

4.2.6 Enforcement and administrative costs

The implementation of the measures proposed by this framework may increase administrative and enforcement costs for the government. These potential costs may arise as follows:

- 1) at-sea enforcement of an additional Georges Bank area closures in May.
- 2) monitoring the landings in near real-time, or projection of landings to trigger closures in Gulf of Maine cod fishery to determine if 50 percent of the TAC is landed by July 31.
- 3) establishment of a certification program for party/charter vessels to obtain an exemption to fish in closed areas and enforcement of the program
- 4) enforcement of prohibition on using days-at-sea when taking passengers for hire.
- 5) administration of the changes to the large mesh permit category, including re-calculation of DAS for vessels exiting the program after one month;

Although these measures may increase the enforcement and administrative burden, they are not expected to change the monetary costs of enforcement for the government to a significant degree since the budgetary allocations for enforcement in NMFS and the Coast Guard do not provide for any increase. Allocation of the existing resources for the administration or enforcement of these measures may, however, result in reduced enforcement of other management actions. In other words, the enforcement and administration of the new measures may reduce the overall efficiency of the affected agencies without an increase in the budgetary allocations for these resources.

Some of the measures listed above will not require at-sea enforcement, but impose Paperwork Reduction Act (PRA) related burdens. The costs associated with these activities are calculated in the PRA materials submitted under separate cover.

4.3 Social and community impacts

4.3.1 Introduction and Background

This Social Impact Assessment characterizes the magnitude and extent of the social impacts likely to result from the proposed management action as well as from the other alternatives considered by the Council during the development of Framework 33 to the Northeast Multispecies FMP.

The proposed action for Framework 33 is represented by “Gulf of Maine Option 2” and “Georges Bank Option 5” in the following analysis.

4.3.1.1 Introduction

National Standard 8 of the Magnuson Stevens Fishery Conservation and Management Act states that:

Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

National Standard 8 requires the Council to consider the importance of fishery resources to affected communities and provide those communities with continuing access to fishery resources, but it does not allow the Council to compromise the conservation objectives of the management measures. “Sustained participation” is interpreted as continued access to the fishery within the constraints of the condition of the resource. The long-term conservation and rebuilding of stocks often require that limits be placed on particular gears and/or the harvest of specific stocks. Thus, National Standard 8 is interpreted to apply only to a consideration of continued overall access to fishery resources and is not a guarantee that fishermen will be able to use a particular gear type, harvest a particular species of fish, fish in a particular area, or fish during a certain time of the year.

When the Council implemented the multispecies stock rebuilding program in Amendment 7, it recognized that the measures required to achieve the plan objectives would have significant social and community impacts. It stated that the breadth and scope of those measures would likely cause social change proportional to the individual or community dependence on the affected stocks. The Council also noted that the social impacts of the management measures are largely related to their economic impacts, and as such would be severely negative in the short-term and positive in the long-term, although some fundamental changes would occur for which a value cannot be assessed.

Some of the expected impacts have already manifested themselves through changes at the vessel and community level. On the positive side, such changes include ways of adding value to landed species through the establishment of display auctions in some of the major groundfish ports and the growth and development of markets for live fish. Communities have also evolved to support the redirection of effort into other fisheries. Negative changes have included a decrease in fishing employment opportunities and a subsequent increasing need to seek new or supplementary employment outside of fishing. Additional changes that have occurred include disruption in work patterns, family lifestyles, and community networks caused by more constraints on fishing seasons, areas, and allowable landings.

A fundamental problem exists, however, in attributing social change to specific factors such as management regulations when communities or other societal groups are constantly evolving in response to numerous external factors, such as market conditions or technology. Certainly, management regulations influence the direction and magnitude of social change, but attribution is difficult with the tools and data available. Attribution is particularly difficult considering the dynamic nature of fishing communities and other social groupings of individuals in the industry, and in comparison to the no-action alternative in the context of a declining or collapsing resource.

As noted in Framework 27, the Council recognized that the measures contained in that framework would result in short-term hardships on the fishermen and communities that depend on fishing for cod, or fishing in the areas that were to be closed. The direct social impacts of the framework action were expected to be proportional to the dependence of each community or vessel class on the cod landings, and on other fisheries affected by the area closures. In recognition of the losses incurred by fishermen due to closures under Frameworks 25, 26, and 27, Congress appropriated \$5 million to NOAA to provide emergency disaster relief. On September 7, 1999, NMFS

published a notice in the *Federal Register* (64 FR 48594, Sept. 7, 1999) detailing the final information concerning criteria for eligibility, limitations and conditions for receiving the disaster relief. On October 5, 1999, Massachusetts Senators Kennedy and Kerry announced that the Agriculture Appropriations Conference report contains \$15 million in funding that will be directed to groundfish fishermen hard hit by recent closures and low trip limits in the Gulf of Maine. The money will be used to fund industry-based research activities and will help offset economic losses due to the restrictions needed to rebuild Gulf of Maine cod.

As has been stated in numerous framework adjustments, subsequent to Amendment 7, the Council realizes that the cost of conservation is borne by the fishermen and communities dependent on the fisheries being restricted. The justification for imposing these costs is the overwhelming long-term economic benefit of a resource base that is rebuilt to and managed at maximum sustainable levels. While some stocks of fish are responding to management measures implemented since Amendments 5 and 7, other stocks are still in need of conservation. Strategies that minimize short-term social impacts may cause long-term impacts to be more significant due to the longer rebuilding times that will result. The social impacts of measures designed to rebuild other multispecies fisheries will be discussed when those measures are identified and analyzed in Amendment 13.

In general, management measures implemented through Framework 33, as with all framework adjustments, are intended to fall within the scope of the rebuilding program initiated by Amendment 7. Therefore, while there may be short-term social impacts resulting from the Framework 33 actions, the long-term social impacts of this framework adjustment are consistent with the Amendment 7 assessment. The long-term social impacts discussed in Amendment 7 will be re-evaluated in Amendment 13. Nevertheless, this social impact discussion attempts to characterize the type and magnitude of short-term social impacts that can be expected from the Framework 33 alternatives. It also characterizes the differences between the expected social impacts under each management alternative in order to provide the Council with information useful in selecting the final management measures to be included in Framework 33.

4.3.1.2 Background

A description of the affected human environment (multispecies fishermen and fishing communities) as well as an assessment of the social impacts of the multispecies rebuilding program are presented in Amendments 5, 7, and 9. In addition, Frameworks 25, 26, 27, 30, and 31 contain useful information on affected fishing vessels and communities. The information in these documents can supplement this social impact assessment and provide background information to help assess the impacts of management alternatives. This information was used to qualitatively assess the social impacts of the alternatives under consideration for this framework adjustment. No new information about affected ports and communities was available for consideration in this social impact assessment. However, Amendment 13 to the Northeast Multispecies FMP will provide updated social and economic information to comprehensively characterize the socioeconomic baseline from which management actions will be evaluated.

4.3.2 Social Impacts of Framework 33 Alternatives

The following sections represent an assessment of the potential social and community impacts of the various alternatives under consideration in Framework 33 to the Multispecies FMP. This analysis compares the expected impacts of each alternative under consideration to both a baseline scenario and the other alternatives under consideration. However, comprehensive, updated information and data were not available to accurately quantify baseline socioeconomic conditions in affected fishing communities and to provide meaningful comparisons based on quantifiable impacts. This assessment, therefore, serves as a qualitative analysis of the type and magnitude of social impacts likely to result from the alternatives under consideration. It seeks to compare the alternatives, identify differences between the alternatives, and provide the Council with information useful for selecting final measures to be submitted in Framework 33.

The “baseline” scenario with which Framework 33 alternatives are compared represents the status quo, i.e., 1999 fishery conditions. Fishery regulations during 1999 included Framework 26 and 27 “rolling closures,” a year-round western Gulf of Maine area closure, various Gulf of Maine cod trip limits, and a partial year trip limit for Georges Bank cod of 2,000 pounds. This is the scenario against which management options will be compared. Any social impacts likely to result from the Framework 33 alternatives can be attributed to changes to the above baseline scenario. While the prevailing socioeconomic atmosphere in affected fishing communities during 1999 is unknown at this time, comparison to a 1999 baseline is still useful to identify specific (new) management measures that are likely to produce either negative or positive social impacts and to identify critical areas or “hotspots” where social impacts could be more severe, at least during the short-term.

4.3.2.1 Scale of Assessment – Fishing Communities

For the purposes of this social impact assessment, fishing communities will serve as the primary scale of measurement. Section 316 of MSFCMA defines a fishing community as:

“a community which is substantially dependent on or substantially engaged in the harvesting or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community.”

It is important to note that fishing communities are not “bounded” or separated from the commerce and institutional apparatus of the larger cities and towns in which they are located. In fact, most fishing communities rely on a rather complicated network of business and social ties that extend well beyond the boundaries of their communities and often into other fishing communities in the region.

A comprehensive social impact assessment considers impacts on both primary and secondary fishing communities throughout the region. The fishing communities most likely to be affected by the management actions under consideration in this framework adjustment are the ones whose vessels and shoreside facilities depend on groundfish resources and/or the ones that are located adjacent to areas proposed for closure. For the Gulf of Maine management measures, the primary fishing communities to consider include Portland (ME), Gloucester (MA), and Portsmouth/Hampton (NH). Secondary communities include Rockland and downeast (ME),

North Shore (MA – Newburyport and Boston), South Shore (MA – Scituate and Plymouth), and Provincetown (MA). For the Georges Bank management measures, primary fishing communities likely to be affected include Chatham (MA), New Bedford (MA), Point Judith/Narragansett (RI), and Stonington (CT). Secondary communities include several smaller ports along Cape Cod (MA) and several smaller ports in Rhode Island and Connecticut.

When predicting social impacts of management measures according to a set of assessment variables, it is important to consider changes to the following components of each fishing community:

- The fishing fleet (vessels grouped by fishery, primary gear type, and/or size);
- Boat owners and captains;
- Crew;
- Fish buyers (dealers);
- Seafood markets;
- Community cooperatives;
- Fishing industry associations;
- Cultural components of the community;
- Fishing families.

4.3.2.2 Assessment Variables

When conducting a social impact assessment, it is useful to identify a set of assessment variables, which can then be compared to a baseline scenario to predict the potential social outcomes of various management alternatives. When establishing a baseline scenario, these assessment variables are often measured through “social indicators,” or a set of multidimensional measures that help to provide a concise description of baseline socioeconomic conditions in the community. Some examples of social indicators include voting rates, land use, household composition, material production, library loan rates, unemployment rates, and per capita income. In theory, measurement of a relevant social indicator before and after a management action becomes effective should help quantify the change caused by the action, allow for a better understanding of the social impacts of the action, and improve the ability to monitor changes in communities resulting from future management actions.

Because information on the measurement of social indicators in fishing communities is currently incomplete, this assessment cannot predict the social impacts of management alternatives based on measurable changes in social indicators (and consequently changes in the assessment variables). Instead, this analysis qualitatively discusses the likelihood of experiencing changes in the assessment variables and characterizes the likely magnitude and direction of the change. Ideally, to assess the accuracy of the predictions made in this analysis, one would measure a set of social indicators chosen to reflect changes in the identified social impact assessment variables.

The variables described in the following subsections will be considered relative to each management alternative and will be used as a basis for comparison between alternatives. While not enough data exist to comprehensively assess and measure the potential changes in the identified assessment variables, discussion of the potential changes in the variables as a result of management actions provides information useful for better decision-making. Towards that end,

assessment of the potential changes to the social impact assessment variables should be considered in the following context:

1. Size and demographic characteristics of the fishery workforce in the community –changes in these factors reflect demographic, income, and employment impacts in relation to the community’s available fishery workforce
2. Cultural issues – attitudes, beliefs, values of fishermen, their families, and their communities
3. Social structure and organization – the ability of communities to provide necessary social support and services to families
4. Non-economic social aspects – lifestyle, health, and safety issues
5. Historical dependence on fishery – reflected in the structure of fishing practices and income distribution

4.3.2.2.1 Formation of Attitudes and Interest Group Activity

Formation of Attitudes – positive or negative feelings, beliefs, or positions expressed by impacted members of the fishing communities regarding the alternatives under consideration for Framework 33; this variable provides information about the community climate that prevails; can help to assess the need for mitigation; measurement of this variable will provide for a better understanding of how changes induced by this framework adjustment could influence the affected communities.

Interest Group Activity – formal and informal interest organizations stating positions for or against the alternatives under consideration; “interest groups” are defined as identifiable forces active in the fishery and in fisheries management that represent sub-categories of the fishery that stand to gain or lose by the implementation of the management measures proposed in the framework; interest group activity can play an important role in shaping the community’s response to fishing regulations.

Within the New England groundfish fishery, the attitudes of the various parties with a stake in the fishery (commercial and recreational fishermen, processing industry, shore-based industries, etc.) toward the measures contained in the framework adjustment are critical components for determining how the parties perceive that the impacts are distributed throughout the fishery. Attitude formation plays a key and often overlooked role in the general level of compliance and cooperation with regulators and with the Council.

Management of the Northeast groundfish fishery has been, and continues to be, a politically contentious effort to allocate potentially significant economic benefits to competing user groups while preserving the long-term viability of the resource base. As the status of the Gulf of Maine cod fishery has declined and social and economic dislocation has increased, particularly in the period following the implementation of Amendments 5 and 7, the process has become heavily impacted by an increasing number of interest groups. A systematic examination of these groups, i.e., how they are organized; what their goals, objectives, and activities are; how they participate in the management process directly and indirectly, as a component of this assessment would provide a critical understanding of the existing and potential role for interest groups in the management process.

Assessment of this variable should address the following questions:

- How could attitudes and perceptions within an affected community shape its overall reaction to the management measures under consideration?
- What are the attitudes and perceptions of interest groups and communities towards the proposed action? Are they more positive or more negative than those towards the alternatives that were rejected by the Council?
- What interest groups have been most involved in the development of the Framework 33 alternatives? Can their involvement help to mitigate some of the negative social impacts of the management measures in the short-term?

4.3.2.2.2 Changes in Occupational Opportunities

Description – the degree to which the implementation of the alternatives in this framework could alter the occupational profile of the affected fishing communities; changes in occupational opportunities can lead to changes in household/family income, classes, and lifestyles; in assessing this variable, both the short-and long-term shifts in job opportunities should be considered.

The economic implications of changes in occupational opportunities for resource-dependent fishing communities are well-documented and are often erroneously equated with social impacts. Impacts arising from changes in occupational opportunities that are more social in nature are more difficult to identify and quantify. Emphasis should be placed on identifying potential changes in the unique social and family arrangements that characterize the communities under consideration, particularly on changes in household employment patterns, trends in family-run fishing businesses, and participation in job retraining programs. Special consideration should also be given to social and cultural values and norms that may be affected by changes in opportunity, such as long-term family involvement in the fishery, job satisfaction, and respect for fishing as an occupation and a way of life.

Assessment of this variable should address the following questions:

- Could the proposed action change the structure and/or composition of New England’s fishing fleets? Are these changes different than those expected under the other alternatives considered by the Council?
- Are the management measures proposed in this framework adjustment likely to affect the supply and/or cost of fishing-related employees?
- Will New England’s fishermen have alternative fishing opportunities under the proposed action?
- Is the proposed action likely to increase the number of fishermen who are leaving the fishery and getting retrained in other occupations?

4.3.2.2.3 Industrial Diversification and Changes in Community Infrastructure

Industrial Diversification – this variable characterizes changes in the number and variety of fishing opportunities available to the affected communities under each framework alternative; potential changes in the makeup of the commercial fleet (including specification by gear types, vessel sizes, crew sizes) and the recreational fleet should be considered; the more diverse the fishing fleet is, the better able it is to absorb the impacts of more restrictive fishing regulations.

Changes in Community Infrastructure – this variable measures the increase or decrease in the demand and supply of basic infrastructure services and facilities essential to fishing in the affected communities, including processors, seafood markets, boat and equipment repair shops, bait and ice providers, display auctions, cooperatives, creditors, legal services, etc.; the cost and availability of these services can affect fishing community members’ business practices, satisfaction with their community, and overall well-being.

Assessment of the potential for industrial diversification is critical for two reasons: (1) gear types, vessel sizes, and commercial/recreational status are categories directly addressed in the framework adjustment, and (2) social groups in the fishery are often organized around membership in these user groups. Measuring diversification within the fishing industry helps to predict how various sectors directly participating in the fishery could revise their operations to better adapt to the regulations implemented through this framework adjustment. This should provide some insight into the ability of the groundfish fleet (and its components) to diversify into other fisheries.

The cost, quality, availability, and location of fishing-related services not only directly impact the daily operations and business decisions of fishermen, but also influence the well being of participants in the fishery and their perceptions about their lifestyle and community. Additionally, these service industries provide alternative, fishing-related employment opportunities in port communities and contribute significant revenues to the county or city in which the fishing community is located.

Assessment of this variable should address the following questions:

- How could shoreside infrastructure in fishing communities be affected by the proposed action? (this includes processors, dealers, markets, bait and gear suppliers, etc.)
- Can New England fishing fleets adapt to the regulations implemented through this framework adjustment? How?

4.3.2.2.4 Disruption in Daily Living

This variable characterizes changes in the routine living and work activities of participants in the groundfish fishery, including the potential for alteration in their regular social and work patterns to minimize the impact of the management measures; consideration should be given to changes in daily living that affect perceptions of the port community, including the willingness of residents and outsiders to invest time and money in the port community.

Measuring changes in established daily patterns – patterns that, in the case of fishing communities such as those identified for study here, are often internally generated and regulated and highly regimented – can provide a key component to social impact assessment. Although the existence, nature, and evolution of these patterns in fishing communities is well documented by marine anthropologists, the effects of changes to these patterns have often been overlooked in conducting social impact assessments for fishery management. This variable is particularly relevant for this assessment because of the seasonal area closures that are a component of most of the alternatives under consideration. Inshore, “rolling” area closures could result in 3-4 months of relative

inactivity in some of the fishing communities. Ideally, measurement of disruption in daily living in these communities should include an assessment of the outcomes of this period of inactivity, including changes in social stress and stress-related health problems, job satisfaction, crime rates, and family cohesion.

Assessment of this variable should address the following questions:

- How could the proposed action alter the daily living and work patterns of fishing families in the affected communities?
- Will fishermen need to travel to new fishing grounds or fishing grounds farther away from their homes? Will fishermen be spending more time away from home?
- Could the proposed action increase stress at the family level?

4.3.2.2.5 Alteration in Family Structure

Measurement of this variable should predict increases or decreases in one or more of the measurable family status categories (e.g., married, never married, female head of household, with/without children) within the fishery as a result of the management measures under consideration for this framework adjustment.

Assessment of this variable should describe, to the extent possible, the impact of the proposed management measures on the fishing family units in the affected fishing communities. To date, many of the factors that are described when characterizing changes in this variable (changing divorce rates, spouses entering the workforce, increased absence of fishermen from the home as a result of joining the crew on a large vessel) are frequently cited in fisheries-related social and economic impact assessments, but have not been systematically measured for the New England multispecies fishery. Measurement of this variable can also characterize the extent to which other members of the fishing family (spouses) have been forced to enter the workforce to provide the family with a secondary source of income.

Assessment of this variable should address the following questions:

- Could the proposed action alter the structure of fishing families in the affected communities? How?
- Will more spouses be forced to enter the workforce as a result of the management measures?
- Could the framework action result in the dissolution of fishing families in affected communities?

4.3.3 General Discussion of Measures Under Consideration

The following sections generally discuss social impacts associated with trip limits (and/or possession limits) and area closures. All of the Framework 33 alternatives, including the proposed action, include trip limits and area closures as the primary management tools. The following discussion, therefore, applies to all alternatives under consideration for Framework 33, including the proposed action.

4.3.3.1 Trip Limits

Trip limits are an important component of the Framework 33 management measures. Trip limits are proposed for Gulf of Maine cod, Georges Bank cod, and for haddock. All four options under consideration for the Gulf of Maine in this framework adjustment propose that the Gulf of Maine cod trip limit be set at 400 pounds per day. This represents the status quo (as of Framework 31) and an overall increase from trip limits as low as 30 or 100 pounds during 1999.

In general, trip limits can affect the structure of a fishery. If the trip limit is set very low, the inshore sector of the fleet can sometimes manage to fish economically, while the offshore sector of the fleet cannot cover trip expenses. This can change the structure of financial rewards generated in the fishery and can ultimately change the short- and long-term structure of the fishery itself. These types of impacts, however, have not been evident in the Gulf of Maine cod fishery since 1998 because cod trip limits have been set too low for even small, inshore vessels to fish for cod economically.

Fishermen's views on trip limits are generally based on what they perceive the limit will do to their income, not that a trip limit itself holds some socially or culturally undesirable characteristic. However, Gulf of Maine cod trip limits have recently been set so low that they indeed hold a socially undesirable characteristic: regulatory discarding. Over the past year, fishermen have testified at Groundfish Committee and Council meetings that, at some times of the year, they have been forced to discard large quantities of Gulf of Maine cod due to an extremely restrictive trip limit. This is something that fishermen in general *do not* want to do. Recently, fishermen have referred to the discarding of Gulf of Maine cod as a "sickening" or "disgusting" waste of a valuable resource. They understand that throwing fish overboard once they are caught does not contribute to rebuilding the stock (since most of the fish are already dead), and they perceive the low trip limit and discarding as a means to prolong the stock's recovery time and, consequently, their own hardships. Fishermen hate to throw fish overboard, and regulations that force them to do so increase their negative feelings towards fishing and fisheries management. Some fishermen even favor non-compliance with the regulations over wasting the resource from which they make their living.

Any alternative that increases the Gulf of Maine cod trip limit to a level that minimizes regulatory discarding without compromising stock recovery will undoubtedly improve the social impacts of the trip limit itself since most of the negative social impacts result from attitudes that form when fishermen are forced to discard their catch.

4.3.3.2 Area Closures

All of the alternatives under consideration for the Gulf of Maine and Georges Bank in this framework adjustment include area closures, either year-round or seasonal "rolling" closures, or both. The following provides a general discussion of the potential social impacts of such area closures in the Gulf of Maine and Georges Bank. The potential impacts of specific alternatives are discussed in subsequent sections of this analysis.

In general, two categories of fishing vessels will be most affected by the area closures proposed in this framework adjustment: (1) vessels from fishing communities directly bordering the proposed

area closures, and (2) vessels from other fishing communities that have traditionally accessed the proposed closed areas to fish. Affected vessels from both categories include not only those vessels that fish for Gulf of Maine or Georges Bank cod, but also those vessels that fish for other species like flatfish or scallops.

The vessels in Category (1) will be the most directly affected by the inshore and “rolling” area closures because the area closures border on the coastlines of their communities and, in some cases, extend up to 80 or 100 miles offshore for a period of time. For the Gulf of Maine, these vessels are primarily based in the communities of Gloucester, Newburyport, Provincetown, and Boston, Massachusetts as well as most communities along the New Hampshire coastline. For Georges Bank, these vessels are primarily based in communities like New Bedford (MA) and communities along outer Cape Cod (primarily Chatham and Harwichport), Massachusetts.

Within this category of affected vessels, smaller vessels (less than 51 GRT) will be at a greater disadvantage to adjust to the regulations because of their inability to travel beyond the area closures to fish. Medium and larger-sized vessels will undoubtedly be constrained and inconvenienced, but the physical characteristics of these vessels may allow them to sustain some level of offshore fishing activity during the time period of closure. A majority of the vessels in question, especially those from Gloucester, Chatham, Harwichport, and communities in New Hampshire, are smaller-sized vessels and may be forced to seek alternatives to fishing for multispecies due to the closures. This held true for the inshore area closures implemented through Frameworks 25, 26, and 27. The communities in which these vessels conduct their fishing activities are likely to demonstrate the greatest short-term social impacts resulting from the proposed framework action.

The second category of affected vessels is comprised of vessels that have accessed the proposed closed areas to fish for a variety of species and are now facing closure of these fishing grounds. Although some of the affected vessels in this category include those from fishing communities bordering the area closures (see Category (1) above), others may come from communities in Maine and other New England and Mid-Atlantic states. These vessels, while inconvenienced and limited in terms of their flexibility, may still have the opportunity to fish in other parts of the Gulf of Maine as well as in other regions. Most vessels that have the capability to travel from their home communities to the proposed closure areas will be able to travel to alternative areas to fish. Thus, affected vessels in Category (2) but not in Category (1) are more likely to shift their effort into other areas (and perhaps onto other species) and should have the opportunity to maintain an overall level of fishing closer to their historic levels. The communities in which these vessels conduct their fishing activities (Portland, Maine, for example) are less likely to experience short-term social impacts resulting from the proposed framework action.

There are other sectors of the groundfish industry that are likely to be affected by the proposed area closures. Shoreside facilities that supply bait, ice, fishing gear, and other supplies may suffer from a decrease in fishing activity in their communities, especially if vessels in their communities are unable to access fishery resources for a period of time. The greater dependence on fishing for groundfish in communities like Gloucester could ultimately lead to a greater potential for community economic dislocation resulting from the management measures. According to recent

information from the U.S. Census Bureau, Essex County (Gloucester, MA) employs close to 6,000 persons in fishing related businesses (processing, seafood markets, vessel repair, etc.). Support infrastructure in communities such as Gloucester is estimated to be at a premium, and very little additional infrastructure could be lost without having a major impact in the ability of the fleets in these communities to operate (Aguirre International, 1996).

Loss of income, changes in the structure of the fishery, and displacement from the fishery are likely to result in the short-term from the area closures proposed in most of the alternatives under consideration. The need for financial assistance, when combined with the perception of lowered social status resulting from decreased income, can often result in lowered self-esteem and negative impacts on job satisfaction. These social impacts are often consequences of any management plan directed at reducing exploitation. They also tend to manifest themselves in alternatives that include either large-scale, long-term area closures or nearshore area closures that preclude opportunities for smaller vessels.

Inshore closures like those proposed in some of the Framework 33 alternatives may require that vessels find new fishing grounds and/or travel farther to fish. The potential need to spend more time at sea as a result of Framework 33 area closures may produce negative short-term social consequences. In fact, length of time at sea has been cited as an important characteristic affecting job satisfaction because of the amount of time fishermen are required to spend away from their families and communities and because of the potential for owners of smaller vessels to compromise their own safety to maintain income during the closure time (Pollnac and Littlefield, 1983).

The Council acknowledges and understands the potential short-term social ramifications of additional inshore area closures proposed in Framework 33. When selecting the final alternative for inclusion in Framework 33, the Council considered the potential socioeconomic effects of the area closures on communities, especially those neighboring the closure areas. The Council is trying to maximize the protection of Gulf of Maine and Georges Bank cod while minimizing the economic impact on fleet revenues in the groundfish fishery and in other fisheries. Quite often, minimizing negative economic impacts serves as a means to minimize social impacts resulting from regulations. The Council recognizes that any closures implemented through Framework 33 will produce additional negative short-term consequences for affected communities, but it believes that the closures are critical to achieving conservation and management objectives for Gulf of Maine cod and Georges Bank cod. In turn, when selecting the final alternative, the Council hopes to minimize short-term adverse impacts on fishermen, their families, and their communities by minimizing economic dislocation resulting from the area closures.

In summary, the additional area closures proposed in Framework 33 will probably require fishermen and their respective communities to adjust to the regulations aimed at rebuilding commercial groundfish stocks. How these adjustments will affect individuals, their families, and their communities varies with a number of factors, such as their dependence on Gulf of Maine or Georges Bank cod and their ability to increase the value of a reduced catch or to shift effort to other fisheries in order to maintain a stream of revenues.

These impacts, however large or small, must be compared to the potential impacts of taking no action. Taking no action to protect Gulf of Maine cod in particular as well as other groundfish at this time could quickly result in stock biomass falling below the minimum biomass threshold as well as the potential for significant recruitment failure. According to the Amendment 9 control rule, when the Gulf of Maine cod stock biomass falls below the minimum biomass threshold, the Council is required to reduce mortality to as close to zero as practicable. If the Gulf of Maine cod stock were to continue to decline, the Council would be required to take additional management action, the social consequences of which are likely to be more severe and much larger in scale. In addition, further declines in stock levels would lengthen recovery periods and, therefore, the period over which the greatest negative social impacts are felt by affected communities.

4.3.3.3 Gulf of Maine Options

The following sections discuss the potential impacts of each Gulf of Maine cod alternative under consideration. At the final Framework 33 meeting, the Council selected Gulf of Maine Option 2 (with the “backstop” area closures) as the proposed action.

4.3.3.3.1 Gulf of Maine Option 1

Gulf of Maine Option 1 extends many of the current management measures into the 2000-2001 fishing year. Proposed area closures include those implemented in Frameworks 26, 27, and 31 as well as an extension of the year-round western Gulf of Maine closure. This option proposes the same trip limit for Gulf of Maine cod as Framework 31 (400 pounds per day plus the interim running clock). Under this option, the first day of a trip *may* be counted as either 15 or 24 hours, or the status quo. In addition, this option would require vessels (except day gillnet vessels) to take layover days equal to their trip length during May-June, July, November, and December. Day gillnet vessels would instead be limited to 80 net tags (40 nets) year-round.

The primary differences between this option and the status quo are the method for counting the first day of a trip, the provision for layover days equal to trip days during part of the year, and the limitation to 80 net tags for day gillnet vessels. No changes from the status quo in terms of revenues and/or costs are expected with the area closures and trip limits proposed in Option 1. Therefore, the social impacts of the area closures and trip limits in Option 1 should be consistent with those under the status quo. (However, there may be social impacts associated with the status quo scenario, especially when compared to the Amendment 7 baseline. Amendment 13 to the Northeast Multispecies FMP is intended to better assess and characterize these social impacts.)

In general, the above factors are not likely to affect the formation of attitudes towards this alternative or the involvement of interest groups in the development of this alternative. Most of the attitudes towards this alternative reflect negative feelings about the proposed area closures, which remain as they were in 1999. Day gillnet vessels as a group, however, may perceive this alternative to be unfairly directed towards them, as it requires them to reduce their active nets by 50%. This provision is expected to result in a negative impact on revenues for at least some gillnet vessels, although the extent of this impact cannot be assessed quantitatively. The gillnetters that do lose revenues will be forced to seek alternative sources of income. For most, this will mean finding other fisheries and other places to fish. Seeking alternative fisheries,

however, has become increasingly difficult due to restrictions in other fisheries (shrimp, monkfish, dogfish, and small mesh fisheries, for example). For the most significantly affected, this will mean investing substantial money to change gear types or exiting the fishery altogether.

Day gillnetters, however, do not lose some of their flexibility from a layover provision, as it does not apply to them. All other vessels will be required to take layover days during some part of the year. Layover days tend to reduce vessels' flexibility for planning fishing trips, responding to market conditions, and receiving the most money for their product. For owners, captains, and crew on some vessels, this provision could represent a significant alteration to their daily living and work patterns. Some vessels fish continuously for a period of time in order to maximize their profits and then stop fishing when they cannot do so or when the market does not allow for profit maximization. These vessels will be required to alter their practices during times when they would be required to take layover days equal to their trip days.

For some fishing families, layover days might seem to represent a welcome break from fishing activities and an increased opportunity to spend time together at home. Instead of being away from home for most of the month, fishermen may find themselves at home as many days during the month as they are away. This may be viewed as a positive social impact to the extent that it improves fishing family relations and decreases family stress resulting from being away from home. However, the benefits of this provision greatly depend on the ability of fishermen and fishing vessels to adapt to the layover requirement. If fishermen cannot compensate for their lost revenues from the time off during the trips that they do take, during other times of the year, or through other career opportunities, this provision is more likely to increase stress at the family level, as families will be required to seek alternative sources of income.

The proposed requirement to count the first day of a trip as 15 or 24 hours could affect not only the vessels fishing for Gulf of Maine cod, but all groundfish vessels, even those fishing on Georges Bank or in southern New England and Mid-Atlantic waters. For southern vessels, this provision could be particularly constraining, especially because these vessels have already lost their opportunity to fish for many groundfish stocks whose populations have diminished throughout the southern extent of their range. In addition, counting the first day of a trip at either 15 or 24 hours would impact smaller vessels that fish primarily in inshore areas on trips that last less than 24 hours. Many of these vessels traditionally make 8-12 hour trips and are constrained by weather conditions, their vessels' capacity, or both. These vessels may be disproportionately affected by a requirement to count the first day of a trip as 15 or 24 hours. Furthermore, these are the same vessels that are likely to be most affected by inshore or "rolling" area closures. Counting the first day of a trip at 15 or 24 hours does not help to mitigate the negative social impacts of the area closures and may exacerbate them.

In summary, the positive and negative social aspects of this alternative include:

- + It continues the current management strategy with minor modifications and therefore minor social disruption upon implementation.
- Fishermen have testified on several occasions that they do not support the current area closures primarily because of their disproportionate impact on smaller and inshore vessels.
- Layover days can decrease vessels' flexibility and disrupt daily living and working patterns.

- DAS counting for the first day of a trip would affect all vessels, not just those fishing in the Gulf of Maine, and they have a disproportionate impact on smaller vessels that are likely to be most affected by the inshore and “rolling” area closures.

4.3.3.3.2 Gulf of Maine Option 2 (The Proposed Action)

The proposed action extends many of the current management measures into the 2000-2001 fishing year. Area closures include those implemented in Frameworks 26, 27, and 31 as well as an extension of the year-round western Gulf of Maine closure. This option proposes the same trip limit for Gulf of Maine cod as Framework 31 (400 pounds per day plus the interim running clock). In addition, this alternative included either a “backstop” for preventing a TAC overage (additional area closures) or a year-round closure of the northern half of Block 124 (instead of a “backstop”). The Council selected the “backstop” that closes the Cashes Ledge Closed Area for one additional month (November) and Blocks 124 and 125 in January if 50% of the Target TAC for Gulf of Maine cod is landed by July 31.

Under this alternative, the first day of a trip could have been counted as either 15 or 24 hours, or the status quo. The social impacts of counting the first day of a trip differently are discussed in 4.3.3.3.1. Based on the potential distribution of impacts and on the recommendation of the Advisory Panel and the Committee, the Council determined that the costs associated with this provision may outweigh its conservation benefits. Although the Council is not proposing any changes to counting DAS in this framework adjustment, it may consider this action during the development of Amendment 13 to the Multispecies FMP.

The only significant difference between the proposed action and the status quo is the “backstop” to prevent the TAC from being overshot (November and January area closures). The impacts of area closures are generally discussed in Section 4.3.3.2. Aside from the impacts of the “backstop” closures, no changes from the status quo in terms of revenues and/or costs are expected with the area closures and trip limits contained in the proposed action. Therefore, the social impacts of the area closures and trip limits proposed in Framework 33 should be consistent with those under the status quo. (However, there may be social impacts associated with the status quo scenario, especially when compared to the Amendment 7 baseline. Amendment 13 to the Northeast Multispecies FMP is intended to better assess and characterize these social impacts.)

As previously mentioned, additional impacts can be expected from the proposed “backstop” area closures. In general, “backstops” are not widely supported as management tools to achieve the conservation objectives of a suite of management measures. “Backstops” often make business and trip planning more difficult for the fishing fleet. Many vessels try to plan their DAS usage and fishing strategies in advance to maximize their efficiency and obtain better prices for their products. Not knowing what regulations they will be facing throughout the fishing year minimizes their ability to respond to the regulations and modify their fishing and business practices accordingly.

The Council considered the costs and benefits of both “backstop” alternatives before selecting the proposed “backstop” to both maximize the effectiveness of the measure and minimize its potential negative impacts. Specifically, the Council considered that additional closed areas are likely to

result in disproportional effects for the boats that fish in the areas and for the communities adjacent to the areas. The “backstop” alternative to close Cashes Ledge in November and Blocks 124 and 125 in January, which the Council selected, is likely to produce fewer social impacts than the option to close the northern half of Block 124 year-round for several reasons.

First, the proposed “backstop” alternative is projected to result in a loss of total fleet revenues of \$0.1-\$0.6 million, while the less-favored “backstop” alternative is projected to decrease fleet revenues by \$1.4-\$5.4 million. Since economic impacts are quite often related to social impacts, one can assume that the social impacts of the proposed “backstop” will also be less severe than the alternative to close the northern half of Block 124 year-round. Second, Cashes Ledge is located further offshore than the other proposed closures. While vessels that fish on Cashes will certainly be affected, areas surrounding Cashes would continue to remain open for fishing. The Cashes alternative, therefore, does not directly impact some communities without affecting others. Furthermore, the vessels that access Cashes Ledge are larger vessels capable of accessing areas further offshore and therefore may be better suited to adapt to such a closure. Third, because both inshore and offshore areas are proposed for closure, the preferred “backstop” is likely to more evenly distribute any negative social impacts that result from closing the areas. Finally, the closure of the northern half of Block 124 significantly affects communities like Scituate, Plymouth, and Provincetown, whose smaller vessels access this area throughout the year. Year-round closure of this area would disproportionately affect these vessels without leaving them with many viable alternatives for adapting to the regulations.

In summary, the positive and negative social aspects of this alternative include:

- + It continues the current management strategy with minor modifications and therefore minor social disruption upon implementation.
- Fishermen have testified on several occasions that they do not support the current area closures primarily because of their disproportionate impact on smaller and inshore vessels.
- /+ While “backstops” generally have negative social aspects associated with them, the Council selected the “backstop” alternative that is likely to produce the fewest social impacts (versus the status quo).

4.3.3.3.3 Gulf of Maine Option 3

Gulf of Maine Option 3 proposes status quo on DAS and DAS counting, a new set of area closures, and a one-year extension of the western Gulf of Maine closed area. In addition, this option proposes the same trip limit for Gulf of Maine cod with a two-day layover requirement or a running clock as in Framework 31 (interim running clock). Option 3 also includes a proposal to increase the cod minimum size to 21 inches.

The major differences between this option and the status quo are the proposed area closures and the proposed increase in the cod minimum size. The social impacts of area closures are generally discussed in Section 4.3.3.2. The economic impacts of the closures proposed in Option 3, however, are projected to be positive when compared to the status quo, as Option 3 proposes “rolling” closures for only one month, and the rest of the proposed closures are distributed slightly more offshore and throughout the Gulf of Maine. The area closures proposed in Option 3 are also intended to provide for additional fishing opportunities, especially for the inshore fleet. The

economic analysis indicates that Option 3 is likely to result in increased fleet revenues from all species. To the extent that the proposed area closures do allow opportunities for the inshore fleet, the social impacts resulting from loss of income could be reduced. In addition, if more inshore areas are open, the social impacts of traveling farther from home to fish or traveling to new, unfamiliar fishing grounds are also reduced.

The potential social impacts of layover requirements in terms of flexibility are discussed in Section 4.3.3.3.1. It is difficult to predict the potential social impacts of the proposal to increase the minimum size of cod to 21 inches. However, this proposed increase is not accompanied by a proposal to increase mesh size, so it is probably perceived as a measure that is likely to increase cod discards. Unfortunately, existing data do not support the analyses necessary to confirm or deny this perception. Fishermen do not like to discard their catch, and discarding alone has the potential to produce negative social impacts. These impacts are briefly discussed in Section 4.3.3.1 with respect to trip limits. To the extent that a cod size increase generates additional regulatory discards, this provision is likely to result in negative social impacts. It is important to note that this size increase would apply to cod throughout its range, not just to Gulf of Maine cod. Fishermen in other areas may oppose this provision not only because they feel that it could generate discards, but also because they feel that they are being forced to make sacrifices for a problem they didn't create. While Georges Bank cod is also in need of management attention (and is addressed in this framework adjustment), vessels in fishing communities in Georges Bank may not be anticipating an increase in the minimum size for cod, nor may they be supportive of it.

In summary, the positive and negative social aspects of this alternative include:

- + The proposed area closures appear to distribute the negative impacts of area closures (dislocation, inability to access fishing grounds) more evenly throughout the Gulf of Maine and throughout inshore and offshore areas. The social impacts of these closures should therefore be distributed more evenly.
- It is difficult to predict the social impacts of the proposed cod size increase, but to the extent that this provision increases discarding, the social impacts will be negative. Impacts of this provision could be positive for hook and gillnet vessels if it offsets potential closures. Also, this provision was suggested to the Council by hook and gillnet fishermen and appears to have support from these sectors of the fishery.
- The social impacts of the proposed cod size increase would extend beyond the Gulf of Maine and throughout the range of the species, affecting communities throughout southern New England and some in the Mid-Atlantic.

4.3.3.3.4 Gulf of Maine Option 4

Gulf of Maine Option 4 proposes a call-in maximum 25 DAS program for vessels fishing in a restricted inshore area from February-May. It also proposes a new set of year-round area closures and seasonal closures based on one-month “rolling” closures from Framework 25. Party/charter vessels would be prohibited from fishing in the closed areas from February-May. This option proposes a 400-pound trip limit for Gulf of Maine cod with running clock and a two-day layover requirement. Usage of the running clock and the layover requirement would be prohibited from February-May.

This option differs from the status quo in many respects. First, this option would require vessels to declare into a special category to fish in the Western Gulf of Maine Restricted Gear Area. The specifications of this program are intended to reduce overall fishing power during the spring months and to provide equitable access to alternative species and fishing grounds. The enrollment program and consequent limitation to 25 DAS would affect the vessels that land the majority of fish and use most of their DAS during the spring time. This could significantly impact the daily business and work patterns of people fishing on or working with these vessels. They would be required to adapt to reduced fishing during their most productive months and seek alternative sources of income during the time of year when they are not used to fishing as much. The interest groups that developed this proposal maintain, however, that the impact of this provision is much less severe than the impacts of the Framework 25, 26, and 27 area closures.

One important aspect of this proposal is the prohibition for party/charter vessels to fish in the closed area from February-May. This prohibition is likely to produce significant social impacts that extend beyond the impacts on the party/charter vessels and their crew. This prohibition substantially decreases the opportunity for recreational fishermen to access fishery resources and participate in fishing activities. This loss, although difficult to quantify, must be considered. Most people who fish on party/charter vessels do so because they do not own a boat of their own. Many people develop positive feelings about fishery resources either simply from the existence of these resources or the fact that they can access them to derive recreational enjoyment. The social impacts of this provision, therefore, affect not only vessels, their crew, and their dependent shoreside facilities, but also an non-quantifiable component of the general population that enjoys fishing recreationally.

Interest group activity is an important variable to discuss in relation to this alternative. Gulf of Maine Option 4 was developed and submitted to the Council by a sector of the fishing industry. Although it has lost much of its association with the group, Option 4 was developed from the Gulf of Maine Fishermen's Alliance, Inc., a recently formed and very active industry association interested in maintaining viability for the Gulf of Maine fishing fleet. However, not all of the industry supports this proposal (the Gulf of Maine Fishermen's Alliance is comprised primarily of small- to medium-sized vessels, and Option 4 is not widely supported by larger vessels). In general, though, this option has more industry support than the other options under consideration. Not only could this increase compliance with the proposed measures (depending on the magnitude and extent of industry support), but it could also improve fishermen's general sentiments about fishing as an occupation and a way of life.

In summary, the positive and negative social aspects of this alternative include:

- + The proposed area closures appear to distribute the negative impacts of area closures (dislocation, inability to access fishing grounds) more evenly throughout the Gulf of Maine and throughout inshore and offshore areas. The social impacts of these closures should therefore be distributed more evenly.
- The social impacts of the 25 DAS enrollment program are likely to fall mostly on vessels that land the majority of fish and use most of their DAS during the spring time for the purpose of maximizing their business opportunities.
- + This option is supported by a segment of the fishing industry that represents smaller and

- medium-sized vessels, which are most likely to be affected by the measures, particularly the inshore area closures. Support for management measures increases positive attitudes about fisheries management as well as the potential for compliance with the regulations.
- The social impacts of the party/charter restriction affect not only vessels, their crew, and their dependent shoreside facilities, but also a component of the public that enjoys fishing recreationally.

4.3.3.3.5 Qualitative Comparison of Gulf of Maine Options

Table 94 represents a qualitative, comparative analysis of the four Gulf of Maine alternatives under consideration in this framework adjustment. The table compares the four alternatives to each other and “ranks” them based on potential changes to the assessment variables identified and discussed in Section 4.3.2.2 . In the table, a “+” denotes that the change is expected to be positive, while a “-” indicates that the change is likely to be negative. A “0” indicates that the change is not likely to differ significantly from the status quo. Additional comments are provided to better characterize the differences between the four alternatives under consideration. Where possible, Table 94 identifies the alternative that is likely to produce the most positive or most negative effect on the assessment variable. This is a difficult prediction, as much of the impact will result from changes in fishing behavior and/or the ability of fishermen and their communities to adapt to the management measures proposed in the framework adjustment.

It is important to note that the predictions represented in Table 94 are solely with respect to changes in the social conditions of the fishery and/or the affected fishing communities and not in the context of the biological (and, to a degree, economic) impacts of the management alternatives. If an option is not expected to meet the biological objectives of the management program, then its social consequences extend beyond those described in Table 94 and resemble the long-term consequences of not rebuilding fishery resources to sustainable levels.

In addition, please note that the management measures proposed in Framework 33 are represented by Gulf of Maine Option 2 in Table 94.

	Attitudes and Interest Group Activity	Changes in Occupational Opportunities	Industrial Diversification and Community Infrastructure	Disruption in Daily Living	Alteration in Family Structure
OPTION 1	- MOST NEGATIVE negative perception b/c too much like SQ; not likely to increase interest group activity; less favorable with day gillnet boats	- not likely to differ from the SQ except for signif. decrease in opportunities for day gillnet boats - neg. impact of counting the first day of trip	0 not likely to differ from the SQ if day gillnet boats can adapt and/or diversify	-MOST NEGATIVE not likely to differ from the SQ except for part-time layover provisions and DAS counting which disrupt daily business and work patterns	0 not likely to differ from the SQ; layover provisions could have negative and/or positive impact
OPTION 2: THE PROPOSED ACTION	- negative perception b/c too much like SQ; not likely to increase interest group activity	- not likely to differ from the SQ except for effects of "backstop" closures	0 not likely to differ from the SQ, but depends on selection of "backstop" closures	0 not likely to differ from the SQ	0 not likely to differ from the SQ, but true impact depends on "backstop" closures
OPTION 3	+ more positive b/c it's diff. from the SQ;	+ MOST POSITIVE new closures provide additional opportunities for nearshore vessels	+ MOST POSITIVE new closures provide additional opportunities and could allow for more consistent supply of product to affected communities	- layover provisions disrupt daily business and work patterns + area closures minimize disruption caused by SQ closures	+ increased opportunity in fishery minimizes need for alternative income; layover provisions could have negative and/or positive impact (more likely negative due to financial concerns)
OPTION 4	+ MOST POSITIVE it's different from the SQ and b/c it was developed by an industry group	+ new closures provide additional opportunities for nearshore vessels - fewer opportunities for vessels that fish mostly in spring and for p/c vessels	+ new closures provide additional opportunities and could allow for more consistent supply of product to impacted communities - p/c prohibition affects shoreside support services (bait, ice, etc.)	- 25 DAS program impacts vessels that fish most in spring; p/c provision impacts public + area closures minimize disruption caused by SQ closures	+ increased opportunity in fishery minimizes need for alternative income; layover provisions could have negative and/or positive impact - potential to negatively impact vessels that fish most in spring

Table 94 Summary of Potential Changes to Assessment Variables and Qualitative Comparison and Ranking of Gulf of Maine Alternatives Under Consideration

*"SQ" represents "status quo"; "b/c" represents "because"; "p/c" represents "party/charter."

4.3.3.4 Georges Bank Options

All options under consideration in this framework adjustment include a Georges Bank cod trip limit of 2,000 pounds per day with a 20,000-pound maximum possession limit and no backstop mechanism. During the development of Framework 33, the Council considered five alternatives for area closures in addition to the Georges Bank cod trip limit. The social impacts of trip limits are briefly discussed in Section 4.3.3.1, and the social impacts of area closures are discussed in Section 4.3.3.2 of this document. At the final Framework 33 meeting, the Council selected Georges Bank Option 5 as the proposed action.

Georges Bank Closed Area Option 1 proposes a series of one-month closures from April – September based on the block/month combinations with the highest landings of cod. Option 1 is projected to result in a revenue loss between \$1.5-\$16.2 million (depending on assumptions about effort displacement, and this estimate assumes that scallop vessels will be prohibited from fishing in the closed areas). Of the five alternatives under consideration, Georges Bank Option 1 ranks third in terms of potential loss of revenue. The majority of revenue loss will be experienced by vessels that have accessed the proposed closed areas to fish. The April and July-September closures are located further offshore and will likely affect vessels that fish from ports like New Bedford. The proximity of these areas to the current Georges Bank closed areas suggests that a substantial proportion of the lost revenues may be from lost opportunities to fish for scallops. The April and May closures, on the other hand, are proposed to be adjacent to the eastern side of Cape Cod and will affect communities located along the outer Cape. Smaller vessels in ports like Chatham would lose their opportunity to fish during May and June, historically productive months.

Georges Bank Closed Area Option 2 proposes to close three offshore blocks year-round and one inshore block during May and June. Of the five alternatives under consideration, Option 2 ranks first in terms of potential revenue loss with a projected loss between \$13.9-\$38.9 million (if scallop vessels were prohibited from fishing in the area). Similar to the economic impacts, this option is more likely to produce negative social impacts than Option 1 because of the year-round nature of some of the closures. The vessels that fish in the area proposed for closure will be required to completely alter their business patterns and work routine. This includes finding new or different areas in which to fish and perhaps seeking alternative fisheries in which to participate. In addition, while the proposed year-round area closures are located offshore, they are not that far offshore and probably comprise a significant portion of the area in which vessels from the outer Cape (Chatham) fish. In addition, the area closures extend to the coast for two months.

While Georges Bank Closed Area Option 3 is not projected to produce the greatest economic impact, it may produce the greatest social impacts because of the nature and extent of the proposed closures. Option 3 closes an area that extends from the coastline of the outer Cape to Closed Area II on a year-round basis. This could preclude all fishing opportunities for small vessels located in Chatham and in other ports along the outer Cape. Some of these vessels may not have the ability to access open areas, especially during the winter months. This option distributes the potential negative impacts the *least* proportionally of all the closed area options under consideration.

Of the five alternatives under consideration, Georges Bank Closed Area Option 4 is projected to have the second lowest negative economic impact. This alternative includes a series of closures similar to Option 1. The proposed closures, however, are more evenly distributed between the inshore and the offshore and between the potentially affected fishing communities. The coast of the outer Cape is only closed for one month (June). The other proposed closures are located offshore so that all vessels have the opportunity to access fishing grounds on either side of the closed area.

The proposed action, Georges Bank Closure Option 5, is projected to result in the least economic impact (loss of revenues) of all the options under consideration. It proposes a one-month closure of a substantial portion of the fishing grounds located between the outer Cape, Closed Area I, and Closed Area II. While opportunities may be lost for many vessels during the month of May, the short-term nature of the proposed closure may allow vessels to compensate for their lost revenues during times when the areas are open or in other fisheries. A unique characteristic of Option 5 is that it was developed and proposed by a sector of the fishing industry. It is widely supported by the Georges Bank groundfish industry; fishermen feel strongly that protection of cod in the area during the month of May will benefit the resource more than a series of smaller closures throughout the spring and summer.

In summary, Table 95 compares the alternatives and characterizes the differences in the potential impacts of the various closure scenarios. Table 95 ranks the alternatives according to the degree of their expected economic and social impacts (the options are ranked from highest to lowest with “1” meaning that the option is likely to produce the greatest impact).

	Negative Economic Impact	Negative Social Impact	Possible Fleet Dislocation?	Potential Impact on Community Infrastructure?	Possible Industry Support?
OPTION 1	3	3	3 SOME, during May and June; also possible dislocation for scallop vessels	3 Loss of product during summer months	3 More than 3 and less than 5
OPTION 2	1	2	2 YES, for vessels that fish in area proposed for year-round closure	2 Potential loss of product for ports on outer Cape	4 More than 3 and less than 1
OPTION 3	2	1 b/c of year-round closures	1 YES, for boats in Chatham and the outer Cape, especially small boats	1 YES, for ports along the outer Cape	5 The least
OPTION 4	4	4	4 Not likely, area closures are widely distributed; possible dislocation for scallop vessels	5 Not likely	2 More than all except for 5
OPTION 5*	5	5	5 Not likely, area closures are short-term	4 May only	1 YES, the most

Table 95 Comparison of Georges Bank Closed Area Alternatives

***Option 5 represents the proposed action.**

The options are ranked according to their likely impact with “1” signifying the most impact and “5” signifying the least impact.

4.3.3.5 Other Measures

In addition to the options to address Gulf of Maine and Georges Bank cod, Framework 33 proposes the following:

- Requirement for party/charter vessels to obtain an exemption certificate to fish in any or all of the Gulf of Maine closed areas; enrollment is for a minimum of three months, and vessels that enroll are prohibited from using any DAS while in possession of the certificate.
- Haddock trip limit of 3,000 pounds per day with a 30,000-pound maximum possession limit, including the authority for the Regional Administrator to adjust the trip limit to ensure that 75% of the TAC is landed
- Modification of the Large Mesh Permit Category to change the minimum mesh size from eight to seven-inches, to adjust the increase in DAS from 36% to 25%, and to allow vessels to exit the category after one month.

The social impacts of the party/charter enrollment program are likely to be minimal, primarily because this provision does not restrict or limit access to the Gulf of Maine closed areas for party/charter vessels. Those vessels that are predominantly party/charter vessels (more than 90% of their fishing activity, for example) and that traditionally fish in the Gulf of Maine closed areas are not likely to be affected by the requirement to obtain an exemption certificate. Only those vessels that fish both commercially and in the party/charter sector may be required to sacrifice revenues from one or the other for a three-month period. The economic analysis indicates that revenues on very few vessels would be negatively impacted by this provision. The social impacts of this provision, therefore, are likely to be minimal.

The Council is proposing adjustments to the haddock trip limit to reduce the potential for discards during the May-September period. The initial trip limit is therefore proposed to be higher than it was during the last fishing year. The social impacts of trip limits are generally discussed in 4.3.3.1. This proposed adjustment to the trip limit is not expected to have a measurable impact on the fishing mortality rate for haddock and is, effectively, “conservation neutral.” In turn, to the extent that the proposed trip limit adjustment minimizes and/or reduces regulatory discarding, positive social impacts are predicted to result.

Modifying the Large Mesh Permit Category is intended to provide vessels with more incentive to elect into this category and use a larger mesh to fish for multispecies. The vessels that elect to enroll in the program weigh the costs and benefits of purchasing a new groundfish net and receiving 25% more DAS. It is assumed that the vessels that elect into this category do so because, in the long run, the economic benefits of 25% more DAS outweigh the costs of purchasing a new net. The magnitude and extent of the social impacts resulting from the proposed modifications will depend on the number of vessels that enroll in the Large Mesh Permit Category during the 2000-2001 fishing year. This may prove to be a viable option for many vessels that are facing decreases in revenues from the other Framework 33 management measures. If a significant number of vessels choose to enroll in this category, this provision could serve to mitigate many of the negative social impacts resulting from inshore area closures and low trip limits for Gulf of Maine cod. In addition, larger mesh will increase escapement for juvenile groundfish and could ultimately speed the recovery of the Gulf of Maine cod and other groundfish stocks (depending on how many vessels use the larger mesh). The long-term social and economic impacts of a rebuilt commercial resource are positive, and as the conservation objectives of the plan are reached more quickly, short-term negative social and economic impacts are minimized.

4.3.4 References

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