

Mr. Coates: I just want to make sure that everybody understood that in the motion that was passed regarding the use of pingers, that the pingers in question were NMFS approved pingers. This is not a new pinger, they are approved by the National Marine Fisheries Service for use in these experiments. I think that is implied in the motion, but I just wanted to clarify that. If a new pinger comes on and is accepted by NMFS, so be it, but it would have to be a pinger that they endorsed.

Mr. Smith: Is that clear with everybody?

**End of Framework 19 Discussion**