

3.0 Proposed Management Action

3.1 Habitat Protection and Preservation

The Council has identified the Essential Fish Habitat (EFH) for herring and other species it manages. EFH provisions were submitted for all Council plans in one document that amends existing Council management plans, and describes the EFH for Atlantic herring. The applicable provisions of this document that relate to Atlantic herring are incorporated into this FMP by reference. This includes the description and identification of herring EFH, the threats to EFH from fishing and non-fishing activities, and the conservation and enhancement measures to protect EFH for Atlantic herring.

3.2 Specifications

The Regional Administrator, after consulting with the Council, determines annual specifications relating to OY, DAH, DAP, JVPt, JVPs, IWP, BT, U.S. at-sea processing (USAP), and the Reserve. The Council and the Regional Administrator will review annually the best available biological data pertaining to the stock. The allowable biological catch (ABC) (based on the target fishing mortality and the estimated biomass) for the coastal stock complex (CSC) will be determined. The fishing mortality rate associated with the ABC will not exceed the overfishing definition. The biomass of herring at the end of the fishing year will not be less than the minimum stock size threshold specified in the overfishing definition.

ABC will be equal to the target fishing mortality (F_{Target}) times the estimated biomass. The current biomass is estimated to be much larger than B_{MSY} and is only lightly exploited. Applying F_{Target} to this biomass results in a quantity greater than F_{MSY} times B_{MSY} . Because estimates of current biomass are very uncertain, the wide fluctuations in stock size often experienced by pelagic resources, uncertainty in the estimate of MSY, and the key role of herring in the ecosystem, ABC will be limited to F_{MSY} times B_{MSY} during an initial "fishing up" period. This will allow for a reasonable expansion of the fishery and preserve the option for larger harvests in the future as the quality of data and assessment information improves.

Optimum yield (OY) will be less than or equal to ABC minus the expected Canadian catch (C) from the stock complex. This formula could result in an unrestricted Canadian catch severely limiting the U. S. harvest; therefore, the estimate of the Canadian catch deducted from ABC will be no more than 20,000 mt for the New Brunswick juvenile harvest, and no more than 10,000 mt for the Georges Bank Canadian harvest. The size of the Canadian harvest and its impact on the U.S. fishery will be monitored by the Council's Herring Committee and the Commission's Herring Section. Successful management of this trans-boundary resource will rely on developing an effective means to coordinate U. S. and Canadian management decisions.

$$\text{OY} \leq \text{ABC} - \text{C}$$

OY will not exceed MSY.

$$OY \leq MSY$$

This restriction, however, may not preclude the harvest in a specific year from exceeding the harvest associated with MSY. When stock biomass is larger than B_{MSY} , the target fishing mortality may produce a harvest that exceeds the MSY in the short term. This approach will not be taken during the initial period of the plan for the reasons given in the discussion on ABC.

The establishment of OY will include consideration of relevant economic, social, or ecological factors. For this reason, OY may be less than ABC-C. Management of herring in U.S. waters is complicated by historical variations and fluctuations in abundance, questions concerning the intermixing rates of various spawning components, the importance of herring as a prey resource and uncertainties concerning the Canadian harvest. One of the goals of this FMP is to provide controlled opportunities to U.S. fishers to enter the fishery, providing an economic opportunity to vessels under severe restrictions in other fisheries. Estimates of the available domestic harvesting capacity show that the domestic fleet has the capacity to harvest the entire herring resource should fishers choose to do so. This choice is contingent on expanding existing herring markets or developing new markets, and the capabilities of the individual vessels. The complexities of predicting world demand for herring products and the opportunities available in the export market argue for a conservative stance when allocating the herring resource. If part of the OY is assigned to directed foreign fishing, this herring will compete directly with the efforts of U.S. Processors and harvesters to enter world herring markets. For this reason, there is no opportunity for any part of OY to be made available for directed foreign fishing – TALFF is prohibited. Setting OY equal to DAH (plus a reserve) will help achieve a risk-averse approach to management of the herring stock while it encourages U.S. development of the resource. This will provide the greatest overall benefit to the nation by stimulating further development of an underutilized fishery and diverting effort away from other overfished fisheries.

OY is equal to the expected domestic annual harvest (DAH) plus a reserve.

$$OY = DAH + \text{Reserve}$$

Factors to be considered in determining the amount of OY, if any, assigned to the reserve will include:

- uncertainty and variability in the estimates of stock size and ABC;
- uncertainty in the estimates of Canadian harvest from the CSC;
- requirement to insure the availability of herring to provide controlled opportunities for vessels in other fisheries in the mid-Atlantic and New England;
- excess U.S. harvesting capacity available to enter the herring fishery;
- total world export potential by herring producing countries;
- total world import demand by herring consuming countries;
- U.S. export potential based on expected U.S. harvests, expected U.S. consumption, relative prices, exchange rates, and foreign trade barriers;
- increased/decreased revenues to the United States from foreign fees;

- increased/decreased revenues to U.S. harvesters (with/without joint ventures);
- increased/decreased revenues to U.S. processors and exporters;
- increases/decreases in U.S. harvesting productivity due to decreases/increases in foreign harvest;
- increases/decreases in U.S. processing productivity;

The Regional Administrator, after consulting with the Council and the Commission, may transfer any amount from the reserve to the DAH during the fishing year.

Domestic annual harvest (DAH) is composed of domestic annual processing (DAP), the total amount allocated to processing by foreign ships (JVPt) , and the amount of herring that can be taken in U. S. waters and transferred to Canadian herring carriers for transshipment to Canada (BT). When determining JVPt, the Council will consult with the Commission to insure close coordination with the Commission's allocation for Internal Waters Processing (IWP) operations.

$$DAH = DAP + JVPt + BT$$

Part of DAP may be allocated for at-sea processing by domestic vessels that exceed the vessel size limits (see section 3.6.6). This allocation will be called the "U.S. at-sea processing" (USAP) allocation. The term "at-sea processing" refers to processing activities that occur in the exclusive economic zone outside state waters. When determining this specification, the Council will consider the availability of other processing capacity, development of the fishery, status of the resource, and opportunities for vessels to enter the herring fishery.

Rationale: One of the goals of this plan is to provide opportunities to U. S. fishermen displaced from other fisheries in the northeast and mid-Atlantic area. Estimates of U. S. harvesting capacity clearly show existing U. S. fishermen have the capability to catch all of the currently available herring. Whether they choose to do so will depend on the ability of these fishermen to enter existing markets and develop additional markets for herring and the capabilities of their vessels. Any directed foreign fishing will interfere with that goal, and for that reason TALFF is prohibited. Allowing an opportunity for JV's will provide additional opportunities for U.S. catcher vessels to enter the herring fishery.

With the exception of freezer trawlers under the proposed size limits, most existing herring processing capacity is on land. Growing interest in the Atlantic herring fishery has resulted in several initiatives to develop increased processing capacity in communities. These initiatives include plans for increased shoreside processing capability (including the stationing of a processing vessel at a pier) and the entry of several small freezer trawlers into the herring fishery as a supplement to their squid fishing activities. These plans have been based, in part, on the existing business climate in the area. In the last eighteen months, there has been interest expressed by a large domestic processing vessel to enter this fishery. This vessel has been prevented from receiving a permit to catch herring by legislation, but has not yet processed herring at sea. The introduction of a new large vessel at-sea processing sector may create uncertainties in the industry that will hamper shoreside development. By defining an allocation that applies to the at-sea processing sector, the Council can control the development of at-sea processing capacity if necessary. This will help insure a stable business environment for the communities and businesses

that have relied on the herring fishery, and provide an opportunity for fishing communities hurt by increasing regulations in other fisheries to enter the herring fishery.

The specification of BT allows the continuation the historic trade in herring between the U.S. and Canada, while addressing the concerns of other U.S. processors by preventing this trade from being an unlimited transfer that reduces their access to the resource.

3.2.1 IWP/JVP Specifications

Joint Venture Processing (JVP) and Internal Waters Processing (IWP) operations are essentially the same type of operation from a domestic fishermen's perspective. In each, a foreign processing vessel is contracted to process fish which are harvested by domestic vessels. The only difference is where the processing vessel is located and under whose authority the JVP or IWP is granted. JVP vessels process fish in federal waters while IWP vessels process fish in state waters. Currently, both receive fish harvested primarily in federal waters.

All herring harvested by domestic vessels is used in some manner. The DAH is comprised of the amount used by domestic processors, the amount used by foreign processing vessels (regardless whether the processing vessel is located in the EEZ or in state internal waters), and the amount transhipped to Canada on Canadian herring carriers (BT). The amount available for use by foreign processing vessels is the total joint venture allocation—JVPt.

$$\text{DAH} = \text{DAP} + \text{JVPt} + \text{BT}$$

The amount expected to be used by domestic processors (DAP) must be estimated and subtracted from the DAH along with herring transported to Canada. If there is any DAH remaining, it is available for joint venture processing activities. According to 50 CFR 600.315(h)(iii), JVP is derived from DAH, indicating that DAH must be determined before establishing a JV allocation.

$$\text{JVPt} + \text{BT} = \text{DAH} - \text{DAP}$$

As explained above, JVPt includes all herring available for foreign processing vessels. This includes both joint venture processing in the EEZ and internal waters processing (IWP) within state internal waters. The amount available for processing in the EEZ is called JVPs; the amount available for state internal waters is IWP.

$$\text{JVPt} = \text{JVPs} + \text{IWP}$$

The Council's Herring Committee and the Commission's Herring Section will consult and recommend the breakdown of the JVPt allocation into JVPs and IWP. Factors to be considered include: requests received, demonstrated intent to conduct an operation, and consideration of resource status and potential increases in DAP. Recommendations will be forwarded to the Regional Administrator through the Council and implemented as described in section 3.3.4.

The Commission's Herring Section may allocate the amount available for IWP to individual states. These allocations will be established as a compliance criteria for the states and will include reporting criteria for the processing vessels. Reporting criteria will be established based on the

recommendations developed through the ACCSP (section E.6.1.4).

The total allocations (DAP, JVPT, BT and the Reserve) in any one management area or subarea will not exceed the TAC set for that area or subarea during that fishing year. In the event of a closure to a directed herring fishery in any one management area or subarea, BT, JVPs and IWP operations will cease to receive any herring caught from a closed area or subarea.

Nothing in this section will restrict a state from allowing foreign processing vessels to process herring in state internal waters which were caught in federal waters in conjunction with the M-SFCMA requirements section 306(c) so long as the area or subarea in which they were caught is open to directed herring fishing.

3.2.2 Initial Plan Specifications

The Council, after consulting with the Commission, recommends the following specifications for the initial year of the management plan (1999). To simplify accounting, all catches on or after January 1, 1999, will be applied to the initial specifications and TACs. These specifications form the basis for the area specific TACs for the first year of the plan that are listed in section 3.6.3.1.

| Specification | Amount (mt) |
|------------------------|-------------|
| ABC | 300,000 |
| OY | 224,000 |
| DAH | 224,000 |
| DAP | 180,000 |
| U.S. at-sea processing | 0 |
| BT | 4,000 |
| JVPt | 40,000 |
| JVPs – Total | 15,000 |
| JVPs – Area 2 | 10,000 |
| JVPs – Area 3 | 5,000 |
| IWP | 25,000 |
| Reserve | 0 |

Table 3- Initial recommended Atlantic herring specifications

Rationale: The initial specifications are designed to allow significant growth in the herring fishery, yet take a cautious approach to overall harvest levels. As summarized in section 2.5, the herring resource is in an abundant, under-utilized condition, and biomass exceeds B_{MSY} . This status provides the opportunity for increased landings. As noted in the report for SAW-27, however, "...there is considerable uncertainty about current stock size which could be overestimated" (NEFSC 1998a). The report also notes that "A 5 year retrospective analysis of SSB and F revealed a considerable positive bias in the estimation of recent-year biomass and negative bias in fishing mortality." Rather than use the current biomass, which may be overestimated, as the basis for ABC, the Council is recommending use of an ABC that is based on B_{MSY} and is recommending a conservative OY that is 93,000 mt less than MSY. This precautionary approach will provide additional protection to the resource as the management measures are implemented and their effectiveness evaluated. At the same time, landings can increase from current levels.

DAP and BT are derived from the discussions in section E.6.4.3.1.1. DAP is based on existing processing capacity with the addition of nearly 80,000 mt to account for the introduction of new capacity, possible misreporting in the bait fishery, and increases in processing by existing processors. The amount allocated to BT is about ten percent larger than the highest amount reported transferred to Canadian canneries in any of the last ten years (3,690 mt in 1996 according to Maine DMR). These transfers are part of a traditional cross-border trade in raw herring that helps U.S. sardine canneries obtain herring during periods of low resource abundance in U.S. waters. 40,000 mt is recommended for JVPt after reviewing recent foreign processing

performance. While this level is lower than the 80,000 mt allocated by the Commission for the 1998/1999 IWP season, it is over three times higher than the highest actual combined JVP and IWP performance in the last ten years and allows for substantial temporary participation by foreign vessels in the U.S. fishery. The Council and the Commission agreed on the recommended allocation of JVPt to JVPs and IWP. JVPs can only be harvested in Management Areas 2 and 3 because the resource in Area 1 is needed to supply domestic needs (including support of the two-way trade with Canada that benefits the sardine industry).

The zero amount specified for USAP will prevent large domestic processing vessels from entering the fishery in 1999. Concern has been expressed that this results in unfair treatment for large domestic processing vessels, which cannot participate in an activity (at-sea processing of herring) that is permitted to foreign processing vessels through joint ventures. It was suggested that this action does not support one of the purposes of the M-SFCMA ("...to encourage the development by the United States fishing industry of fisheries which are currently underutilized or not utilized by United States fishermen..."). While the biological, economic, and social impacts of this action are described in detail in the environmental impact statement (section 7.1), the following discussion summarizes the Council's rationale for this action.

Under normal circumstances, foreign vessels are prohibited from catching or processing fish in U.S. waters. In limited circumstances, foreign vessels are permitted to process fish caught by U.S. vessels, both in the EEZ and in the internal waters of a state. Activities in state waters are controlled by the governors and will not be addressed in this rationale. In the EEZ, these vessels are permitted into the fishery only when it suits the needs of the United States, and are limited to processing fish in excess of the capacity needed for domestic processors. Strict permitting requirements are imposed, including, at times, restrictions on markets for the fish so that they do not directly compete with domestic processors. Reporting, recordkeeping, and observer regulations are more stringent than those imposed on U.S. vessels. JV activity is reviewed on an annual basis through the specification process. Each permit request is carefully considered by the Council. The performance of the vessels involved is a consideration for future allocations; future access can be denied based on prior enforcement actions or a failure to meet the permit requirements that are imposed.

A key element in the review of JV activities is the impact on domestic processing activity – specifically, on the east coast, shoreside processors since there have not been any large domestic at-sea processors in east coast fisheries. The underlying concept is that JV activity is only allowed until adequate U.S. processing capacity is developed. In summary, under strictly controlled, rigorously reviewed circumstances, some at-sea processing by large foreign vessels is possible. The reality is that in recent years the actual performance of herring JV's has been insignificant, and has occurred only in connection with mackerel JV's (confidentiality restrictions prevent listing actual JV herring catches in 1997).

The Council may choose to allocate a portion of the Atlantic herring resource to at-sea processors if it determines that will benefit the herring industry. The Council's initial recommendation to specify USAP at 0 is because of a desire to maintain the status quo in the industry until the effectiveness of the management plan can be evaluated. By contrast to JV's, large domestic processing vessels have a great deal of flexibility once allowed into the fishery. They can compete

in the same markets as other processors without restraints. Generally, regulations for domestic vessels are not as restrictive as those for foreign vessels. Once allowed into a fishery, there is the perception that they will have earned permanent "rights" to participate. Unlike the short-term participation of JV's, there is a perception that large domestic processing vessels will seek to become permanent participants in the fishery. In sum, the possible impacts of large at-sea processors in the Atlantic herring fishery are not clearly understood, arguing for a cautious approach to their introduction into the fishery.

Nevertheless, the possibility that a foreign JV may be allowed to process at-sea while a domestic vessel cannot strikes some as inconsistent with the purposes of the M-SFMCA. While the M-SFMCA encourages the development of underutilized species by the U.S. fishing industry, it does not prescribe that all possible sectors must have access to a particular resource. Fishery management councils are allowed considerable discretion in determining the form of the industry that will develop underutilized species and achieve optimum yield. The Council's recommendation to allocate zero metric tons to the at-sea processing sector is consistent with the exercise of that discretion.

The above does not address what some perceive is a fundamental question of fairness. The Council recognizes that in the short term, setting the at-sea processing specification at zero metric tons will appear unfair to some in the industry – particularly while allowing a limited opportunity for foreign JV's. This question must be balanced against the concerns of historic industry participants and their communities, as well as new entrants who have based their investments and business plans on the existing industry structure. These decisions have been based in part on a number of legislative initiatives that have limited the size of vessels that will be allowed in the U.S. fishing industry in the future, and have prevented large domestic vessels from fishing in the mackerel fishery and from catching herring with mid-water trawl gear. From their viewpoint, the sudden entry of large domestic at-sea processors is viewed as an unfair change in the planning environment. The initial judgment of the Council is that a lack of experience with large domestic processors argues for a cautious approach when allowing them into the fishery. For initial implementation of the plan, the Council has chosen to limit domestic participation in the fishery to traditional forms – harvesting vessels and at-sea processing vessels less than the proposed size limits, and shoreside processing facilities – supplemented, if necessary, by the temporary opportunity for short-term joint venture activities. National Standard 8 requires the Council to consider the impact of its actions on the sustained participation of fishing communities. Given the lack of information on the impacts of large at-sea domestic processors, the Council has chosen a cautious approach to protect the interests of those communities that are dependent on the herring fishery.

Finally, the Council is adopting a plan for a species that has not been federally managed for over sixteen years. There is considerable uncertainty in the estimates of DAP and DAH. The plan was crafted in an environment that did not include large domestic processing vessels and only limited participation by JV's. At present, there aren't any large domestic at-sea processing vessels in the Atlantic herring fishery. One vessel indicated an interest in entering the herring fishery but has not done so – prevented, in part, by legislation which restricted NMFS from issuing a permit to the vessel to fish for mackerel or catch herring. Choosing a precautionary approach, the Council wants to evaluate the implementation of the plan and the effectiveness of the chosen measures

without the added complications caused by the rapid introduction of at-sea processing capacity. This provides the opportunity to evaluate actual processing capacity and make future adjustments to the management measures as necessary. It is relatively easy to prevent JV activity if it is determined that DAP has been underestimated and is sufficient to use DAH. It is not easy to eliminate large domestic at-sea processors once they are established in the fishery, as demonstrated by the recently approved \$90 million buyout of large catcher-processors in the Bering Sea/Aleutian Islands groundfish fishery.

As the herring fishery develops and the Council evaluates the impacts of its management program, the specification for at-sea processing will be reviewed on an annual basis. In the future, if there is a demonstrated need for additional processing capacity that can best be met by large domestic at-sea processors, the Council may recommend allocation of part of the resource to this sector. Whether this occurs will depend on a careful evaluation of all relevant factors. The Council's action does not eliminate all opportunities for these vessels to enter the herring fishery. There is a possibility that the specification for USAP will be set at a level other than zero mt in the future. In addition, under the Commission's plan, large domestic processing vessels may be allowed to process herring in internal waters, subject to restrictions imposed by the state governors.

3.3 General Administrative Provisions

3.3.1 Permits

Vessel Permits Commercial vessels fishing for, possessing, or landing herring in or from the EEZ are required to obtain a federal permit. This includes vessels that transport herring from catcher vessels for delivery to dealers or processors. Permits will be issued under a vessel's U.S. documentation or state registration number. Vessel owners or operators who apply for a fishing vessel permit under this section must agree, as a condition of the permit, that all the vessel's herring fishing, catch, and gear (without regard to whether such fishing occurs in the EEZ or landward of the EEZ, and without regard to where such herring, or gear are possessed, taken or landed) will be subject to all the requirements of this part. All such fishing, catch, and gear will remain subject to any applicable state or local requirements. If a requirement of this part and a conservation measure required by state or local law differ, any vessel owner or operator permitted to fish in the EEZ must comply with the more restrictive requirement.

Permits are not required for a vessel that possesses herring solely for its own use as bait (for example, in the lobster and tuna fisheries) and does not have purse seine, mid-water trawl, pelagic gillnet, sink gillnet, or bottom trawl gear on board.

To receive a federal herring permit, vessels must annually declare their intent (by completing a permit application) to participate in the herring fishery. The application period will be defined by the Regional Administrator. Changes in information supplied for the permit must be reported to the Regional Administrator within 15 calendar days of the change. Information required on the application is specified in 50 CFR 648.4. Permits will be valid for the period May 1 through April 30 the following calendar year, or as designated by the Regional Administrator.

Permit holders will be required to carry their permit aboard the fishing vessel during fishing and offloading operations. It must be available for inspection upon request by an authorized officer. The Regional Administrator may, after publication in the *Federal Register*, charge a permit fee for administration and enforcement. In the Northeast Region of NMFS, vessels with a federal permit are required to comply with the vessel identification and marking requirements of 50 CFR 648.8.

For the purposes of this FMP, horsepower is defined as the total maximum continuous shaft horsepower of all the vessel's main propulsion machinery (46 CFR 10.103).

When a vessel is sold or otherwise transferred, the permit is assumed to transfer with the vessel. A written agreement between the buyer and the seller is necessary if the seller wishes to retain the permit. There are no limits (up to any maximum vessel limits adopted by this FMP) on vessel upgrades or replacements unless a limited entry system is adopted in the future.

Operator Permits Operators of commercial vessels permitted to harvest herring will be required to have an operator permit. No performance or competency tests will be required to obtain a permit. The permit may be revoked for violation of fishing regulations. Vessel operators may be permitted as follows:

Any operator of a vessel fishing for herring must have an operator's permit issued by the NMFS Regional Administrator. An operator is defined as the master or other individual on board a vessel who is in charge of the vessel. (Note: This definition is specified in the Code of Federal Regulations, 50 CFR 648.5). The operator will be required to submit an application, supplied by the Regional Administrator, for an Operator's Permit. The permit will be issued for up to three years. The applicant will provide his/her name, mailing address, telephone number, date of birth and physical characteristics (height, weight, hair and eye color, etc.) on the application, and will be requested to provide his/her social security number. In addition to this information, the applicant will be required to provide two passport-size color photos.

Permit holders will be required to carry their permit aboard the fishing vessel during fishing and off-loading operations. It must be available for inspection upon request by an authorized officer. The Regional Administrator may publish notification in the *Federal Register* and charge a permit fee for administrative costs of issuing permits.

Dealer Permits Dealer permits will be issued as follows:

Any dealer (as defined by the Regional Administrator) of herring must have a permit issued by the Regional Administrator. NMFS will determine the final definition of a "dealer", including the extent to which pump operators may be responsible for reporting. The dealer will be required to submit an application, supplied by the Regional Administrator, for a dealer permit that is valid until it expires, is suspended, or revoked. The applicant will provide the business name, the name of the person signing the application, mailing address, telephone number and principal place of business on the application. The permit cannot be transferred and will expire upon change in ownership of the business. The permit must be maintained at the place of business and be available for inspection by an authorized officer. Permits are not transferable.

The Regional Administrator may publish notification in the *Federal Register* and charge a permit fee for administrative costs in issuing permits.

Processor Permits Processor permits will be issued as follows:

Any processor of herring from the EEZ or a federally permitted vessel must have a permit issued by the Regional Administrator. The processor will be required to submit an application, supplied by the Regional Administrator, for a processor permit that is valid until it expires, is suspended, or revoked. The applicant will provide the business name, the name of the person signing the application, mailing address, telephone number and principal place of business on the application. The permit cannot be transferred and will expire upon change in ownership of the business. The permit must be maintained at the place of business and be available for inspection by an authorized officer. Permits are not transferable.

A processor is any individual who receives unprocessed Atlantic herring from a fishing vessel or herring dealer for the purposes of processing. In the Atlantic herring fishery, processing, or to process, means the preparation of Atlantic herring to render it suitable for human consumption, bait, commercial uses, industrial uses, or long-term storage, including but not limited to cooking, canning, smoking, roe extraction, salting, drying, freezing, or rendering into meal or oil, but does not include icing, bleeding, heading, or gutting.

Rationale: Permit requirements for vessels, operators, dealers, and processors identify the participants in the fishery. The plan gives some flexibility to the Regional Administrator to define "dealer" for purposes of the herring fishery. In this large volume fishery, some vessels may offload, through a pump, to numerous dealers for each trip. If pump operators are included in the definition of dealer, it may reduce the number of entities required to submit dealer reports, improve the accuracy of reporting, and result in less administrative burden to both the industry and NMFS. Processor permits are required in order to identify those who must submit the Annual Processed Products report described in section 3.3.3.3.

3.3.2 Observers/Sea Samplers

The Regional Administrator may request any vessel holding a permit for herring to carry a NMFS-approved sea sampler/observer. If requested by the Regional Administrator to carry an observer or sea sampler, a vessel may not engage in any fishing operations in the respective fishery unless an observer or sea sampler is on board, or unless the requirement is waived.

If requested by the Regional Administrator to carry an observer or sea sampler, it is the responsibility of the vessel owner to arrange for and facilitate observer or sea sampler placement. Owners of vessels selected for sea sampler/observer coverage must notify the appropriate Regional or Science and Research Director, as specified by the Regional Administrator, before commencing any fishing trip that may result in the harvest of resources of the respective fishery. Notification procedures will be specified in selection letters to vessel owners.

For foreign processing vessels, the costs of observer coverage will be collected through fees established in accordance with 16 U.S.C. 1821(h). For domestic vessels, observers will normally be funded through the NMFS observer program. In the future, innovative methods of funding

observers may include industry sponsored initiatives.

Rationale: Management of the herring fishery relies on accurate estimates of catches, catch rates, and bycatch. This measure provides the Regional Administrator and the states the ability to put observers on board to collect this information if necessary. This measure also recognizes that innovative funding methods may be necessary to fund observer programs that may benefit the industry.

3.3.3 Reporting and Record Keeping Requirements

The reporting requirements for the herring fishery are based on the existing requirements for other fisheries in the Northeast Region. The Commission, NMFS, U.S. Fish & Wildlife Service, the New England, Mid-Atlantic, and South Atlantic Fishery Management Councils, and all the Atlantic coastal states are currently developing a coastwide fisheries statistics program (Atlantic Coastal Cooperative Statistics Program, or ACCSP). A minimum set of reporting requirements based on a trip-level for fishermen and dealers is being developed and once adopted by each state/agency, will become the minimum standard for data collection on the Atlantic coast. Nothing in the proposed program would prohibit a state/agency from requiring more detailed information on a trip basis if so desired. As the ACCSP provisions are adopted in the Northeast Region, they will be incorporated into the reporting requirements for the herring fishery.

3.3.3.1 Domestic Fishermen and Foreign Processing Vessels

The operator of any domestic vessel issued a permit to fish for herring must maintain on board the vessel, and submit, an accurate daily fishing log report for all fishing trips, regardless of species fished for or taken, on forms supplied by or approved by the Regional Administrator. This includes those vessels that transport herring from catcher vessels to a dealer or processor. Fishing vessel log reports must include the following information, and any other information specified by the Regional Administrator:

Vessel name; USCG documentation number (or state registration number, if undocumented); permit number; date/time sailed; date/time landed; trip type; number of crew; number of anglers (if a charter or party boat); gear fished; quantity and size of gear; mesh/ring size; chart area fished; average depth; latitude/longitude (or loran station and bearings); total hauls per area fished; average tow time duration; pounds, by species, of all species landed or discarded; dealer permit number; dealer name; date sold; port and state landed; and vessel operator's name, signature, and operator permit number. As the provisions of ACCSP are incorporated into the vessel trip report system in the Northeast Region, vessels will be required to report a trip number.

In order to facilitate monitoring of area specific TACs, vessels will be required to report, on a weekly basis, their catch of herring from each management area. This may be accomplished through submittal of vessel trip reports on a weekly basis until an Interactive Voice Response (IVR) system can be implemented. In an IVR system, the vessel owner or operator will place a telephone call and report required information to a computerized database that will facilitate timely tracking of landings. The IVR system will require operators to submit the information necessary to accurately track landings of herring from management areas. Such information may include vessel identification and all herring landings and discards by trip and management area, and any other information deemed necessary by the Regional Administrator.

If authorized in writing by the Regional Administrator, vessel owners or operators may submit reports electronically, for example by using a vessel monitoring system (VMS) or other media.

The operator of any foreign processing vessel issued a permit to fish (as defined in 50 CFR 600.10) for herring must submit the fishing logs and reports specified in 50 CFR 600.502.

3.3.3.2 Dealer Reports

Any dealer issued a federal permit must submit weekly dealer reports as specified in 50 CFR 648.(a)(I). Atlantic herring dealers will not be required to report via an IVR system unless the Regional Administrator determines this report is required and publishes a notification in the *Federal Register*. Dealer reports must include the following information, and any other information specified by the Regional Administrator:

Name and mailing address of dealer, dealer number, name and permit number of the vessels from which fish are landed or received, dates of purchases, pounds by species, price by species, port landed. As the provisions of ACCSP are incorporated into the vessel trip report system in the Northeast Region, vessels will be required to report a trip number.

3.3.3.3 Processor Reports

On an annual basis, processors will complete all sections of the Annual Processed Products survey as directed by the Regional Administrator.

Rationale: Accurate statistics on catches are necessary to assess the status of the herring resource. The combined dealer and vessel reporting system serves as a verification of landings. In addition, some of the TAC distribution methods rely on timely reporting of this information. The requirement for weekly reporting via an interactive voice reporting system will give an easy way for fishermen or dealers to provide timely catch and landing information that will facilitate management decisions. Management of the fishery in the future may include allocation decisions that will be based, in part, on the end products produced. The processor report will provide the information necessary to evaluate the relative benefits of the various processing sectors.

3.3.4 FMP Monitoring

The NEFMC Herring Plan Development Team (PDT) will meet with the Commission's Plan Review Team (PRT)/Technical Committee (TC) to review status of the stock and the fishery. Based on this review, the PDT/TC will report to the NEFMC Herring Committee and the Commission Herring Section, no later than July, any necessary adjustments to the management measures adopted and recommendations for the specifications (OY, DAH, DAP, JVPt, JVPs, IWP, BT, USAP, and Reserve) and TACs. The PDT/TC will specifically recommend TACs for the following year and an estimated TAC for the year after. In developing these recommendations the PDT/TC will review the following data: commercial and recreational catch data; current estimates of fishing mortality; stock status; recent estimates of recruitment; virtual population analysis results and other estimates of stock size; sea sampling and trawl survey data or, if sea sampling data are unavailable, length frequency information from the trawl surveys; impact of other fisheries on the mortality of herring, and any other relevant information.

Based on these recommendations, the Herring Committee will recommend to the Council appropriate specifications and any measures necessary to assure that the specifications will not be exceeded. The Council shall review these recommendations and any public comment received and, after consulting with the Commission, will recommend appropriate specifications to the Regional Administrator. Any suggested revisions to federal management measures may be implemented through the framework process or an amendment to the FMP. The Section may recommend any changes to management measures in state waters to the Commission, which may make changes through its adaptive management process or an amendment.

Specifications (for OY, DAH, DAP, JVPt, JVPs, IWP, BT, USAP, and Reserve) and TACs will be implemented by the Regional Administrator. Proposed re-specifications and TACs will be published in the *Federal Register* on or about September 15 for the following fishing year and will provide for a 30 day public comment period. At the close of the comment period, a notice of final specifications will be published in the *Federal Register*. The previous year's specifications will remain effective unless changed by the Regional Administrator. If the specifications will not be changed, this will be announced through a notice action.

The Regional Administrator may adjust any of the specifications (OY, DAH, DAP, JVPt, JVPs, IWP, BT, U.S. at sea processing, and Reserve) and TACs during the fishing year after consulting with the Council, consistent with the plan objectives and other plan provisions. For example, adjustments may be made to correct for errors in estimating any of the specifications, to provide for increased opportunities for U.S. fishermen to use the resource, or to address conservation concerns. Proposed adjustments will be published in the *Federal Register* stating the reasons for the action and providing for a comment period.

If the Regional Administrator determines that the New Brunswick fixed gear fishery will not harvest 20,000 mt by October 1, the TAC for Management Area 1A may be adjusted by the difference for the remainder of the year. This adjustment will be made if the amount will provide increased opportunities for fishing in Area 1A for the U.S. industry. This adjustment will be accomplished through a notice action, without an opportunity for public comment.

Rationale: This measure describes a system that will provide for a regular review of the fishery and the management measures so that necessary adjustments can be made. It also provides for in-season adjustments of the specifications if necessary. While most of these adjustments provide for a comment period, the adjustment of the Area 1A TAC does not. This is so that the adjustment can be made in time for fishermen to harvest the additional herring prior to the end of the year.

The proposed specifications include a breakdown of the total amount allocated to foreign processing vessels into components for processing in the EEZ (JVPs) and in state waters (IWP). IWP activities are authorized by the governor of a state and are limited only by the necessity for the governor to consult with other states and the Council, and a determination that processing capacity in the state is not sufficient to process the fish landed in that particular state. The proposal establishes a process to make sure that the amount of herring processed by foreign processors in state and federal waters does not hinder domestic processors. The Commission has adopted the identical provision in its herring management plan as a compliance criteria, which will provide the ability to enforce this specification.

3.3.5 Framework Adjustment Measures

Many management measures in this FMP can be adjusted via framework action. The effectiveness of the management program depends on uncertain factors that may change over time. It is therefore necessary to have an administrative mechanism in place that fulfills the Council's public input and notification requirements while maximizing flexibility and responsiveness.

The framework adjustment process allows changes to be made in regulations in a timely manner without going through the plan amendment process. The purpose is to provide a formal opportunity for public comment that substitutes for the customary public comment period provided when publishing a proposed rule. If changes to the management measures were contemplated in the FMP, there was sufficient opportunity for public comment on the framework action, and the changes are not highly controversial, the Secretary of Commerce may waive the need for additional public comment through the publication of a proposed rule in the *Federal Register*.

In response to the annual review by the PDT/PRT or at any other time, the Council may recommend adjustments to any of the measures proposed by this FMP. The Council proposes to include a framework process to adjust management measures. At least two publicly announced meetings would be held to discuss and receive comment on any proposal to address an issue in the herring fishery. Following approval of the proposed management measures at the second meeting, the Council would prepare and submit the final documents to the Secretary. The pre-planned process, the public notice, and advanced availability of the proposals would give the Secretary sufficient justification to waive the customary 15 to 30 day public comment period. If the Council's submission is approved and the Council met the requirements for public comment, the management measures could be published as final rules and take immediate effect.

The initial phase of the proposed framework process will begin when the Council becomes aware of a problem in the fishery. The Council will seek industry advice through public comment, through the oversight committee, or from the herring advisory panel. After considering alternatives developed through this process, or at any other time the Council determines that adjustments are necessary, the Council will develop and analyze the recommended management actions over the span of at least two Council meetings. The meeting where the industry and oversight committee make the formal recommendations to the Council would be the first framework meeting. The Council will provide the public with advance notice of the time, date and place of the two framework meetings and will include a detailed description of the action under consideration. Notice will be announced in the *Federal Register* at least two weeks prior to the first framework meeting. The Council will also inform interested parties of the meeting by sending a notice to them.

After accepting public comment at the first framework meeting, the Council could (1) refer the issue back to the oversight committee for further consideration, (2) make adjustments to the measures that were proposed, or (3) approve of the measures and begin developing the necessary documents to support the framework adjustments. If the Council approves the proposed framework adjustments, the Council will identify, at this meeting, a preferred alternative and/or identify the possible alternatives. This decision will enable the Council to develop a framework

document that discusses and shows the impacts of the alternatives. It will be available to the public prior to the second or final framework meeting. The Council must provide NMFS with the proposed alternatives and analyses at least seven working days prior to the second or final Council meeting if more than two Council meetings have occurred on the framework, to assure that NMFS has sufficient time to review them.

Notice of the second or final meeting will be published in the *Federal Register* at least two weeks prior to the meeting. The notice will include a discussion of the proposed action, the date that the framework document having alternatives and analyses will be available to the public at the Council office, and a request for written public comments. These written public comments will be due at the Council office two days prior to the final framework meeting. If the Council cannot meet its requirements, it will schedule another meeting and follow the same procedures outlined above for the final framework meeting. The final framework meeting will be a full Council meeting, but interim meetings may be scheduled to receive public comment.

If the Council approves the framework action, it will submit documents describing the supporting rationale, and include an analysis of impacts, and a recommendation on whether the Secretary should publish the management measures as a final rule. If the Council recommends that the management measures should be published as a final rule, the Council will consider the following factors and submit the necessary support and analysis for each:

- (1) Whether the availability of data on which the recommended management measures are based allows for adequate time to publish a proposed rule, and whether regulations have to be in place for an entire harvest/fishing season;
- (2) Whether there has been adequate notice and opportunity for participation by the public and members of the affected industry in the development of the Council's recommendation;
- (3) Whether there is an immediate need to protect the resource or to impose management measures; and
- (4) Whether there will be a continuing evaluation of management measures adopted following their promulgation as a final rule.

If the Council's recommendation includes adjustments or additions to management measures, and if after reviewing the Council's recommendation and supporting information, the Regional Administrator may:

- (1) Concur with the Council's recommended management measures and determine that the recommended measures may be published as a final rule based on the four factors specified above. The recommended management measures will be published in the *Federal Register* as a final rule,
- (2) Concur with the Council's recommendation, but determine that the recommended measures should be published first as a proposed rule. The action will be published as a proposed rule in the *Federal Register*. After additional public comment, if the Regional Administrator concurs with the Council recommendation, the action will be published as a final rule in the *Federal Register*, or
- (3) Disapprove the Council's recommendation. The Council will be notified, in writing, of

the reasons for the non-concurrence.

If the Regional Administrator approves the Council's recommendations, the Secretary is expected to waive for good cause the requirement for a proposed rule and opportunity for public comment in the *Federal Register*. The Secretary, in doing so, will publish a "final rule" to remain in effect until amended.

3.3.6 Management Measures That Can Be Adjusted Through Framework Action

These potential framework management measures and the process set up by amending the FMP constitutes the framework adjustment process. The FMP incorporates an extensive list of possible framework adjustment measures, including the possible adoption of a limited entry or controlled access system. These framework adjustments can either implement new management measures, or change existing measures in the plan.

The herring fishery is expected to expand in the future, particularly with the development of an offshore fishery targeted by U.S. vessels. The expansion of this new segment of the industry is underway and may occur rapidly. The plan provides a great deal of flexibility through this list of framework adjustment measures to quickly adapt to this developing fishery. The impacts of these framework measures have not been thoroughly analyzed but fall within the scope of possible management measures considered by this FMP.

3.3.6.1 Management Area Boundaries or Additional Management Areas

The management area boundaries adopted by the plan account for current understanding of stock structure, as well as existing fishing patterns. Additional information on herring spawning components may suggest changes in the management areas. In a similar fashion, as the fishery develops, there may be a need to adjust management areas to reflect new fishing patterns.

Rationale: This adjustment is necessary to provide the flexibility to revise management areas as additional information on stock structure is developed, or fishing patterns change.

3.3.6.2 Size, Timing, or Location of a New or Existing Spawning Area Closure

The spawning closures adopted by this plan use fixed dates and are based on existing knowledge of spawning areas. It is possible additional information will suggest dates that more accurately reflect the time of peak spawning. The areas selected for the closures may also need to be changed, particularly as spawning locations are more precisely located and defined. In addition, particularly in the offshore areas, there may be a need for additional spawning closures as the fishery develops.

Rationale: This adjustment is necessary so that the Council can insure spawning closures adequately protect the herring resource.

3.3.6.3 Closed Areas Other Than a Spawning Closure

The proposed measures do not include closed areas designed to reduce fishing mortality or to address other concerns. There is a possibility, however, that as the fishery develops a need may be identified to prevent herring fishing for a variety of reasons – to provide an adequate forage base for other spawning fish at specific times, to reduce marine mammal interactions or address

bycatch concerns, or to limit fishing mortality on a component of the stock in a particular time or area.

Rationale: This adjustment may be necessary to restrict fishing on herring in specific areas.

3.3.6.4 Restrictions in the Amount of Fishing Time

The proposed measures include effort controls that limit the days of fishing for herring as various levels of the TAC are reached. The intent of these days out of the fishery is to slow the catch rate in order to minimize market interruptions and to prevent the TAC from being exceeded. The selected days out may prove to be either excessive in number or not sufficient to accomplish these goals. Adjustments may be necessary both due to changes in resource abundance and fishermen's behavior.

3.3.6.5 Days at Sea System

The proposed management measures do not include a days at sea system as an effort control measure. Instead, the plan uses mandatory days out of the fishery ("no fishing" days) in order to lower catch rates as the TAC is approached. If this measure is unsuccessful, there may be an interest in providing additional flexibility to fishermen to fish a limited number of days of their choice. If such a system is implemented, fishermen may also want to have the ability to transfer or lease these days at sea.

3.3.6.6 Adjustments to Specifications

The proposed measures allow the Regional Administrator to adjust the specification amounts (OY, DAP, DAH, JVPt, JVPs, BT, USAP, or the Reserve) or TACs on an annual or in- season basis after consulting with the Council. The Council may, however, wish to revise the formulas used for determining the specifications or change the definitions of the different elements of the specifications.

Rationale: This adjustment is necessary to provide the Council the ability to adjust the specification process as necessary.

3.3.6.7 Adjustments to the Amount of Canadian Catch Deducted When Determining Specifications

The plan includes a limit on the amount of Canadian catch that is considered when determining specifications. This amount is based on recent Canadian landings history in the New Brunswick fixed gear and Georges Bank herring fisheries. The amount could change as the Canadian fisheries change. Additional information may also determine that the Canadian catch (particularly the New Brunswick fixed gear catch) should not be considered part of the coastal stock complex, changing the impact of this catch on the U.S. harvest. There is also interest in establishing a procedure with Canada to agree on the allocation of the coastal stock complex. Any of these factors would necessitate a change in the amount deducted when determining the specifications.

Rationale: This adjustment is necessary so the amount of Canadian catch deducted when determining specifications can be adjusted as conditions change.

3.3.6.8 Distribution of the TAC

The plan establishes a procedure for allocating the annual overall TAC to different management areas and time periods. This procedure includes an annual review, and allows for the consideration of new information on stock mixing, the relative size of stock components, and changing fishing patterns. At some point there may be a desire to revise the area/time distribution pattern to time periods or areas that area assigned part of the TAC. There may also be a desire to revise the process used to distribute the TAC.

Rationale: This adjustment is necessary to provide the Council the ability to revise the TAC distribution method to a different system or to change the time periods and areas used to allocate the TAC.

3.3.6.9 Gear Restrictions

The proposed management measures do not include any restrictions or requirements for gear types. Gear restrictions (such as mesh size, etc.) or requirements (such as bycatch reduction devices, etc.) may be a method to regulate the catch of herring in the future. This will allow the greatest flexibility to fishermen in developing the fishery. There may be a need, as the fishery expands, to regulate gear use because of concerns over discards, bycatch, interactions with marine mammals, or to target herring of a particular size.

Rationale: This adjustment is necessary to provide the ability to incorporate gear restrictions or regulations into the fishery.

3.3.6.10 Vessel Size/Horsepower Restrictions

Limiting the size and horsepower of vessels allowed into the herring fishery can be used as a measure to help control the capacity of the fishing fleet. This can be for social or economic reasons, as well as to help in conservation efforts by limiting the rapid introduction of catching capacity while there are uncertainties over the estimates of stock size and the impact of the fishery on other recovering fish stocks. It may also be determined that the limits imposed by the plan should be removed in order to allow the industry greater flexibility in using the resource.

Rationale: This adjustment provides the Council the flexibility to adjust restrictions on vessel size as conditions warrant.

3.3.6.11 Closed Seasons

The proposed measures do not include any closed seasons – periods where the landing of herring is prohibited. There could, however, be a need to establish such a season. Closed seasons could be used to reduce fishing mortality or to limit the harvest of herring during a spawning season, for example. They may also limit the impacts of herring fishing on marine mammals or other species, or reduce the number of gear conflicts. Closed seasons, while effective in limiting the catch of herring, may have severe negative impacts on herring markets due to the interruption of supply.

Rationale: This adjustment is necessary to provide the Council the flexibility to use closed seasons to reduce fishing mortality, provide spawning protection, or change the selectivity of the harvest to improve yield-per-recruit, or for other reasons.

3.3.6.12 Minimum Fish Size

The proposed measures do not establish any minimum fish sizes. Minimum fish sizes can be used to reduce fishing mortality for juvenile fish, or to increase the yield from the fishery. These limits are difficult to establish and enforce in the large volume herring fishery, which has historically included a segment that targets the harvest of juvenile fish for various markets. There could be a need in the future to limit the harvest of juveniles, or to establish minimum sizes for different uses.

Rationale: This adjustment is necessary to enable the Council to adopt minimum fish sizes should it be necessary to reduce fishing pressure on juvenile herring.

3.3.6.13 Trip Limits

The proposed measures establish a trip limit for incidental catches of herring during spawning closures or when effort controls are effective. This size of this limit may need to be adjusted. For example, it may be necessary to reduce incidental landings if additional participants enter the fishery. It may also be necessary to raise this limit to reduce discards in the incidental catch fishery.

The proposed measures do not establish a trip limit for the directed herring fishery. A trip limit could be useful in the directed fishery in order to slow catch rates of herring to extend the fishing season, minimizing market interruptions. A trip limit could also be used to reduce fishing mortality, though it will be of limited effectiveness unless the number of participants in the fishery is controlled in some manner.

Rationale: This adjustment is necessary to provide the Council the flexibility to adjust the incidental catch trip limit, or to establish a trip limit in the directed herring fishery.

3.3.6.14 Seasonal, Area, or Industry Sector Quotas

The proposed measures include the assignment of a TAC to various areas and annual time periods – in effect, a quota scheme. It may be desirable to further subdivide the TAC into quotas for specific seasons or time periods, or for some smaller area such as a state or other geographic delineation. It could also be desirable to establish a quota for a particular industry sector, such as for inshore and offshore processing sectors, or for a particular harvesting sector. These allocations will primarily address social or economic concerns. It is possible, though, that a seasonal or area quota may help protect an individual spawning component.

Rationale: This adjustment is necessary to provide the Council the flexibility to establish quotas in addition to the area and time-specific TACs.

3.3.6.15 Measures to Protect Essential Fish Habitat

The Council has identified and designated essential fish habitat for all species it manages, including Atlantic herring. The provisions of the EFH designations are incorporated by reference into this management plan. There may be additional measures identified in the future to protect EFH, such as limiting the use of particular gear types, or closing areas or seasons. In most instances, the measures chosen will be selected from the list of possible framework adjustment measures. Additional measures, however, could be identified that were not considered. They could include restrictions on discharge of harmful substances, for example, or other requirements.

Rationale: This adjustment is necessary to provide the Council the flexibility to adopt management measures necessary to protect essential fish habitat that are not included in the list of possible framework adjustment measures.

3.3.6.16 Measures to Facilitate Aquaculture

Aquaculture projects in the EEZ sometimes need accommodations from existing fishing practices in order to be established. In August, 1997 the Council voted to include in all NEFMC FMPs a framework adjustment process that would facilitate the timely approval of aquaculture projects that would otherwise require a full plan amendment. For aquaculture projects in the EEZ, the Council's recommendations on adjustments or additions to management measures must come from one or more of the following categories: minimum fish sizes, gear restrictions, minimum mesh sizes, possession limits, tagging requirements, monitoring requirements, reporting requirements, permit restrictions, area closures, establishment of special management areas or zones and any other management measures currently included in the FMP.

Rationale: The Council proposes the use of the above-described process to make necessary adjustments to Council FMPs which apply to EEZ-based aquaculture projects. The intent is to make changes to FMPs in a timely manner. During this process, the Council will address issues within its purview, including user group conflicts and fishery habitat-related issues, but will not pre-empt the role of the permitting agencies, the Army Corps of Engineers and the Environmental Protection Agency.

3.3.6.17 Changes to the Overfishing Definitions

The overfishing definitions established by the plan are based on existing scientific information. Improved data collection, changes in stock exploitation, or a better understanding of herring population dynamics may lead to new evidence that suggests more appropriate biological reference points. In particular, an improved understanding of the various components of the coastal stock complex may lead to the development of reference points that are specific to a particular spawning component or area.

3.3.6.18 Vessel Monitoring System (VMS)

The plan requires certain vessels to use VMS, and establishes specific requirements related to these systems. The VMS is intended to assist in the monitoring of area specific TACs and spawning closures, as well as to ease enforcement of closures in other management plans that do not apply to herring vessels. The criteria and operating requirements for the VMS may need to be adjusted as more vessels enter the fishery.

Rationale: This adjustment provides the Council the flexibility to change the criteria or VMS requirements.

3.3.6.19 Use Restrictions

One of the goals of the plan is to achieve optimum yield, that level of harvest which provides the greatest overall benefits to the nation. The various herring products each return different economic values. There may be a need to specify the allowable uses of herring in order to maximize the benefit from the resource. The high catch rates associated with a large-scale mealing

operation, for example, may result in rapid attainment of the TAC, reducing the availability of herring for other higher-value uses. Similarly, the harvest of herring for roe may have adverse impacts on spawning if the harvest is excessive.

The Commission has adopted restrictions on mealing and a roe fishery in state waters. Another possible reason to adopt such measures may be to complement the Commission's management actions.

3.3.6.20 Quota Monitoring Tools

A fundamental element of the plan is the overall TAC, and the distribution of that TAC to different areas and time periods. To insure the TAC is not exceeded, the plan adopts the existing reporting system (the VTR system) system and an IVR system so that timely reporting of catches can be obtained. Experience with the plan may show that additional measures, such as vessel operator or dealer reporting requirements, are necessary to effectively monitor the TAC, or that the frequency of reports can be changed (increase or reduced) for an effective system. Improved methods may be found to facilitate timely reporting.

Rationale: This adjustment will enable the Council to improve monitoring of the TACs or other quotas, for example by taking advantage of improved technology or modifying reporting frequency. reporting requirements.

3.3.6.21 Permit and Vessel Upgrading Restrictions

The proposed measures do not include restrictions on upgrading vessels or permits, or splitting permits. The Council and the MAFMC recently submitted an amendment to their plans that will make all such requirements consistent. They only apply, however, to limited entry fisheries. Since the herring fishery is an open access fishery, these regulations were not included in the plan. If, in the future, a limited entry or controlled access scheme is adopted, these permit and upgrading restrictions may be incorporated into the herring management measures.

Rationale: This adjustment is necessary so the Council can keep permit and vessel upgrading restrictions consistent across all management plans.

3.3.6.22 Implementation of Measures to Reduce Gear Conflicts

Other management plans adopted by the Council include framework adjustment measures to address gear conflicts. Gear conflict has been an historic problem for fishermen. In New England, gear conflict arose as fishermen switched from hook and line gear to trawls to catch groundfish. During the late 1970's and early 1980's, fishermen using gill nets became more adept at setting their gear on hard bottom, places historically left to fishermen using hook and line gear. This conflict erupted and the Council unsuccessfully tried to manage the problem. From the early 1990's to the present, trawl fishermen have begun to target non-traditional species (monkfish, dogfish, whiting) in areas historically fished by lobster traps and anchored gill nets.

Whenever gear conflict was infrequent, fishermen working close to one another were often able to forge informal agreements to set their gear in certain areas and follow certain guidelines. This method of resolving the problem can be effective as long as the target species do not have a high degree of overlap or when the resource is abundant enough to support the level of fishing effort.

When market demand increases, especially for an underutilized species, or when traditional species are not abundant, shifts in fishing effort occur. These shifts can cause gear conflict when vessels using incompatible methods damage other fishing gear. Adjustments made through the framework process will therefore be viewed as part of a larger program already having conservation benefits and preventing overfishing. A package of simultaneous adjustments to one or more FMPs will allow analysis and review of the beneficial and adverse impacts on all affected fisheries, rather than based on their impact on only a particular fishery or sector.

Measures used to address gear conflict may include:

- (a) Mandatory monitoring of a radio channel by fishing vessels;
- (b) Gear location reporting by fixed gear fishermen and mandatory plotting by mobile gear fishermen;
- (c) Standards of operation when gear conflict occurs;
- (d) Fixed gear marking or setting practices;
- (e) Gear restrictions for certain areas;
- (d) Vessel monitoring systems;
- (e) Restrictions on the maximum number of fishing vessels;
- (f) Special permitting conditions

Rationale: This adjustment will enable to Council to quickly adopt measures to address gear conflicts that are consistent with other management plans.

3.3.6.23 Limited Entry or Controlled Access System

The proposed action manages the herring fishery as an open access fishery. There was considerable concern during development of the plan, however, that there may be the need to control the number of participants in the fishery in the near future. This may be an issue in all management areas, but is a particular concern in the Gulf of Maine (Management Area 1). The draft management measures included a limited entry and controlled access option that was not adopted by the Council. This proposal included suggested qualification criteria and a brief analysis of the vessels that would qualify under the various criteria.

In the past, the Council has submitted limited entry or controlled access proposals as a full plan amendment. Recognizing the concern over the possible over-capitalization of the herring fishery, the Council has decided to include the adoption of such a system as a framework adjustment measure. This will facilitate the rapid implementation of such a system should it prove necessary. While this adjustment measures will allow the adoption of limited entry through a framework adjustment, the Council may choose to submit a full plan amendment.

Rationale: This adjustment will provide the utmost flexibility to the Council in implementing a limited entry or controlled access system in the herring fishery. This adjustment will allow the Council to implement such a system either through the normal amendment process, or through framework action.

3.3.6.24 Other Management Measures Currently Included in the FMP

In addition to the above list of framework adjustment measures, the current plan includes the

following management measures: permit and reporting requirements, framework adjustment procedures, observer/sea sampler requirements, joint venture restrictions, and restrictions on transfers at sea. With the exception of the last two measures, these are primarily administrative requirements that may need to be adjusted. Joint venture restrictions may need to be revised to encourage development of domestic processing. Transfer at sea provisions may need to be adjusted to facilitate enforcement of effort controls or spawning closures, or to match any changes in trip limits or other restrictions in activity.

3.4 Management Areas

Management area boundaries are key elements of the TAC distribution systems in section 3.6.3. They may also be used to apply other management measures, such as areas that require the use of VMS. The management areas and sub-areas (Figure 4) are defined as:

Management Area 1 (Gulf of Maine):

All U.S. waters of the Gulf of Maine north of a line extending from the eastern shore of Monomoy Island at 41° 35' N. lat. eastward to a point at 41° 35' N. lat., 69° 00' W. long., thence northeasterly to a point along the Hague Line at 42° 53'14" N. lat., 67° 44'35" W. long., thence northerly along the Hague Line to the U.S.-Canadian border, to include State and Federal waters adjacent to the states of Maine, New Hampshire, and Massachusetts.

Management Area 1 is divided into Area 1A (inshore) and Area 1B (offshore). This line identifies inshore fishing grounds that have supported most of the catch to date. The line dividing these areas is described by the following points:

| | | |
|------------|-----------|----------------------------------|
| (1) | 70° 00'W | (Cape Cod shoreline at 70° 00'W) |
| 42° 38.4'N | 70° 00'W | |
| 42° 53'N | 69° 40'W | |
| 43° 12'N | 69° 00'W | |
| 43° 40'N | 68° 00'W | |
| 43° 58'N | 67° 22'W; | |

(the U.S.-Canada maritime Boundary).

Northward along the irregular U.S.-Canada maritime boundary to the shoreline.

Management Area 2 (South Coastal Area):

All waters west of 69° 00' W. long. and south of 41° 35' N. lat., to include state and Federal waters adjacent to the states of Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia and North Carolina.

Management Area 3 (Georges Bank):

All U.S. waters east of 69° 00' W. long. and southeast of the line that runs from a point at 69° 00' W. long. and 41° 35' N. lat., northeasterly to the Hague Line at 67° 44'35" W. long. and 42° 53'14" N. lat.

Rationale: The three management areas contained in the Preliminary Management Plan (PMP) are modified in this plan. This action is based on knowledge of the seasonal distribution and

availability of juvenile and adult fish within the management unit area, regional differences in the nature and degree of harvesting (different gear types) and processing activity (differences in sizes and ages of fish processed), differences between the inshore and offshore fishing grounds and habitat, and the location of known spawning grounds. One of the most important reasons for distinguishing management areas is to avoid over-exploitation of individual spawning components that are included within the stock complex. Despite the fact that the management unit extends throughout the range of the species in U.S. waters, there is evidence that the U.S. Atlantic herring resource is comprised of separate spawning components that occupy identifiable areas prior to and during spawning. For these reasons, it is appropriate to establish an overall management program that is consistent with unique conditions of the resource and the fishery within separate management areas and allows for the cooperative management of the resource by different regulatory jurisdictions (the states, the Commission and the New England and Mid-Atlantic Fishery Management Councils). The management areas allow the application of different TACs or management measures in different areas. This provides more flexibility to the management program, as measures do not have to be applied to the entire area when they may be more appropriate in only one area.

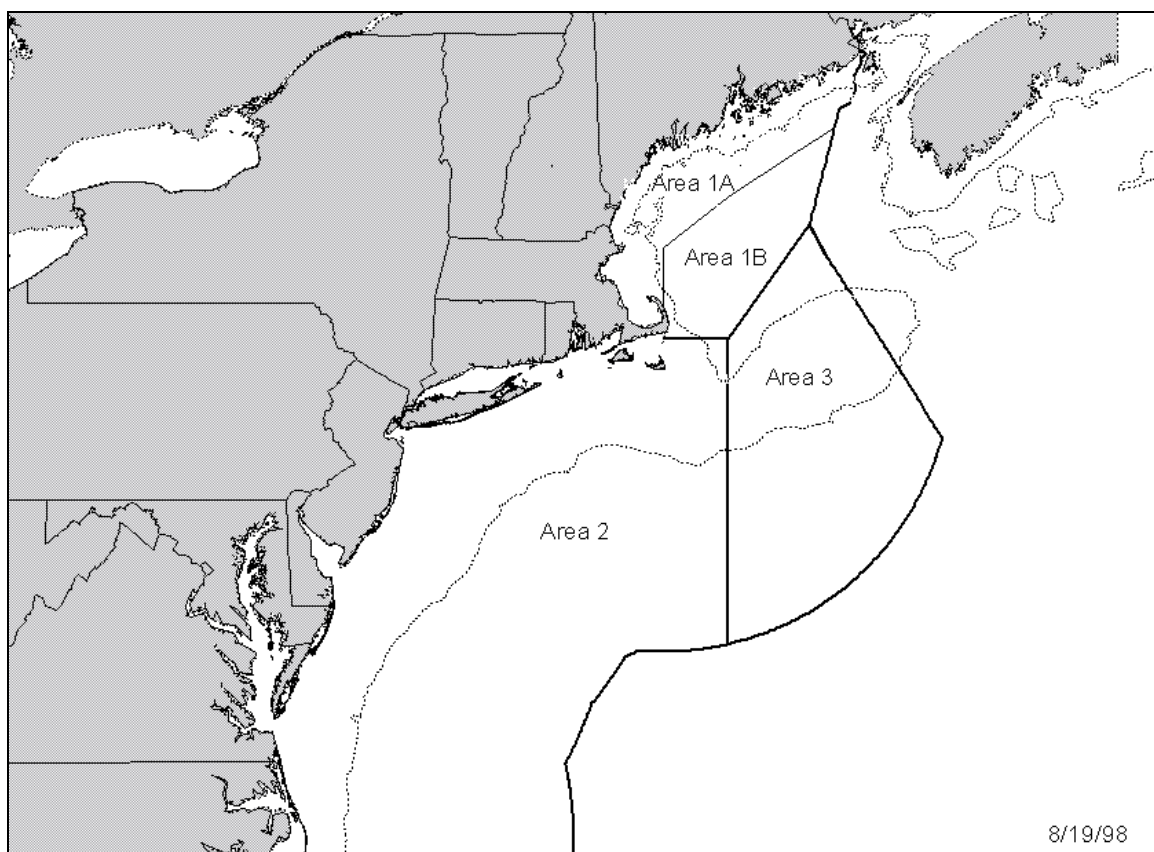


Figure 4 - Herring management areas

3.5 Spawning Area Closures

3.5.1 Management Area 1

Spawning closures are proposed for Management Area 1 (in both subareas 1A and 1B). These areas are modified from the spawning closures implemented by the Commission in its 1994 management plan. Spawning closure dates are fixed. In an area closed to protect spawning, fishing for, harvesting, or possessing herring will not be allowed except for the following exception: vessels will be allowed to catch and possess up to 2,000 pounds of herring per trip. The amount of herring landed from a closed spawning area by one vessel in a day cannot exceed 2,000 pounds (this prohibits a vessel from making multiple trips in one day to exceed the 2,000 pound trip limit). This limit will be enforced based on calendar days and not on the basis of days-at sea used in any other management plan (for example, a groundfish days at sea running clock cannot be used to land more than 2,000 pounds of herring in one calendar day). Any fishing vessel transiting a closed spawning area and possessing more than 2,000 pounds of herring must have all fishing gear stowed as specified by the Regional Administrator.

The boundaries of the spawning closures, and the dates the areas are closed, may be adjusted through framework action (see section 3.3.6). Additional area closures may also be adopted through framework action.

The spawning closure areas (Figure 5) in Management Area 1 are defined as:

Eastern Maine

All waters of the EEZ bounded by state waters and the following coordinates:

| | |
|------------------------------|------------|
| Maine state waters | 68° 20'W |
| 43° 48'N | 68° 20'W |
| 44° 04.4'N | 67° 48.7'W |
| 44° 06.9'N | 67° 52.8'W |
| 44° 31.2'N | 67° 02.7'W |
| North along US/Canada border | |

Western Maine

All waters of the EEZ bounded by state waters and the following coordinates:

| | |
|---|--------------------------------------|
| 43° 30'N | Intersection with Maine state waters |
| 43° 30'N | 68° 54.5' W |
| 43° 48'N | 68° 20'W |
| North to Maine state waters at 68° 20'W | |

Cashes Ledge

| | |
|----------|----------|
| 43° 15'N | 69° 30'W |
| 43° 15'N | 69° 45'W |
| 43° 00'N | 69° 45'W |
| 43° 00'N | 69° 30'W |
| 42° 40'N | 69° 30'W |
| 42° 40'N | 68° 50'W |
| 43° 10'N | 68° 50'W |
| 43° 10'N | 69° 30'W |

Jeffreys Ledge

All waters in the EEZ bounded by state waters and the following coordinates:

| | |
|------------|------------|
| 43° 12.7'N | 70° 00.0'W |
| 43° 09.5'N | 70° 08.0'W |
| 42° 57.0'N | 70° 08.0'W |
| 42° 52.0'N | 70° 21.0'W |
| 42° 41.5'N | 70° 32.5'W |
| 42° 34.0'N | 70° 26.2'W |
| 42° 55.2'N | 70° 00.0'W |

Stellwagen Bank National Marine Sanctuary

All waters in the EEZ bounded by state waters and the following coordinates:

| | |
|------------|------------|
| 42° 34.0'N | 70° 23.5'W |
| 42° 28.8'N | 70° 39.0'W |
| 42° 18.6'N | 70° 22.5'W |
| 42° 05.5'N | 70° 23.3'W |
| 42° 11.0'N | 70° 04.0'W |

The closure dates will be:

| | |
|-----------------------------------|----------------------------|
| Eastern Maine | August 15 – September 11 |
| Western Maine | September 1 – September 28 |
| JeffreysLedge/ Stellwagen Bank | September 15 – October 12 |
| Cashes Ledge | August 1 – September 25 |

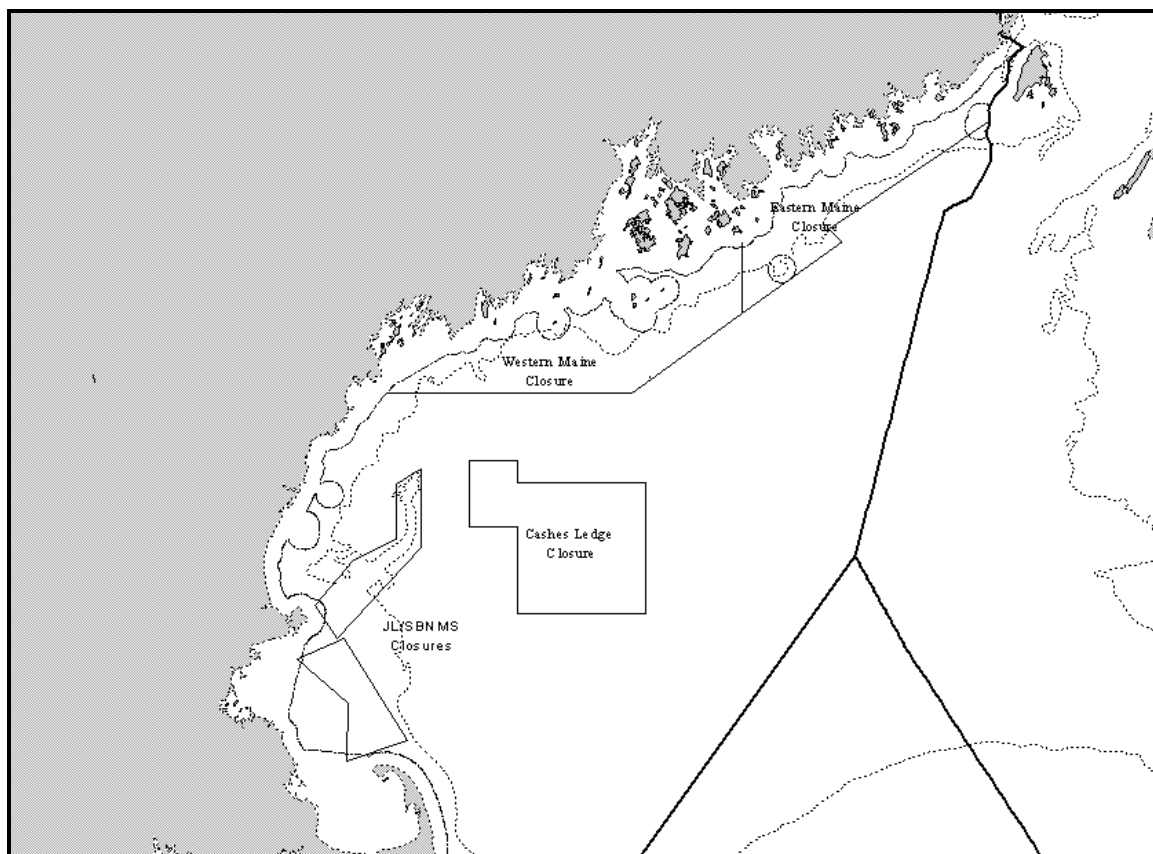


Figure 5 - Herring Management Area 1 spawning closures (with approximate territorial sea boundary shown)

Rationale: Herring schools are especially susceptible to fishing when they aggregate for spawning. This is also when herring are at their most valuable, as fat content is generally at its

peak. These economic reasons to allow fishing on spawning herring, however, are opposed by conservation concerns. Herring in the latter stages of spawning are not fit for some markets, resulting in the loss. Fishing on spawning aggregations not only results in high catch rates, but it interferes with the spawning behavior of those herring not caught. There is evidence that part of the reason for the collapse of the Georges Bank fishery in the late 1970's was not only due to high overall mortality, but because sequential fishing on spawning herring reduced the resiliency of the stock to survive the increased fishing pressure (Anthony and Waring, 1980). Spawning closures provide the maximum opportunity for successful spawning.

The spawning closures adopted by this plan are also intended to complement the spawning area restrictions contained in the Commission's amended management plan for Atlantic herring. The Commission's measures apply a "tolerance" provision to fishing for Atlantic herring in state waters of the Gulf of Maine for the period August 1 through October 31. This "tolerance" allows the catching of herring as long as no more than a certain percentage consist of spawn fish. As the Commission and the Council discussed measures to protect spawning aggregations of herring, one of the options considered by the Council was to leave the protection of spawning herring to the Commission. Under this concept, the only protection for spawning fish would have been through any landing regulations implemented by the states in accordance with the Commission's plan. Some states, however, do not have the resources to implement and enforce the tolerance provision. As a result, if the Council did not adopt any spawning closures, it is possible that vessels could catch spawn herring in federal waters and land them in a state that is unable to enforce the Commission's provisions, preventing effective spawning protection. By adopting spawning closures in federal waters for the key areas and times of spawning activity, the Council's closures augment the efforts of the states to protect spawning herring.

3.5.2 Management Areas 2 and 3

Because of the robust condition of the herring resource and interest in developing the offshore fishery, spawning closures will not be established in these areas when the plan is implemented. Closures may be established in the future as information is obtained on the appropriate times and areas to be closed and the industry develops the ability to harvest herring offshore. Closures may also be adopted if it is determined a developing roe fishery needs to be limited to protect the resource.

3.6 Catch Controls

The Atlantic herring fishery will be managed as an open access fishery in the EEZ. The system adopted by the plan uses a total allowable catch to limit the harvest of herring. The TAC is distributed to different areas and time periods, both to protect various spawning components and to encourage development of the offshore resource. Effort controls are incorporated to slow the harvest of herring as the TAC is approached and to encourage fishing effort to shift into other areas as the TAC in an area is approached.

3.6.1 Total Allowable Catch (TAC)

The Total Allowable Catch (TAC) will be determined for the coastal stock complex. The TAC will serve as an analytical device for purposes of evaluating the conditions of the resource and rate of capture. TACs will also be determined for each management area. TACs will be recommended

on an annual basis by the PDT/TC. All herring catches, juvenile and adult, from both state and federal waters, will apply to the TAC. The total of any assigned TACs will not exceed OY.

Rationale: The setting of a TAC protects the resource by establishing a target harvest level that is based on the biological status of the stock. Management measures can be revised to meet this target.

3.6.2 TAC Limitation

In the event that effort controls fail to restrict the catch of herring, the catch in an area will not exceed 100% of the TAC assigned for a particular time period. Up to 5% of each area or sub-area TAC will be set aside for incidental catch in other fisheries. The directed fishery for herring will be closed in a management area or sub-area when the Regional Administrator projects the catch will exceed 95% of the TAC for that area or sub-area. The difference between 100% of the TAC and 95% of the TAC is a set-aside to allow the incidental catch of herring in other fisheries to continue after the directed fishery is closed. This set-aside can be reduced (making a larger percentage of the TAC available for the directed fishery) by the Regional Administrator if it appears to overestimate catches of herring in other fisheries. Such an adjustment will be made on an annual basis after providing an opportunity for public comment through notice in the *Federal Register*. Incidental catch in an area closed to directed herring fishing will be limited to 2,000 pounds per trip as described in section 3.6.4.

Rationale: Closing the fishery when the TAC is reached will protect the resource and ensure long term sustainable catches are achieved. This provision also sends a signal to the industry that harvests should be controlled or the fishery may close. The set-aside for incidental catches in other fisheries reduces the likelihood that the overall TAC will be exceeded. This level can be reduced by the Regional Administrator, or can be increased through a framework adjustment measure, if it appears to misstate the incidental catch. An analysis of the proposed 5% incidental catch set aside, and its impacts on the resource, is in section E.7.2.5.2.

3.6.3 TAC Distribution

The total allowable catch will be distributed to Management Areas 1A, 1B, 2, and 3 on an annual (January through December fishing year) basis. The individual area TACs are designed to allow flexibility in the harvest of herring while protecting individual spawning components. All available information, including tagging studies and the NMFS fall bottom trawl survey, is used to estimate the proportion of each spawning component (Gulf of Maine and Georges Bank/Nantucket Shoals) that occupies each management area during each season, and the size of each stock, the overall TAC is distributed so that spawning components are not overfished. The proposal includes the flexibility to revise distribution of the TAC as relative stock sizes change, additional information is learned on stock migration and mixing, or improved assessment techniques allow a more refined estimate of the size of the individual spawning components.

Using estimates of stock size developed through the assessment of the coastal stock complex of herring, allowable biological catch (ABC) can be determined. While the assessment is performed on the entire stock complex, it is widely acknowledged there are separate spawning components of herring that should not be overfished (Iles and Sinclair 1982; Boyar et al. 1973; Haegle and Schweigert 1985). Any distribution of the annual TAC that ignores the existence of these

spawning components risks damaging the resource by overfishing a specific component while remaining within the overall harvest level. For this reason, the Council proposes to distribute the overall TAC to separate areas. This will allow the setting of these area TACs to reduce the risk of overfishing a specific herring spawning component.

The determination of area TACs is complicated by incomplete information on the migration of herring and the relative sizes of the spawning components. During spawning season, however, there is believed to be little mixing of the separate spawning components. An examination of NEFSC fall trawl survey data (conducted during the spawning season for herring) by the 27th SAW resulted in estimates of minimum population size for each of three areas: the Gulf of Maine, Nantucket Shoals, and Georges Bank. An annual ratio of population size to total population was determined for each of these areas for the time periods 1988 – 1997 and 1993 – 1997. Coastal Maine accounted for 27% of the population biomass during the ten year period, declining slightly to 24% - 26% in the shorter, more recent period. Nantucket Shoals accounted for 63% of the biomass in the longer period, declining to 57% in the 1993-1997 period. Georges Bank accounted for 10% of the biomass in the longer period, but has increased to approximately 17%-18% in the recent period, reflecting the resurgence of the Georges bank component (NEFSC, 1998). These relative stock size ratios can be applied to the ABC to estimate how much herring can be taken from each spawning component. These estimates should be viewed as guidelines only rather than absolutes as the accuracy of the percentages has not been determined.

The various spawning components, however, are known to intermingle outside of spawning season. This mixing must be taken into account when distributing the annual TACs to minimize the risk of overfishing a specific spawning components. Some of the Gulf of Maine component, for example, is believed to migrate into Management Area 2 during the winter months. The following table summarizes current estimates of the distribution of the various spawning components throughout the year. This table is based on current knowledge of herring migration and mixing; as additional information is learned, the estimates of the percent of a component in a management area may be revised. For example, changes in relative size of the various spawning components may result in different percentages of the total coastal stock complex in an area during a specific season. The PDT/TC annual review of the management plan will update the estimates of stock distribution when determining TACs for the following year.

| Time of Year | Component | Percent of Component in Management Area | | |
|--------------|-----------|---|-----|-----|
| | | 1 | 2 | 3 |
| Dec-March | GOM | 100 | 20 | 0 |
| | GB/NS | 0 | 80 | 0 |
| Apr-July | GOM | 50 | 0 | 0 |
| | GB/NS | 50 | 100 | 100 |
| Aug-Nov | GOM | 100 | 0 | 0 |
| | GB/NS | 0 | 100 | 100 |

Table 4 - Distribution of spawning components by season

It is possible to assign seasonal and area TACs based on this estimated distribution of the various spawning components. Such a system, however, would be difficult to administer and monitor, and would risk frequent interruptions in fishing and the supply of herring as seasonal TACs are approached and effort controls are implemented. The Council proposes a simpler approach, using annual TACs in each of four areas that consider the seasonal distribution of herring and relative size of various components.

The maximum size of an individual area TAC is based on the percentage of the ABC that can be harvested from each of the spawning components. Estimates of Canadian catches in the New Brunswick juvenile and Georges Bank fisheries are then subtracted to determine the U. S. harvest available from each spawning component (as described/limited in section 3.2). The amount that can be harvested from each area is determined after considering the migration and mixing of the various components, the pattern of the fishery, and any other relevant factors.

Most herring are currently harvested in the inshore area of Management Area 1. A TAC is established in Area 1A to limit harvest to acceptable limits. Because some Gulf of Maine herring migrate into Management Area 2 in the winter months, the TAC set for Area 1 must consider the impact of the winter fishery in the northern part of Management Area 2. Twenty percent of the fish caught in this area/time period are believed to be Gulf of Maine fish. This means the Area 1A TAC will not equal the entire amount that can be removed from the Gulf of Maine spawning component if there is a winter fishery in Management Area 2. The amount of this impact will change as the fishery develops and if relative spawning component sizes change.

The process to be followed in determining annual TACs will be as follows:

- (1) Estimate the relative abundance of herring in each of three areas during spawning season
- (2) Consider existing information on stock distribution and adjust the distribution of spawning components by area (Table 3) as necessary
- (3) Examine seasonal patterns in the fishery to identify changes in the exploitation of various spawning components over time
- (4) Based on ABC, estimate the allowable U.S. harvest from the components of herring that spawn in the Gulf of Maine, Georges Bank, and Nantucket Shoals

- (5) Estimate the expected harvest of Gulf of Maine herring in the winter fishery in Management Area 2
- (6) Estimate the expected harvest of Georges Bank and Nantucket Shoals herring in Management Area 1
- (7) Establish the TACs for Areas 1A, 1B, 2, and 3
- (8) Determine the amount, if any, of the TAC that will be assigned to a TAC reserve

The TACs for each area will be forwarded to the Regional Administrator who may implement them as described in section 3.3.4. The Regional Administrator may apportion any or all of the reserve to a management area after consulting with the Council.

The Regional Administrator will project whether the New Brunswick juvenile fishery will harvest 20,000 mt by October 1. If it is determined this fishery will harvest less than 20,000 mt, the TAC for Management Area 1A will be increased by the difference.

3.6.3.1 Initial TAC Distribution

Upon implementation of the FMP, the initial TAC distribution will be determined and distributed on the basis of an ABC of 300,000 mt and an OY of 224,000 mt. Relative abundance of herring in each area are estimated as described in Table 4. The winter removals of Gulf of Maine fish from Area 2 are estimated at 10,000 mt. The relative proportion of the biomass of herring in each area during spawning season is estimated as 25% in the Gulf of Maine, 55% on Nantucket Shoals, and 20% on Georges Bank.

For Management Area 1A, the initial area TAC is 45,000 mt as calculated below:

(coastal stock complex ABC of 300,000 mt) * 0.25 (relative proportion of Gulf of Maine spawning component) = 75,000 mt

| |
|---|
| 75,000 |
| -20,000 removed by the New Brunswick weir fishery |
| 55,000 |
| -10,000 removed during Area 2 winter fishery |
| <u>45,000</u> |
| +15,000 added for GB/NS contribution to historic Gulf of Maine summer fishery |
| +10,000 added for GB/NS contribution to offshore Gulf of Maine |
| 70,000 Total Annual US TAC for Area 1 based on historic fishery |

There are believed to be periods of the year when GB/NS spawning component herring are found in offshore areas of the Gulf of Maine (within Management Area 1B). The historic fishery – in particular the coastal fixed gear fishery – did not exploit these fish. An estimate of 10,000 mt of herring can be harvested from this area. The total amount of herring that can be harvested from Management Area 1 is thus 70,000 mt. This amount is divided into 1A and 1B components. The harvest of herring Management Area 1A will be limited to 45,000 mt, and the harvest in Area 1B will be limited to 25,000 mt.

Landings in Management Areas 2 and 3 will be limited to 50,000 mt each. In addition, there will

be a 54,000 mt TAC reserve. Because some Gulf of Maine herring are caught in Management Area 2 in the winter, there is a concern that an uncontrolled catch of herring in the winter fishery could damage the Gulf of Maine resource. Current estimates are that approximately 20 percent of the catch in Area 2 in the winter months may be herring from the Gulf of Maine spawning component. With an Area 2 TAC of 50,000 mt, even if this entire TAC were caught in the winter months, the amount of Gulf of Maine herring that is caught would not exceed the amount considered when setting the Management Area 1 (1A and 1B) TACs. The TAC reserve may be released to Area 2 by the Regional Administrator by a notice action, after consulting with the Council. This reserve will not be released until Gulf of Maine herring are unlikely to be in this area. As additional information is obtained on the relative sizes of spawning components, and on migration patterns, the size of the TAC reserve or the timing of its release to the industry may change.

| Area | TAC |
|--------------------|------------|
| Area 1A | 45,000 mt |
| Areas 1B | 25,000 mt |
| Area 2 | 50,000 mt |
| Area 3 | 50,000 mt |
| Area 2 TAC Reserve | 54,000 mt |
| Total TAC | 224,000 mt |

Table 5 – Initial TAC distribution

3.6.4 Effort Control – Mandatory Days Out of the Fishery

Effort controls will be used to prevent the annual TAC in each area or sub-area from being exceeded. In the event that the TAC in an area or sub-area is attained, the directed fishery will be closed. NMFS will monitor the herring catch from all areas with an assigned TAC. If catch rates indicate the TAC will be exceeded, mandatory days out of the fishery will be imposed for the directed fishery.

When catches have reached 40 percent of the TAC in an area, NMFS will project when the catch will reach 50 percent of the TAC and determine if the TAC will be exceeded during the time period. If the TAC will be exceeded, vessels will be required to take Saturday and Sunday of the fishery (in that area or sub-area) when NMFS projects the catch will reach 50 percent of the TAC.

When catches have reached 65 percent of the TAC in an area, NMFS will project when the catch will exceed 75 percent of the TAC and determine if the TAC will be exceeded during the time period. If the TAC will be exceeded, vessels will be required to take Friday, Saturday, and Sunday out of the fishery (in that area or sub-area) when NMFS projects the catch will reach 75 percent of the TAC.

When catches have reached 80 percent of the TAC in an area, NMFS will project when the catch will exceed 90 percent of the TAC and if the TAC will be exceeded. If the TAC will be exceeded, vessels will be required to take Friday, Saturday, Sunday, and Monday out of the fishery (in that area or sub-area) when NMFS projects the catch will exceed 90 percent of the TAC.

NMFS will announce the imposition of effort controls through notice action in the *Federal Register*. If catch rates are high, the imposition of effort controls may be made with little or no advance notice. Fishermen will be notified through news releases, letters to herring permit holders, and broadcast notice to mariners. NMFS will notify appropriate state marine resource officials to assist in distributing this information.

All vessels will take the same days out (that is, days out will be "no fishing" days) for a particular area. Fishing will be allowed in other areas, and catch may be landed in an area that is closed to fishing. Any vessel transiting an area closed to fishing with legally caught herring on board must have its fishing gear stowed in accordance with the requirements of the Regional Administrator.

Fishing will be allowed in other areas, and catch may be landed in an area that is closed to fishing. Any vessel transiting an area closed to fishing with more than 2,000 pounds of legally caught herring on board must have its fishing gear stowed in accordance with the requirements of the Regional Administrator.

During a closure, vessels may retain a catch of herring that does not exceed 2,000 pounds per trip. Vessels may possess no more than 2,000 pounds of herring per trip that they caught in an area closed to directed herring fishing. A vessel cannot land more than 2,000 pounds of herring per day (this prevents a vessel from exceeding the trip limit by making multiple trips).

Rationale: This measure helps control the catch of herring as the TAC is approached. The increasing number of days out of the fishery is designed to steadily reduce harvest in an area so that the TAC is harvested over a longer period, providing a supply of herring to the industry. These days out are also designed to allow a vessel to fish in an open area when one area is closed, moving effort out of the areas where catches are approaching the TAC.

The allowance of an incidental catch after 95% of the TAC is caught allows other fisheries to continue after the directed herring fishery is closed. There is a risk that the 5% allowance is not sufficient to preclude the total TAC from being exceeded. Justification for this level is contained in section E.7.2.5.2. This allowance can be increased through a framework adjustment if necessary.

3.6.5 Transfers at Sea

A vessel may not transfer (or sell) at sea to other U.S. vessels more than 2,000 pounds of herring per day in an area subject to spawning closures or effort controls. A vessel may not transfer (or sell) to other U.S. vessels more than 2,000 pounds of herring per day caught in an area subject to a spawning closure or effort controls. A vessel that catches herring in an area subject to a spawning closure or effort controls may not transfer (or sell) any herring to an IWP or JV processing vessel. Any herring that is transferred will be counted against the vessel's daily limit (see section 3.6.4).

The transfer or sale of herring at sea, except as limited by this restriction, is an authorized activity that may be subject to other regulations. For example, under the existing definition of a dealer, a lobster boat that receives bait at sea is required to file a dealer report. In other fisheries, NMFS has required vessels that conduct transfers at sea to obtain a letter of authorization from the

Regional Administrator.

Rationale: Allowing a vessel to transfer herring at sea during a closure or when subject to effort controls complicates the enforcement of the 2,000 pound trip/possession limit. A complete prohibition on all transfers, however, would unnecessarily restrict the lobster and tuna fisheries. Boats in these fisheries frequently obtain fresh bait through transfers (sales) at-sea. This measure places some controls on transfers at-sea to prevent them from leading to wide-scale violations of the trip limit. While difficult to enforce, the measures provide enforcement officials with a regulation against excessive transfers to use if they suspect a vessel of a violation. Violations of this regulation are not likely to be detected through routine enforcement actions, because it will be difficult for enforcement officials to detect repeated transfers unless specifically targeting that activity.

3.6.6 Vessel Size Limits

Domestic vessels catching, taking, or harvesting herring must be less than 165 feet in length, and can be no more than 750 GRT (a vessel that exceeds either of these limits cannot catch, take, or harvest herring). Domestic vessels catching, taking or harvesting herring must have no more than 3,000 shaft horsepower.

The amount of herring that domestic vessels over 165 feet in length, or more than 750 GRT, can receive or process at-sea is limited to the amount specified for U.S. at-sea processing (see section 3.2).

Rationale: Large vessels entering the herring fishery would rapidly increase the harvest of herring. The SARC (NEFSC 1998) recommended that the herring harvest be increased in an incremental manner until the precision of stock estimates can be improved. Restricting the size of vessels that can enter the open access fishery will slow the increase in harvest rates. Analysis (section E.1.1.1.1) of existing harvesting capacity in the Northeast Region shows it is sufficient to harvest the resource (should vessel operators find markets for their catch and choose to do so) and that an increase in harvesting capacity is unnecessary. There are also concerns over possible marine mammal interactions and bycatch.

The Council wishes to take a cautious approach on the introduction of at-sea processing capacity in the herring fishery until the risks and benefits are more clearly understood, particularly with respect to the impact on fishing communities. The provision restricting these vessels to a specific allocation allows for the careful development of the fishery. (These issues are discussed further in sections E.7.2.5.4, E.1.1.1.1, and E.7.4.2.2).

3.7 Roe Fishery

Herring may be harvested for roe as long as the carcass is not discarded. The Council will carefully monitor the development of the roe fishery. Should the amount of herring harvested for roe become a concern, the amount of herring that may be used for roe will be specified by the Regional Administrator based upon the recommendation of the Council after consulting with the Commission. Should the harvest of herring for roe become excessive, additional management measures will be implemented through framework action to limit the harvest of herring for roe.

Rationale: This measure provides the ability to establish a harvest level to control the roe fishery. A roe fishery is unlikely to develop in Management Area 1 because of spawning closures. Such a fishery may develop in the other areas, however, as there are no spawning closures being implemented. The possession of herring roe at sea will only be authorized if carcasses are also retained (this will require establishment of an expected product recovery rate to allow enforcement of this measure). This measure allows the cautious development of a fishery that takes advantage of the high value of herring roe while at the same time protecting the resource.

The genesis of the restriction on discarding carcasses is the experience with the pollock roe fishery in the North Pacific in the late 1980's. An unlimited harvest of roe rapidly led to concerns for the resource, as well as objections to the amount of waste generated in a roe fishery that allows the discard of the carcass. In this case, not only were the carcasses of female pollock discarded after stripping the roe, all male pollock were also discarded. Requiring retention and use of the carcass is consistent with the M-SFCMA purpose to develop under-utilized fisheries "...in a non-wasteful manner..." Without a requirement to retain the carcass, it is also difficult to accurately determine the amount of herring actually harvested. In particular, if male herring are discarded in a roe fishery, there isn't any way to accurately determine the number of herring caught. This would weaken the effectiveness of the TAC as a conservation tool to protect the resource. By prohibiting the discard of male and female carcasses in a roe fishery, a more accurate estimate of actual harvest levels can be determined.

3.8 Measures to Reduce/Monitor Bycatch

National Standard 9 of the M-SFCMA requires that conservation and management measures, to the extent practicable, minimize bycatch and, to the extent it cannot be avoided, minimize the mortality of bycatch. The term 'bycatch' means fish which are harvested in a fishery, but which are not sold or kept for personal use, and includes economic discards and regulatory discards of both target and non-target species.

There is limited information available on the extent of bycatch of regulated or protected species in the herring fishery. Recent observations on directed herring trips indicate that there are occasional large discards of herring in the fishery; in the case of some gear types, some of these discards may survive. Because these observations are all from one fishing year and are limited in the area covered, the results cannot be generalized over the entire fishery. This issue must be evaluated as the fishery expands and measures may need to be adopted in the future to minimize discard mortality.

There are discards of herring that may be reduced by some of the proposed measures in the plan. For example, some discards occur because the catch consists of spawn herring unfit for the desired market. The adoption of spawning closures may help reduce the occurrence of these discards. There have also been discards reported because vessels only needed a certain amount of herring to meet market needs. The existence of an overall TAC may tend to reduce this type of discards.

Herring vessels may also catch of some marine mammals. For marine mammals, the Northeast

Fisheries Science Center has advised on a working hypothesis—that mid-water trawling for pelagic species will result in some marine mammal bycatch. They further state that based on worldwide information, the historical distant water herring, mackerel, hake and squid fisheries that operated within the EEZ prior to 1977 had a marine mammal bycatch, although no documentation exists on the magnitude of the bycatch. There may be a need in the future for measures to protect marine mammals.

Restrictions in the FMP on the maximum size of vessels allowed to catch herring may reduce the likelihood of bycatch of marine mammals. Large pelagic trawlers in the mackerel fishery are known to have taken marine mammals (Waring et al. 1990). While the reasons are not clear for the level of takes, the prohibition on these vessels will help prevent a recurrence of this problem.

The plan does not restrict the landing of incidental catches of herring in other fisheries unless there is a spawning closure or effort controls in effect. In these instances, vessels are only allowed to possess up to 2,000 pounds of herring. This amount will prevent development of a fishery targeting small amounts of herring while reducing regulatory discards in other fisheries.

In order to monitor bycatch, the approach of the Atlantic Coastal Cooperative Statistics Program (ACCSP) will be adopted. Vessel operators will be required to record any bycatch or incidental catch; these reports will be examined by the PDT (in conjunction with the TC) on an annual basis to determine if additional management measures are required. As pointed out by the ACCSP, the most effective way to monitor bycatch is through independent fisheries observers. The Council encourages NMFS to include the herring fishery in its observer program.

3.9 Joint Venture Restrictions

3.9.1 Permits

Permits are required for foreign vessels conducting joint venture operations. Foreign vessel operators requesting a permit to conduct joint venture operations must submit an application through the Department of State. Permits may be approved and issued by NMFS through the Department of State. Detailed procedures are specified in 50 CFR 600.501. NMFS provides the Council an opportunity to comment on any application for a permit from a foreign vessel. In reviewing permit applications, the Council may consider any commitment by the vessel operator or owner to assist in the development of U.S. shoreside processing capacity for herring.

The following restrictions constitute part of the permit conditions for foreign joint venture processing vessels.

3.9.2 Management Area Restrictions

Joint venture (JV) activities are allowed in all management areas, subject to an annual review process. Joint venture allocations may be specified by management area. When allocations are specified by area, all herring supplied to that JV operation must be caught in management area with a JV allocation.

Rationale: This option provides the most flexibility for JVP operations, allowing them to locate wherever necessary. At the same time, the annual review and possible allocation by management area provides the ability to consider the impact of joint ventures on shoreside processors.

3.9.3 Observer and Data Reporting Requirements

Observers will be placed aboard each foreign processing vessel. The number of observers will be sufficient to insure all transfers of fish from domestic vessels are observed. Observers must be approved by the NMFS and will be compensated at industry expense. Each observer will be responsible for recording information that includes the quantity of herring unloaded and processed aboard the vessel on a per trip or per load basis, the name of the fishing vessel that caught and/or unloaded the fish, the location where it was caught, the gear type used, the date of capture, etc. They will also monitor the bycatch of any other species, may collect and freeze samples that will be sent to the Northeast Fisheries Science Center for processing, and record the quantity of finished product, by product type, produced each day, including any fish meal and oil or herring roe. Complete instructions and materials will be provided to each observer by NMFS prior to boarding the processing vessels. The presence of an observer does not exempt the master from any reporting requirements described in the plan.

3.9.4 Other Limitations, Conditions, or Requirements

Foreign joint venture processing vessels may neither be in, nor receive fish caught in, areas closed to U.S. vessels to protect spawning concentrations unless there is an overriding safety concern. All other restrictions on foreign vessels regarding the receiving and possession of other species of fish apply. The amount of herring that may be processed into meal or roe may also be specified.

3.10 Vessel Monitoring System (VMS)

A Vessel Monitoring System (VMS) (previously referred to as a Vessel Tracking System, or VTS) is an electronic device used to monitor the location of a fishing vessel. These devices broadcast the position of the vessel on a random, periodic basis, enabling management agencies to monitor the vessel's location.

Any vessel with a federal herring permit must have an operable VMS if it caught or possessed more than 500 mt of herring in the previous fishing year, or intends to catch or possess more than 500 mt of herring in the current fishing year. This requirement does not apply to vessels possessing herring with no ability for harvesting – herring carriers, for example. Any vessel that lands more than 500 mt of herring must declare that intention to the Regional Administrator and must have a VMS at the start of the fishing year. If a vessel does not notify the Regional Administrator and obtain a VMS before the beginning of the fishing year, it cannot catch more than 500 mt of herring in that year. Position reports will be required hourly when the vessel is underway in state or federal waters. Position reports are not required when moored, anchored, or maneuvering in a port. The system used must be approved by the Regional Administrator. Any attempt or method to determine the time or interval of location polling is prohibited.

Rationale: The VMS requirement will assist in confirming fishing locations for enforcement of the area specific TACs. Records of locations can be used to help verify reported fishing locations. While VMS only shows where the vessel was and not the activity, the track can be compared to reported catch locations to confirm the vessel was in the management area reported. Herring vessels can also be quickly located with VMS to verify current activity, which can be compared to trip reports submitted on that trip. VMS will also help enforce spawning closures and effort controls (days out of the fishery). Without VMS, the entire area of a closure requires surveillance. VMS will also support enforcement of closed areas in other management plans. Since herring vessels are allowed to fish in the multispecies closed areas, for example, VMS will help enforcement units identify vessels that are legally fishing in a groundfish closure. The 500 mt threshold insures that the majority of herring landings are monitored, while minimizing costs of the system to the industry.

3.11 Recreational Fishery

No recreational fishery management measures are proposed in this FMP.

Rationale: While there is a small recreational fishery, the catches are currently so small as to make regulation of this fishery unnecessary.

3.12 ASMFC Management Measures

The Council and the Commission worked closely to coordinate management of herring in state and federal waters while developing this plan. In addition to adopting the requirements for permits, recordkeeping and reporting, sea samplers/observers, management areas, all elements of the TAC proposals, the effort controls, use restrictions, and vessel size limits, the Commission plan is adopting management measures described below. Many of these measures were identified during plan development as more appropriate for implementation through state action only. For

example, the federal plan is silent on IWP operations because these activities are regulated by state governors in state waters.

The following measures are included in the Commission amendment to its management plan. These measures will apply in areas of state jurisdiction. They are listed below to give a better understanding of the management of herring throughout its range in state and federal waters.

3.12.1 Spawning Area Restrictions

The Commission is adopting spawning area restrictions for all state waters in the Gulf of Maine (Management Area 1A). Restrictions will start on August 1 and continue through October 31. Any vessel may fish for, take, land, or possess "spawn" herring (herring containing roe or milt) from or within a restricted spawning areas as long as such herring comprise less than 20% by number of the amount possessed on board at any time. The 20% by number will be determined under sampling procedures specified by the states and enforced dockside as a state landing restriction. Spawn herring are defined as those fish determined to be in ICNAF gonadal stages 4, 5, and 6.

3.12.2 Permits

Vessels fishing for herring in state waters only are required to obtain a permit from the appropriate state agency. Vessels fishing with fixed gear will be required to obtain a permit from the appropriate state agency.

3.12.3 Directed Mealing

The harvest of herring for reduction to meal is prohibited. The processing, transfer, or sale of cuttings, byproducts, whole herring condemned for human consumption, or waste is permitted.

3.12.4 Fixed Gear Fishery

All landings from fixed gear will be counted as part of the harvested TAC.

States will require fixed gear fishermen to obtain a permit. Fixed gear fishermen will be required to report weekly all landings of herring on a daily basis to the appropriate state agency.

3.12.5 Vessel Size Limits

Vessels catching, taking, or harvesting herring must be less than 165 feet in length, and no more than 750 gross registered tonnage (GRT). Vessels catching, taking or harvesting herring must have no more than 3,000 shaft horsepower.

3.12.6 Internal Waters Processing (IWP) Restrictions

IWP activities may take place in all management areas, subject to an annual review and the specification of IWP allocations by management area. If IWP allocations are specified by area, the IWP vessel must be in, and all herring processed must be caught from, the area. IWP allocations for the initial year of the plan area:

| | |
|---------|-----------|
| Area 1B | 5,000 mt |
| Area 2 | 20,000 mt |

3.13 Management and Research Needs

In the course of development of these proposed management measures, the Council and the Commission identified management and research needs. In the interest of consistency, the following list is taken from ASMFC Special Report No. 62, List of Prioritized Research Needs.

Develop a long-term strategy for assessing individual spawning stocks as a basis for more effective management of any heavily exploited portions of the stock complex. Evaluate the merits of acoustic surveys and other techniques to achieve sub-stock complex monitoring.

Pursue the development of a dedicated pelagic survey technique utilizing hydro-acoustic and trawling methods to provide another direct and independent means of estimating stock size.

Reinvestigate the estimation of age-3 herring, the natural mortality rate assumed for all ages, the use of catch-per-unit-effort tuning indices, and the use of NEFSC fall bottom trawl survey tuning indices in the analytical assessment of herring.

Conduct a retrospective analysis of herring larval and assessment data to determine the role larval data plays in anticipating stock collapse and as a tuning index in the age-structured assessment.

Investigate alternative methods of estimating mean weight at age used to determine the age composition of U.S. and Canadian landings from the coastal stock complex.

Evaluate the concept of a minimum biologically-acceptable level biomass (MBAL) for the herring coastal stock complex. Determine the adequacy of present methods and data to determine MBAL if appropriate.

Evaluate the concept of a fixed spawning stock size or spawning target for the herring coastal stock complex. Determine the adequacy of present methods and data to set a target if appropriate.

Investigate the effects of averaging maturity rates over blocks of years to help smooth some of the inter-annual variability in the calculation of spawning stock biomass.

Consider potential discards if fishing mortality increases in the future.

Organize annual U.S.-Canada workshops to coordinate stock assessment activities and optimize cooperation in management approaches between the two countries.

In addition to the above needs, the Council has identified this additional need:

Determine the extent of bycatch in the fishery and its impact on the use of TACs in managing the fishery.