

11.0 Regulatory Impact Review and Initial Regulatory Flexibility Act Analysis

This fishery management plan has been prepared primarily in response to the requirements of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). This integrated Red Crab FMP document contains all elements of the Fishery Management Plan and the Environmental Impact Statement (EIS) (which is required by NEPA), including the Regulatory Impact Review (RIR) and Initial Regulatory Flexibility Act Analysis (IRFAA). This chapter addresses the components of the RIR and the IRFAA. Some of the components of the RIR are discussed in the body of the FMP and are not repeated here. Section and page references are provided. In other cases, the RIR element is not found elsewhere and is addressed fully in this chapter. The table of contents for the RIR is provided to aid reviewers in referencing the appropriate corresponding sections of the FMP.

RIR/IRFAA Section	FMP Section	Page
Introduction	11.1.....	365
Problems and Objectives	11.2.....	365
Framework for Analysis	11.3.....	366
Data	11.4.....	367
Data Used for the Analysis and Limitations	11.4.1.....	367
Landings Data	11.4.2.....	367
Ex-Vessel Price Data	11.4.3.....	367
Cost and Revenue Data	11.4.4.....	367
Consumer Demand and Consumer Surplus	11.4.5.....	368
Limitations and Simplifying Assumptions	11.4.6.....	368
Description of Economic Characteristics	11.5.....	368
Harvesting Sector	11.5.1.....	368
Processing Sector	11.5.2.....	369
Wholesaling and Retail Sector	11.5.3.....	370
International Sector	11.5.4.....	370
Fishery-Dependent Service Industries	11.5.5.....	370
Impacts of the Alternatives	11.6.....	370
Overview of Economic Impacts	11.6.1.....	370
Short Term Economic Impacts	11.6.2.....	371
Long Term Economic Impacts	11.6.3.....	372
Impacts of Framework Adjustment Measures	11.6.4.....	379
Additional Issues	11.7.....	380
Summary of Economic Impacts	11.8.....	380
Review of Impacts Relative to RFA	11.9.....	381
Introduction and Methods	11.9.1.....	381
Control Date Discussion	11.9.2.....	382
Description of the Alternatives	11.9.3.....	383
Analyses of Impacts of Alternatives	11.9.4.....	383
Economic Impacts on Vessels	11.9.5.....	384

Economic Impacts on Dealers	11.9.6.....	387
Economic Impacts on Processors	11.9.7.....	388
Description of Permit/Reporting Requirements	11.9.8.....	388
Economic Impact of Permits and Reporting	11.9.9.....	388
Competitive Effects Analysis	11.9.10.....	389
Identification of Overlapping Regulations	11.9.11.....	389

11.1 Introduction

A Regulatory Impact Review (RIR) is required for all regulatory actions which either implement a new fishery management plan (FMP) or significantly amend an existing plan. An RIR is required by NMFS for all regulatory actions which are part of the “public interest.” The Regional Fishery Management Council (in this case, the New England Council) prepares the RIR with assistance from NMFS when proposing a new plan or an amendment to an existing plan. The RIR is a required component of the process of preparing and reviewing FMPs or amendments and provides a comprehensive review of the economic impacts associated with proposed regulatory actions. The RIR addresses many concerns posed by the regulatory philosophy and principles of Executive Order (E.O.) 12866. The RIR serves as the basis for assessing whether or not any proposed regulation is a “significant regulatory action” under criteria specified by E.O. 12866.

The RIR must provide the following information: (1) a comprehensive review of the level and incidence of economic impacts associated with a proposed regulatory action or actions; (2) a review of the problems and policy objectives prompting the regulatory proposals; and (3) an evaluation of the major alternatives which could be used to meet these objectives. In addition, an RIR must ensure that the regulatory agency systematically and comprehensively considers all available alternatives such that the public welfare can be enhanced in the most efficient and cost effective manner.

Under the Regulatory Flexibility Act (RFA) of 1980 as amended by Public Law 104-121, new FMPs or amendments also require an assessment of whether or not proposed regulations will have a significant economic impact on a substantial number of small business entities. The primary purposes of the RFA are to relieve small businesses, small organizations, and small government agencies from burdensome regulations and record-keeping requirements, to the extent possible.

This section of the Red Crab FMP provides an assessment and discussion of the potential economic impacts, as required of an RIR and the RFA, of various proposed management and regulatory actions consistent with the problems that must be resolved and the goals and objectives outlined, respectively, in Sections 2.4 and 3.1 of this document.

11.2 Problems and Objectives

The biological aspects and habitat characteristics related to the red crab fishery are described in Sections 8.1 and 8.2 of this FMP; the history of exploitation and the social and economic characteristics of the fishery are presented in Section 8.3. The problems which should be resolved or addressed by the proposed management action are as follows (Section 2.0): (1) overfishing must be prevented; (2) overcapitalization should be avoided; (3) the FMP must be developed in the absence of a current stock assessment; (4) better data on the resource and its fishery are needed; (5) there must be consideration for vessels to land incidental catch levels of red crab and minimize potential discards in other fisheries; (6) identify the appropriate level of fishing power for the fishery; (7) a

consistent supply of red crab product should be maintained all year long; (8) comply with marine mammal protection requirements; (9) the management unit and area of jurisdiction for the management program need to be identified; and (10) the incidence of handling mortality should be determined.

The overall goals of the proposed FMP are found in Section 3.1. To achieve the overall goals, the following management objectives have been adopted: (1) achieve OY for the U.S. fishing industry; (2) prevent overfishing of red crab; (3) develop a definition of overfishing; (4) develop biological, economic and social measures of success for the red crab fishery; (5) develop a controlled access system to keep fishing capacity matched to the available resource; (6) adopt measures that constrain fishing mortality; (7) promote research and improve the collection of data; (8) minimize adverse impacts on other fisheries; and (9) maintain a twelve month fishery.

11.3 Framework for Analysis

This section provides an overview and description of the procedures used to assess the potential economic impacts of allowing the fishery to continue operating with no regulation (i.e., the status quo); regulating the fishery using the preferred management alternative (i.e., implementation of a controlled access program for the directed red crab fishery, a target TAC, days-at-sea limits, trip limits, and trap limits); and implementing each of the non-preferred alternative regulatory strategies (including the continuation of the emergency action as a non-preferred alternative) instead of the preferred alternative.

Under different circumstances and data availability, an analysis of economic impacts would include the following: (1) a price model for estimating prices, revenues, and consumer surplus; (2) information on costs to estimate net returns and an approximation of producer surplus; and (3) an expectations framework for calculating the expected value of the various regulatory alternatives given that the probabilities of the alternatives to achieve the plans objectives are different. Estimation of net national benefits requires estimation of consumer and producer surpluses. Consumer surplus represents the maximum amount consumers are willing to pay to purchase a good or service less what they actually must pay. Producer surplus equals the difference between total revenue received by the producer and the resource costs of providing a good or service (e.g., fish).

The economic impacts would be assessed in terms of changes in landings, prices, revenues, and net returns for each of the regulatory options and the status quo. Net returns would be estimated by deducting from the estimated ex-vessel revenues total operating costs, all fixed costs, and repair and maintenance costs. The impacts on landings, revenues, operating and total costs, and net returns would also be assessed. However, in the absence of projected landings for each of the alternatives and the status quo, prices, economic impacts and net benefits could not be quantitatively assessed.

11.4 Data

11.4.1 Data Used for the Analysis and Limitations

This section describes the data sources available for management of the red crab fishery and the limitations for use in economic analyses.

11.4.2 Landings Data

Several basic types of data were available: (1) data from the dealer weight-outs purchase reports; (2) data from the vessel logbooks (VTRs); and (3) a voluntary survey from the Council's industry advisors, representing the majority of the current directed red crab fleet. Total reported landings in 2000 (2001 preliminary) logbooks for Maine through North Carolina equaled 654,270 (1,933,748) pounds; landings from the weigh-out data for the same region and period equaled 6,900,480 (7,264,507) pounds -- a difference between data sources of over 6 and 5 million pounds in each of the two most recent years. The voluntary survey reported the majority of the economic and social data available for the red crab fleet.

11.4.3 Ex-Vessel Price Data

The ex-vessel price of red crab, according to the dealer weighout database, which is the only available source of revenue information, ranged from \$.55 to \$.94 per pound for individual vessels in 2000. This range in ex-vessel price among vessels is partly due to their different methods of processing and marketing, whether landed whole or with some degree of processing having taken place at sea. The ex-vessel price of red crab by month ranged from \$.63 to \$.81. Average prices for each month were \$.69, \$.64, \$.71, \$.63, \$.63, \$.66, \$.67, \$.73, \$.74, \$.80, \$.81, \$.76 from January to December 2000, respectively. The ex-vessel price by port (\$.55 to \$.92) was very similar to the price received by vessels, reinforcing the perception that vessels land predominately in only one port.

11.4.4 Cost and Revenue Data

In most other fisheries, vessels land other species along with their target species (joint in inputs) or fish for other species during other parts of the year independent of their target species (nonjoint in outputs). In the red crab directed fishery, these complications for assessing fixed costs are minimal. Also, from the voluntary survey, we have estimates of fixed and variable costs as well as an estimate of the gross revenue per day needed to break even. For the non-directed fleet (those who would be regulated under the incidental catch restriction), we have no cost information.

The reported gross revenue per day required to break even ranges from \$4,000 to \$5,000. Based on the prices listed above, this would require minimum landings ranging from 2,200 pounds to 4,700 pounds per day. An average trip lasting 8 days means vessels would have to land between 17,600 pounds and 37,600 pounds per trip to break even. The preferred alternative which includes a trip limit of 75,000 pounds (or the highest recorded landing prior to the control date) would enable red crab vessels to break

even, that is, cover their variable costs. The average variable cost/trip is approximately \$15,000. Vessels must cover their variable costs in the short run in order to continue fishing. In the long term, vessels must cover their fixed costs to remain profitable. It appears from this information that red crab vessels would be able to allocate some of their trip revenue to cover their fixed costs. See Appendix B for a complete discussion of the revenues and costs of red crab vessels.

11.4.5 Consumer Demand and Consumer Surplus

Consumer surplus or the net benefit a consumer receives in excess of actual expenditure requires an analysis of final demand. In order to estimate final consumer demand, however, it is necessary to have data on quantities and retail prices for at-home and away-from-home consumption. It also is desired to have information on consumer expenditures on fish. None of the desired data are available, and thus, it is not possible to accurately assess consumer surplus at the final consumer level.

11.4.6 Limitations and Simplifying Assumptions

Although the analysis of the potential economic impacts was largely qualitative, it is still necessary to point out the numerous problems with the data. The first problem is incomplete information on landings, revenue and ex-vessel prices. Second, although not a big problem, red crab are sometimes caught with other species (lobster and hagfish, for example), and data necessary for adequately assessing the multi-species nature of the fishery were not available.

11.5 Description of the Economic Characteristics of the Fishery

11.5.1 Harvesting Sector

Harvesters' economic dependence upon commercial fishing and red crab fishing is presented in Appendix B. Most respondents report 100% dependence on the red crab fishery for their annual income. Some, but not all, of the red crab directed fleet hold permits in other fisheries. It would be expected that in response to financial losses, vessel operators would redirect fishing activities to other fisheries; the other fisheries or species that might be targeted are unknown.

Of the 17 vessels that had LOAs to fish for red crab in 2001 under the emergency regulations, 14 had permits to fish in other fisheries. Nine of the 14 held a lobster permit (some of those held a lobster permit in more than one category). Nine held at least one multispecies permit and nine held some type of scallop permit. Nine also held an ocean quahog permit. Eight held a spiny dogfish permit and eight had a surf clam permit. Seven held a bluefish permit and seven held some type of squid/mackerel or butterfish permit. Seven also held an Atlantic herring permit. Five vessels held a monkfish permit and five held a tilefish permit. Three each held a black sea bass and summer flounder permit. Only two held a scup permit. The average number of permits held was between six and seven.

Of those 17 vessels that had LOAs to fish for red crab in 2001, five would be

regulated entities under the preferred alternative. Of the 12 remaining vessels, 10 had permits to fish in other fisheries. The number of vessels with permits to fish under other fishery management plans is shown in Table 30. The average number of other fisheries in which they could fish was between seven and eight. Of the expected five vessels who would qualify under the preferred alternative, four vessels have an average of four permits each to fish in other fisheries. The vessels are expected to be impacted by the preferred alternative have a greater number of non-red crab alternatives to continue fishing in some capacity in other fisheries than do those expected to qualify for the controlled access program.

Northeast Region Permit Status	Number of Vessels	Percent of Permitted Vessels
Scallop	8	67%
Lobster	6	50%
Dogfish	6	50%
Squid, Mackerel, Butterfish	6	50%
Surf Clam	6	50%
Bluefish	6	50%
Herring	6	50%
Ocean Quahog	6	50%
Tilefish	5	42%
Multispecies	5	42%
Monkfish	4	33%
Black Sea Bass	3	25%
Summer Flounder	3	25%
Scup	2	17%

Table 30: Commercial permits held by the impacted vessels, based on LOAs in 2001.

11.5.2 Processing Sector

From Appendix B, we can see how dependent red crab processors are on red crab. They all process many on other species in addition to red crab. On average, red crab accounts for 11.5% of their total fishery-related processing operations, with a maximum of 25% of total processing operations. The number of employees currently employed by the processors varies significantly, from 5 to 1000 with an average of 300 employees per processor. The majority of the employees are seasonal in nature, with an average of 147 year-round employees per processor. Most processing employees work on other fishery-related products in addition to red crab. For a description of the baseline economic characteristics of the red crab fishery, particularly the processing sector, please see Appendix B of the FMP.

11.5.3 Wholesaling and Retail Sector

The people and businesses that sell red crab product at the wholesale or retail level are an important component of the fishing industry and of fishing communities. These people and businesses may also be affected by regulations or when conditions change in the red crab fishery. In the wholesaling and retail sector, the majority of business revenue is derived from commercial fishing-related products (averaging 90%), though only a small proportion of this business revenue is derived from the sale of red crab products. The percentage of their business revenue that comes from the sale of red crab ranges from less than 1% to 33% and averages slightly more than 25%. The number of employees retained by the respondent (to the survey) red crab wholesalers and retailers ranges from 2 to 150 and averages 33 per business operation. For a description of the baseline economic characteristics of the red crab fishery, particularly as they relate to business and markets, please see Appendix B of the FMP.

11.5.4 International Sector

A large portion of the live red crab landed in New England is sold to U.S. dealers and shipped to Canada for processing. Respondents to the survey indicated that most use only a single processor. Three respondents reported that the processor they use is located in their community, one primarily uses one out of their community and three report that the processors are not in their community. Of the processors not located in the respondents' communities, these processors are reported to be located in Portland, Maine; New Brunswick, Canada; and Prince Edward Island, Canada. Most respondents indicated that they choose to sell their red crab to a particular processor out of loyalty to that processor. For a description of the baseline economic characteristics of the red crab fishery, particularly as they relate to international trade, please see Appendix B of the FMP. There were no data on red crab imports or exports available from the U.S. Bureau of the Census.

11.5.5 Fishery-Dependent Service Industries

For a description of the baseline economic characteristics of the red crab fishery, particularly fishery-dependent service industries, please see Appendix B of the FMP.

11.6 Impacts of the Status Quo, Preferred Alternative, and the Non-Preferred Alternatives

11.6.1 Overview of Economic Impacts

In this section, a summary of the potential impacts of the various regulatory options is presented. Impacts are summarized, where possible, in terms of landings, ex-vessel revenues, operating costs, fixed costs, employment, distributive effects, consumer surplus, producer surplus, and net benefits. We can attempt to determine the direction of change in net benefits from the baseline levels, but it is difficult to determine the comparable net benefits of all alternatives. An attempt was made in Table 21 to outline the economic principles that should be considered when making comparisons between the alternatives. The degree of uncertainty in the direction of change from the baselines

becomes clear. This section will summarize the information that was presented in detail in Section 5.4.

There are some comments that apply to all alternatives. All management alternatives (except “no action”) include some level of incidental catch limits. While they may have economic impacts for those vessels which are potentially disqualified from the fishery, the impacts would be felt equally across all alternatives. All management alternatives (except “no action”) include some degree of gear requirements and/or restrictions to, at a minimum, deal with marine mammal requirements, gear markings, and to ensure that the directed fishery is regulated as trap only. Any economic impacts from this measure would be felt equally among all alternatives. With the exception of the two baselines, all management alternatives include a provision for a controlled access system, consistent with an objective of the FMP. Although there are economic impacts from this measure, this measure would not be the cause of differing distributive impacts between the alternatives. All management alternatives (except “no action”) include reporting requirements to ensure that information is collected that is necessary for the continued management of the resource. There would be additional costs due to enforcement (which may include observers) and reporting but these appear to be non-controversial and would impact all alternatives equally (except “no action”).

While the alternatives differ from each other in their combinations of management measures, many have the potential to result in the development of a derby-type fishery. Effort control measures such as trip limits, days-at-sea, trap limits, and individual vessel quotas would tend to spread out the catch over time and make the fishery less like a derby-type fishery. These effort control measures differ in the efficiency and flexibility with which vessels can operate.

An issue with economic significance is the disproportionate effects, by vessel size, for every alternative. A second significant issue is the share of the catch to be allocated among vessels with a history in the fishery and recent or new entrants. This is related to the interpretation of the control date of March 1, 2000 in qualifying recent or new entrants.

When compared to the no action alternative, all of these alternatives have a positive economic effect on the level of harvest. Since taking no action would inevitably drive the stock level down in the long term, any action at all would be an improvement over what the harvest level would become without any management.

11.6.2 Short Term Economic Impacts on Directed Red Crab Vessels and Incidental Vessels

The economic impacts are summarized relative to the status quo, the preferred alternative, and the non-preferred regulatory options. The first year of regulation will consist of the remainder of the emergency regulations, an interim period until the FMP is implemented, and a phase-in period of implementation followed by full implementation. The year beginning March 2003 is assumed to be the first full year. In the short term, the various regulatory options have the potential to generate substantial impacts.

There will be short term benefits from some of the alternatives, but they may not be sustainable. In restrictive management alternatives, costs are incurred in the short-term and benefits are realized later.

The type of management measures considered in the alternatives would dictate the short term impacts. The use of a hard TAC (Alternatives 1, 2, 3 and 7) would cap landings, revenues, and net returns, to be equivalent to the emergency rule (Alternative 1). As would be expected, taking no regulatory action (Alternative 10) would generate the highest level of landings and revenue in the short term. Because Alternatives 4, 5, 6, 8 and 9 rely on effort controls and a limited fleet size, the landings and revenue would decrease in the short term. Relative to the incidental catch category and excluding the no action option, short term changes would be the same among all the alternatives.

11.6.3 Long Term Economic Impacts on Directed Red Crab Vessels and Incidental Vessels

This section presents a summary of the potential economic impacts over the long term planning horizon. The cumulative impacts suggest a different ranking of impacts than does the short-term total impacts. Since no specific revenues, net returns, and net benefits have been calculated, Table 21 is relied upon to summarize the different economic elements that are important to the fishery. Alternatives with a greater number of negative effects (-) in its column are inferior to alternatives that have more positive (+) or neutral effects (0). Alternative 10 imposes the largest adverse impacts on the fishery.

The type of management measures considered in the alternatives would dictate the long term impacts. The use of a hard TAC (Alternatives 1, 2, 3 and 7) would cap landings, revenues, and net returns, to be equivalent to the emergency rule (Alternative 1). Because Alternatives 4, 5, 6, 8 and 9 rely on effort controls and a limited fleet size, the landings and revenue would decrease in the short term but increase over the long term. Relative to the incidental catch category and excluding the no action option, there would be no differential effect in the long term.

All alternatives may work toward achieving some of the goals for the fishery, but since a year round fishery is a stated objective, only Alternatives 4, 5, 8 and 9 would predictably fulfill all the plans objectives.

11.6.3.1 Alternative 1

Alternative 1 would not preclude the continuation of all vessels in the fishery. Since it is very similar to the measures implemented under the emergency regulations, we can see where a derby fishery would result. When quotas are relatively low, fishermen generally attempt to land as much as possible prior to a fishery closure. This is known to result in considerable economic waste and additional market problems. This alternative would be ranked inferior to all the other alternatives, except for no action.

11.6.3.2 Alternative 2

This alternative would also control effort by forcing vessels to operate at less than

their full capacity. Alternative 2 would control total fishing effort and landings primarily through the use of a hard TAC. Trap limits work by reducing the efficiency of the fishing activity, by forcing fishermen to use a smaller number of traps than that to which they may be accustomed. A lesser number of traps may reduce the catch, without any associated reduction of costs, resulting in reduced profitability. Since this alternative relies exclusively on trap limits to help spread the landings out over the year, to do so effectively the limit would have to be set so low that it would affect all vessels revenue. Alternative 2 would force participating vessels to be very inefficient (affecting some vessels more than others) because the primary mechanism to control effort is through a trap limit. Cost per crab harvested would be higher; to utilize their full vessel capacity, they may try to extend the length of their trip. Vessels would then be operating inefficiently, not due to a trip limit (as in Alternative 1), but due to restrictive trap limits instead. Trap limits in conjunction with a hard TAC would almost certainly have the fishery shut down prior to the end of the fishing year. Employment in the processing sector would have to adjust to fluctuating supply. Instability of supply would cause fluctuations in availability and price. This alternative (as Alternative 1) would be ranked inferior to the preferred alternative.

11.6.3.3 Alternative 3

In an effort to spread out the landings of red crab and reduce the potential for creating a derby-style fishery, Alternative 3 includes all the measures from the previous alternative with the addition of trip limits. The trip limit, in combination with the hard TAC, would help reduce (although certainly not eliminate) the likelihood of a derby fishery and allow for a more equitable distribution of landings in time and space. Under equal trip limits, vessels capable of landings far greater than the trip limit may be forced to operate in an inefficient manner or not participate in the fishery at all. They may not cover their variable costs on these limited trips. This one measure may possibly force some vessels out of the fishery or preclude them from entering the fishery. Larger vessels presumably have greater expenses and the trip limit may not allow them to earn enough revenue to justify making such a trip. While some impacted vessels might continue to make trips and land only up to the trip limit, some vessels might cease making trips, because the trip limit would not provide for profitable trips. It is possible that the effort from the eliminated trips could move into other areas where vessels could make up for lost revenue. However, it is not clear at what level this would occur, or how much additional revenue this would create for vessels. An equal trip limit would require the more productive vessels to take more trips than their ability requires. A trip limit equal to the highest trip on record would not be restrictive, which would make it equivalent in impacts to Alternative 2.

Compared to the preferred alternative (#5), increased inefficiency of vessel operations due to both trap limits and trip limits would raise vessels costs without a corresponding increase in revenue. Both trap and trip limits strive to control effort by forcing vessels to operate at less than their full capacity. Additional controls would increase enforcement costs.

11.6.3.4 Alternative 4

The principle mechanism to control effort in the fishery under alternative 4 would be the use of vessel days-at-sea (DAS). The objective of the alternative would be to allow the appropriate number of DAS to harvest, but not exceed, the target TAC. The effectiveness of this alternative is not directly dependent on the number of vessels participating, but on the calculation of the total number of days that would allow for the target catch to be landed. If the additional measures (especially trap limits) were not used as limiting factors, this alternative has potential to have one of the higher levels of net benefits, since it allows for the market to control production. As long as other measures are not introduced to affect the behavior of vessels, they will be able to maximize their outputs from a given level of inputs, assuming the biomass increases over time.

The potential OY for the fishery that would determine the TAC ranged from 1.254 to 7.904 million pounds. Using this range, we can calculate a range of possible DAS allocations, depending on MSY and fleet size. This range is 11 DAS per vessel if 17 vessels are fishing on a TAC of 1.254 million pounds, up to 296 DAS per vessel if only four vessels are fishing on a TAC of 7.904 million pounds. This range from 11 to 296 DAS illustrates the degree of flexibility that exists in the individual measures. The preferred alternative specifies an OY for the fishery of 5.928 million pounds. This would translate into 53 DAS per vessel if 17 vessels were fishing up to 228 DAS per vessel if only four vessels were fishing. The preferred alternative would allow for five vessels and an allocation of 183 DAS. If a sixth vessel were able to substantiate a landings history to qualify, the allocation would be 152 days for each vessel. Given that the reported number of days absent among the red crab vessels varies from 200 to 300, we can assume that they would all have to cut back on their effort. Since DAS will be restrictive, they can make adjustments to their behavior to accommodate this change, by planning for other sources of income.

This alternative would allow greater continuity of effort and supplies to the market and avoids a negative response to short term fluctuations. A high degree of flexibility is afforded to participants in the fishery concerning when and how long to fish. Processors will be assured of a steady supply of fresh product. The success of this alternative would depend on allowing the DAS to be the principle restriction, and on the careful calculation, and adjustment of the effort restriction. Alternative 4 allows a more predictable level of supplies to market (retailers and consumers) and to the processors. The continuous annual adjustment in target TAC enables management of the resource to respond to changes in stock condition without costly and timely management process. This alternative would be ranked very similar to Alternative 5 and superior to 1, 2 or 3.

11.6.3.5 Alternative 5 (Preferred Alternative)

The preferred alternative includes a controlled access program where vessels must demonstrate that their average annual landings of red crabs during the three years prior to the control date (March 1, 1997 - February 29, 2000) were greater than 250,000 pounds. This option is expected to allow a minimum of five vessels to qualify for the directed fishery (see Table 17). During that three year period, eight out of 30 vessels could have

qualified under less restrictive criteria. This means that there are three vessels that will not qualify for the controlled access program, which would have qualified had other criteria been preferred. For example, if the criteria, using the same three years prior to the control date, had been vessels must have a total of at least 40,000 pounds for the three years, eight vessels would have qualified. Clearly, a total of 40,000 pounds for three years is a significantly different situation than an average of 250,000 pounds for three years.

The preferred alternative specifies an OY for the fishery of 5.928 million pounds. This would translate into 53 DAS per vessel if 17 vessels were fishing up to 228 DAS per vessel if only four vessels were fishing. The preferred alternative would allow for five vessels and an allocation of 183 DAS. If a sixth vessel were able to substantiate a landings history to qualify, the allocation would be 152 days for each vessel. Given that the reported number of days absent among the red crab vessels varies from 200 to 300, we can assume that they would all have to cut back on their effort.

The preferred alternative enforces the use of the control date. Without the control date, additional vessels may have qualified under different criteria. As an indication of interest in the fishery, 17 vessels requested letters of authorization (LOAs) from the NMFS Regional Administrator to allow them to harvest more than 100 pounds of red crab per trip during the first emergency rule period, May 18 - November 14, 2001. However, out of seven vessels that actually reported landings of red crab, only six made multiple trips during the emergency period and consistently landed at or near the trip limit. The 17 vessels that requested LOAs could be taken as an upper limit when calculating those vessels that did not qualify for controlled access. This would imply a potential of 12 vessels that will not qualify had other criteria been selected (such as under the no action alternative). Ten of these 12 vessels have the ability to participate in other fisheries. A description of the other fisheries in which they may participate is included in Table 30. Again, only six of the 17 vessels made multiple trips during the first emergency rule period, so most vessels were presumably fishing in other fisheries during that time. This implies there is one vessel that fished consistently under the emergency rule that will not be allowed to fish in the directed red crab fishery under the preferred alternative. The impact of the preferred regulation on that one vessel may be severe. Because of confidentiality concerns, we cannot describe the home port or community of that vessel. A discussion of the twelve vessels that did not qualify and their community profiles are given in Section 7.1.8 (compliance with National Standard 8).

The preferred alternative would allow for a baseline possession limit for all controlled access vessels of 75,000 pounds of whole red crab (or the equivalent). Based upon public comments, a preferred option was selected that would allow vessels to operate at their best historical level. If a vessel can show proof of a trip higher than 75,000 pounds during the controlled access qualification period, then that vessel will qualify for a trip limit equal to the larger trip, rounded to the nearest 5,000 pounds. It is not always possible for a vessel to duplicate their highest level of landings, so that their average will be less than their individual trip limit. This form of differential trip limit will enable most vessels to operate at their peak efficiency, in the most economical way possible, within the constraints necessary for the resource. This form of trip limit

constitutes a limit on fleet capacity, without creating vessel safety concerns. It also allows each vessel to operate in the most economical way, while still enforcing restraint. Under the preferred alternative, each qualifying vessel will maintain their same competitive position relative to each other, and the total fleet will be constrained to meet the conservation objectives. Under the preferred alternative, the use of differential trip limits, instead of equal trip limits, will allow for the benefits of an effort reduction program to occur.

A decrease in effort always results in a short-term decrease in catch rate, but importantly, may lead to an increase in the long term. In standard yield-effort relationships, the short-term catch rate will always increase with increasing levels of effort. It is only over the long term, when the process of population dynamics has resulted in decreased fish stock, that yield will ultimately decline. The use of days-at-sea as a management option would allow more continuity of effort and supplies to the market, and avoids any response to short term fluctuations.

The preferred alternative selected by the Council would allocate DAS equally to all vessels authorized to participate in the controlled access fishery. All vessels authorized to receive a controlled access red crab permit must, on an annual basis, declare their intent to participate or not in the directed fishery for the next fishing year at least six months prior to the start of the fishing year. This will allow the annual allocation of DAS to be calculated based on the actual number of participants in the fishery. The small number of vessels in the fishery means that each vessel's participation has a large impact on the appropriate number of DAS that the fleet will utilize in catching the target TAC. The advance knowledge and planning for efficient harvest will have economic benefits from harvesting to processing to marketing. Public comments supported this declaration of intent.

The preferred alternative would be exactly the same as the previous alternative, with the addition of differential trip limits. If trip limits were equal across all vessels, it would force each trip taken by a red crab vessel to be roughly equivalent and would contribute to inefficiency in the red crab fleet, restricting some vessels more than others. This could lead to dissatisfaction and disruption of the relationship that exists among members of the red crab fleet. If the calculation of days at sea is accurate, this measure should not be necessary. One justification for the inclusion of the trip limits into the preferred alternative was so that the transition between the emergency action period and the implementation of the final FMP would be smooth. Due to the administrative burden of implementing a DAS program, there would be a short lapse in time before the complete FMP was implemented, whereas the trip limit could take effect with the initial implementation of the FMP. DAS will be measured as a full day for any portion of a day in which the vessel is absent. Because red crab trips are typically at least a week in duration, it will be possible to plan for this type of measurement. This alternative would be ranked very similar to Alternative 4 and superior to Alternatives 1, 2 or 3.

11.6.3.6 Alternative 6

The principle mechanism to control effort in the fishery would be the use of a

specified trip limit and an authorized number of potential fishing trips. Vessels would know, up front, what they could land per trip and how many trips they could take. Individual vessels would have the opportunity to plan for alternative sources of revenue. Even though a TAC is not specified for this alternative, the calculation of number of trips and a trip limit would have to take the total catch into account. Depending on the level of the trip limit, it could restrict vessels to operate in a very inefficient manner. Slightly better, differential trip limits may allow one class of vessels to take advantage of their increased hold capacity. Each vessel could end up with a trip limit and number of trips that may make it unprofitable to participate in the fishery. Differential trip limits would not be as restrictive as Alternative 1 for some vessels. This alternative would allow different size classes of vessels to participate at levels more appropriate for them. There may be administrative problems associated with the implementation of this alternative. This alternative is expected to have impacts similar to Alternative 3.

11.6.3.7 Alternative 7

Alternative 7 includes all possible management measures except for an IVQ system. This alternative would rely on so many different measures, it would be impossible to determine the degree of impact from any one measure and therefore be difficult to adjust to changing stock conditions. The effectiveness of a days-at-sea program is greater if other measures are not also used to undermine its effectiveness. Many of these measures would make it inefficient to operate in the fishery, raising costs, without the benefit of additional revenue. If all measures are used as a way to limit catch or effort, the entire fleet would operate inefficiently; the increased costs would be passed on to the consumer and no one would benefit. If all of the measures of Alternative 7 are not constraining to the behavior of the fleet, then this alternative would have economic benefits similar to those of the preferred alternative. With all options constraining, this alternative would be very difficult to enforce, as well as costly and difficult to administer.

Alternative 7 includes all options from the preferred alternative with the addition of a minimum size. Public comments supported the idea that market control over the minimum size of red crabs is adequate to prevent the landings of small crabs. If that situation is believed to change, then future frameworks can implement a minimum size.

11.6.3.8 Alternative 8

Alternative 8 would implement both a controlled access system to limit the number of vessels participating in the directed fishery and an individual vessel quota to allocate each vessel an individual percentage-based share of the TAC. Vessels would be able to operate at their peak efficiency, selecting the least cost combination of inputs. The supply of red crabs would be consistent throughout the year, maintaining a constant supply to processors, retailers, and consumers. Controlled access will limit the number of vessels harvesting red crab and make it easier to monitor and enforce the individual vessel quotas, whose sum would be equivalent to a hard TAC. From society's point of view, this means there is a reduction in the accumulation of excess capital and lower costs. Those other resources (who are not in the fishery) can be directed elsewhere. Trip revenue would increase as there would be no limits on the amount of crab landed per trip.

Vessels could operate to their full potential and utilize their hold capacity. This alternative would shift a substantial part of the management to a market mechanism, because it eliminates some of the gear, vessels, and processing restrictions that are a greater burden to enforce. This alternative should encourage technological development and innovation. Vessels participating in the directed fishery would have the freedom to choose the most appropriate fishing methods (aside from gear restrictions), fishing times, and strategies. The creation of use rights means that some gain and some lose; this creates a redistribution of wealth and has equity implications.

In addition to granting the right to be in the fishery, individual quotas also convey the right to harvest a specified quantity to fish (or proportion of TAC). Since it works back from a predetermined TAC to the amount available to the individual vessel, it provides much tighter control over each year's catch than would control of inputs (such as DAS or trip limits). A great degree of freedom and flexibility would be granted to the individual vessel. His choice of area or fishing time would be his own. There is no incentive to over invest in the vessel and gear, or to select anything but the least cost combination of inputs.

11.6.3.9 Alternative 9

This alternative is very similar to the previous alternative, except that it would rely entirely upon an individual vessel quota system to control the harvest of red crabs in the directed red crab fishery. Any vessel with a history of red crab landings prior to the implementation of the FMP would be able to continue fishing for red crab, albeit at the same relative rate at which they previously fished. The composition of the fleet would remain as it is now. Without controlled access, a greater number of vessels would be participating in the fishery, but because of this, each vessel would have a lesser quota than the previous alternative. It would not preclude any vessel now operating in the fishery from participating but would still provide an upper limit on the quantity of labor and capital in the fishery. With a greater number of vessels operating in the fishery, there would be a loss of revenue among some, if not all vessels.

With individual quotas, vessels are less likely to harvest in the manner of a fishing derby. Trip revenue may increase as there would be no limits on the amount of crab landed per trip, although total revenue may not. Vessels could operate to their full potential and utilize their hold capacity. This alternative would shift a substantial part of the management to a market mechanism, because it eliminates some of the gear, vessels, and processing restrictions that are a greater burden to enforce. This alternative should encourage technological development and innovation. Vessels participating in the directed fishery would have the freedom to choose the most appropriate fishing methods (aside from gear restrictions), fishing times, and strategies.

11.6.3.10 Alternative 10

Alternative 10 would have the greatest economic impact of all alternatives. This can be defined as what is likely to occur in the absence of any of the proposed regulatory actions. With no restrictions, additional entrants would be allowed into the fishery; based

on recent occurrences, this would be expected to occur. In the short term, landings may increase, but because they are not sustainable, the long term economic effect will be negative. With the entry of additional vessels, and vessels of increasing size, the catch per vessel would decrease. Historic participants could be eliminated from the fishery or at least become marginally viable. With no action, the most likely outcome would be that overfishing will occur and a future FMP would need to implement measures that would end and prevent future overfishing. Worse, if appropriate exploitation rates are greatly exceeded or, if it is determined that the red crab stock is overfished, the FMP will need to include a number of restrictive measures to eliminate overfishing and/or rebuild the resource under a statutory time schedule. Therefore, the no-action alternative would likely reduce long-term economic benefits to the fishery.

In the absence of regulation, there would be an increased supply of red crabs to consumers initially, but the long term effect would be decreased supply and presumably higher prices. In the same manner, an initial increase in processing requirements may occur, depending on the quantity that is processed at sea and the quantity that is processed on shore. Since most of the red crab product is processed, increased supply may not have as large of an effect on price, since processed products have a longer shelf life and are not perishable. In the absence of regulation, there would likely continue to be significant under-reporting, since there would be no incentive for the vessels or dealers to report their landings. Also, the uncontrolled and potentially escalating effort could have negative economic impacts on those businesses who depend on the red crab fishery. In the long term, Alternative 10 is predicted to be ranked the lowest of the alternatives.

11.6.4 Impacts of Framework Adjustment Measures Under the Preferred Alternative

The next regulatory action establishes the framework adjustment process which enables the modification of management measures through a stream lined decision-making and rule-making procedure. The framework adjustment process allows the Councils to add or modify management measures through a streamlined public review process. The following management measures could be implemented or modified through framework adjustment procedures.

1. Optimum yield
2. Management unit
3. Technical parameters for MSY
4. Incidental catch limits
5. Minimum size of landed crabs
6. Male crabs only
7. Butchering and/or processing restrictions
8. Trap limits
9. Gear requirements and restrictions
10. Total allowable catch
11. Trip limits
12. Controlled access system
13. Days-at-sea limits

The framework adjustment procedures listed above may be used to modify the FMP to ensure the objectives of the plan. These provisions may add flexibility to the method of managing red crab. The effectiveness of size limits is not known and has been cited as an area for further research. Almost all of these measures are being included in some form in the preferred alternative. The specifics of each measure would need to be modified through a framework adjustment process. Detailed discussion of their impacts is included in Section 5.3.

11.7 Additional Issues

Allowing fishermen to be more deliberate in their actions would take away the incentive to race for fish. It would also serve to improve safety, extend the fishing season, improve the availability of product, and stabilize market prices. The preferred alternative would provide sufficient opportunities to fish with respect to time, location, and other individual qualifiers.

The previous description attempted to highlight the potential impacts of each alternative on the economic performance of the fleet. In addition to the potential impacts, there are other potential issues for the fishery which should be considered. Vessels, which might be forced out of the red crab fishery, may redirect fishing effort into other fisheries. The potential other fisheries that may be affected, however, have not been identified. It is important to note that the vessels excluded from participating in the red crab fishery under the preferred alternative consist of very recent entrants. The historical fishing practices and dependence on the fishery would remain.

Attempts were made to mitigate the impact on vessels that will not qualify for the controlled access program. The range of criteria considered by the Council had considerable flexibility and offered a wide range of options. They choose neither the most restrictive nor the least restrictive criteria. Provisions which were taken into account include (1) the present participation in the fishery; (2) the historical fishing practices in, and dependence on, the fishery; (3) the economics of the fishery; (4) the capability of fishing vessels to engage in other fisheries; and (5) the social framework relevant to the fishery.

11.8 Summary of Economic Impacts

Uncertainty about the status of the red crab stock, as well as the uncertainty inherent in the data has limited the probability with which we can predict the potential outcomes of the various alternatives. One of the most positive outcomes from this FMP will be the collection of data that will reduce the uncertainty about the future of the resource and its management. The preferred alternative is ranked above most others given that the selection must end likely increases in overcapacity, deal with a control date, have a transition period prior to the implementation of the regulations, and provide an operating environment similar to what has gone on historically.

11.9 Review of Impacts Relative to the Regulatory Flexibility Act

11.9.1 Introduction and Methods

The Regulatory Flexibility Act (RFA) requires federal rulemakers to examine the impacts of proposed and existing rules on small businesses, small organizations, and small governmental jurisdictions. In reviewing the potential impacts of proposed regulations, the IFRA determines whether the proposed action would have a “significant economic impact on a substantial number of small entities.” The Small Business Administration (SBA) size standards define whether a business entity is small and, thus, eligible for Government programs and preferences reserved for “small business” concerns. Size standards have been established for all for-profit economic activities or industries in the North American Industry Classification System (NAICS). The SBA defines a small business in the commercial fishing and recreational fishing sector, as a firm with receipts (gross revenues) of up to \$3.5 million. The SBA has just issued an interim final rule (IFR) which adjusts for inflation in its criteria for defining a small business. In related businesses that deal in canned and cured fish and seafood or prepared fish or frozen fish and seafood, a small business is one that employs 500 employees or fewer. In fish and seafood wholesalers, a small business is defined as one that employs 100 or fewer employees. For fish and seafood markets, a small business is defined as a firm with receipts of up to \$6.0 million.

A complete description of the red crab fishery is found in Section 8.0 of this document. In addition, the need for, and objectives of this FMP can be found in Sections 2.3 and 3.1, respectively.

The proposed measures could affect any vessel that has participated in the red crab fishery in the past. All these vessels readily fall within the definition of small business. The VTR and Dealer databases were used to identify all individual vessels with more than one pound of reported red crab landings during the years 1991 - 2001, inclusive. Where there was a discrepancy between the amount of landings in the VTR data and the amount in the dealer data, the greater of the two was used. There were 86 individual vessels that reported some landings of red crab during this period. Of these, 47 reported less than 1,000 pounds of landings total over the eleven years. Of the remaining vessels, 22 had total landings of more than 1,000 pounds but less than 10,000 pounds. Only one of these 22 vessels had less than 1,000 pounds of landings in each of the eleven years, but only two vessels had 5,000 pounds or more in any one year.

There were four vessels that reported between 10,000 and 100,000 pounds of landings during this period. Three of these vessels only reported landings in a single year and the fourth vessel reported landings in only two of the eleven years. There were another six vessels with reported landings between 100,000 and 1,000,000 pounds. None of these vessels reported any landings prior to 1995. Of these, two vessels reported landings only in 2001. Seven vessels reported landings greater than 1,000,000 pounds. Of the seven, two vessels have not reported any landings since 1993. The remaining five vessels reported landings greater than 1,000,000 pounds and have a current reporting history.

For the purposes of the RFA, more recent data should be considered. For the one year period following the control date (March 1, 2000 - February 28, 2001), there were 14 vessels which reported landing at least one pound of red crab. Total reported landings in 2000 (2001 preliminary) logbooks for Maine through North Carolina equaled 654,270 (1,933,748) pounds; landings from the weigh-out data for the same region and period equaled 6,900,480 (7,264,507) pounds -- a difference between data sources of over 6 and 5 million pounds in each of the two most recent years.

Not all landings and revenues reported through the federal dealer data can be attributed to a specific vessel. Vessels with no federal permits are not subject to any federal reporting requirements with which to corroborate the dealer reports. This has 2 consequences. First, the stated number of entities subject to the regulation is a lower bound estimate, since non-federally permitted dealers cannot be counted. Second, the portion of activity by these uncounted vessels may cause the estimated economic impacts to be inaccurate. Until the emergency rules were enacted for red crab, there were no requirements for permits or reporting of landed red crab. Since landings and revenue figures varied so widely between the VTR and dealer data, a voluntary survey of all participants was relied upon. Since quantitative data were not available, the effects of actions were analyzed by employing qualitative analyses.

The RFA asks agencies to implement less burdensome regulations on small entities if the objectives of the regulation are not compromised as a result. In this case, the magnitude of impact (of at least one vessel) is due to a qualification rule not a conservation objective. Since management is not through a hard quota, it cannot be argued that the conservation objectives will be met regardless of how many vessels are allowed to participate in the fishery. Under this circumstance, one could argue that the opportunity to accommodate the few vessels that are most impacted exists. It is important to (1) acknowledge that vessels that are most impacted are impacted because they do not qualify for limited access; (2) to identify which qualification criterion vessels fail to meet; and (3) why these vessels cannot be accommodated (e.g., the vessel entered the fishery after the control date).

11.9.2 Control Date Discussion

An issue with economic significance is the share of the catch to be allocated among vessels with a history in the fishery and recent or new entrants. This is related to the interpretation of the control date of March 1, 2000, in qualifying recent or new entrants. The preferred alternative includes a controlled access program where vessels must demonstrate that their average annual landings of red crabs during the three years prior to the control date (March 1, 1997 - February 29, 2000) were greater than 250,000 pounds. This option is expected to allow a minimum of five vessels to qualify for the directed fishery (see Table 17). During that three year period, eight out of 30 vessels could have qualified under the least restrictive criteria. This means that there are three vessels that will not qualify for the controlled access program, which would have qualified had other criteria been preferred. For example, if the criteria, using that same three years prior to the control date, had been vessels must have a total of at least 40,000 pounds for the three years, eight vessels would have qualified.

One of the stated objectives of the plan is to “develop a controlled access system to keep fishing capacity matched to the available resource.” The primary decision to use the control date to limit participation is consistent with the plan’s objectives. It is because of this interpretation that recent or new entrants would not qualify. Given the least restrictive criteria in the NMFS data and the control date cut-off, eight vessels could have qualified. Since the data are questionable, an upper bound consistently used as potential qualifiers is the 17 vessels that applied for authorization to fish under the emergency rule in 2001. This would be without consideration of the control date.

11.9.3 Description of the Alternatives

A complete description of the red crab fishery is found in Section 8.0 of this document. In addition, the need for, and objectives of this FMP can be found in Sections 2.3 and 3.1, respectively. A detailed description of the measures and alternatives evaluated in this document is presented in Section 4.0, and in Section 4.2.1 for the incidental catch limit category in particular. In addition, an overall discussion of the impacts associated with each measure and alternative is presented in Section 5.0.

11.9.4 Analyses of Impacts of Alternatives

The RFA is intended to identify impacted vessels and to characterize the potential economic impact on directly affected entities. The term “regulated entity” in this case means those vessels that would be impacted by this rule. It does not just refer to those vessels that would qualify to be in the fishery. It also includes those vessels who are excluded from the fishery, and who have either been in it in the past, or have indicated a desire to be in it. To further characterize the potential impacts on indirectly impacted entities, a discussion of the communities within which owners of impacted vessels reside is needed. These communities are discussed in Section 7.1.8 (National Standard 8). In addition to this, a detailed description and analysis of the potential impacts to dealers and processors is presented in this section. Lastly, the impacts associated with the proposed permit and reporting requirements for commercial vessels and dealers, and operators permit is also presented in this section.

Generally, the percent of revenue reduction for impacted vessels would vary considerably based on the permits it held (i.e., based on the fisheries in which it was able to participate) and species it landed. Diversity in the fleet would help to balance loss in one fishery with revenue generated from other fisheries. A discussion of the number of permits held by those entities that are affected by the regulation is presented in Section 11.5.1 and in Table 30. Of the 17 vessels that had LOAs to fish for red crab in 2001, five would qualify under the preferred alternative. Of the 12 remaining vessels, 10 had permits to fish in other fisheries. It would be expected that vessel operators would redirect fishing activities to other fisheries.

The general purpose of the information presented below is to provide a general overview of the potential impacts on regulated entities associated with the management alternatives.

11.9.5 Economic Impacts on Vessels

11.9.5.1 Alternative 1

Alternative 1 would not preclude the continuation of all vessels in the fishery. Since it is very similar to the measures implemented under the emergency regulations, we can see the type of fishery behavior that would result. Since there is no controlled access program in this alternative, all vessels would continue operating in a derby manner to land as much as possible prior to closure of the fishery. Each regulated entity would experience unstable revenue and have to deal with market problems. Profitability from the red crab fishery over the course of a year would be low for all vessels, since they would be operating in a very inefficient manner, due to restrictive trap and trip limits.

11.9.5.2 Alternative 2

This alternative would also control effort by forcing vessels to operate at less than their full capacity. Trap limits work by reducing the efficiency of the fishing activity. A lesser number of traps would reduce the catch, without any associated reduction of costs, resulting in reduced profitability. A controlled access system would limit the number of participants, and so there would be some that would be shut out of the fishery entirely. Cost per crab harvested would be higher.

11.9.5.3 Alternative 3

A controlled access system would limit the number of participants, so there would be some that would be shut out of the fishery entirely. This would affect their profitability and they would have to seek alternative sources of income. For those that qualify, under equal trip limits, vessels capable of landing far greater than the trip limit may be forced to operate in an inefficient manner or not participate in the fishery at all. They may not cover their variable costs on these limited trips. While some impacted vessels might continue to make trips and land only up to the trip limit, some vessels might cease making trips, because the trip limit would not provide for profitable trips. It is possible that the effort from the eliminated trips could move into other areas where vessels could make up for lost revenue. However, it is not clear at what level this would occur, or how much additional revenue this would create for vessels. Increased inefficiency of vessel operations due to both trap limits and trip limits would raise vessel's costs without a corresponding increase in revenue, thus affecting a vessels profitability.

11.9.5.4 Alternative 4

The effectiveness of this alternative is not directly dependent on the number of vessels participating, but on the calculation of the total number of days that would allow for the target catch to be landed. As long as other measures are not introduced to effect the behavior of vessels, they will be able to maximize their outputs from a given level of inputs, assuming the biomass increases over time. Controlled access is still a measure of this alternative, so it would exclude some vessels from participating.

The range of possible DAS allocations, depending on MSY and fleet size, is 11 DAS per vessel if 17 vessels are fishing on a TAC of 1.254 million pounds, up to 296 DAS per vessel if only four vessels are fishing on a TAC of 7.904 million pounds. The preferred alternative specifies an OY for the fishery of 5.928 million pounds. This would translate into 53 DAS per vessel if 17 vessels were fishing up to 228 DAS per vessel if only four vessels were fishing. The preferred alternative would allow for at least five vessels and an allocation of up to 183 DAS. Given that the reported number of days absent among the red crab vessels varies from 200 to 300, they would all have to cut back on their effort and this would affect their profitability. They would have the flexibility to plan for other sources of income. Each trip that was taken under this alternative would be as productive as possible, reflecting the lack of a trip limit.

11.9.5.5 Alternative 5 (Preferred Alternative)

The preferred alternative includes a controlled access program where vessels must demonstrate that their average annual landings of red crabs during the three years prior to the control date (March 1, 1997 - February 29, 2000) were greater than 250,000 pounds. This option would allow for at least five vessels to participate in the directed fishery (see Table 15). During that three year period, eight out of 30 vessels could have qualified under less restrictive criteria. This means that there are three vessels that will not qualify for the controlled access program, which would have qualified had less restrictive criteria been selected. These three vessels landed at least 10,000 total pounds of red crab for three years prior to the control date, for an average of 3,333 pounds per year. Subtracting the incidental catch of 500 pounds (assuming the most restrictive assumption that the landings represented only one trip per year), would mean that each of the three vessels' loss would be equivalent to 2,833 pounds, or \$2,833 (assuming \$1 per pound).

The preferred alternative would allow for at least five vessels and a potential DAS allocation of up to 183 DAS. Given that the reported number of days absent among the red crab vessels varies from 200 to 300, they would all have to cut back on their effort, but in different amounts. Based on public comments, the five vessels would all be profitable on an allocation of 183 days.

The preferred alternative implements the March 1, 2000 control date. Without the control date, additional vessels may have qualified under different criteria. As an indication of interest in the fishery, 17 vessels requested letters of authorization (LOAs) from the NMFS Regional Administrator to allow them to harvest more than 100 pounds of red crab per trip during the first emergency rule period, May 18 - November 14, 2001. However, out of seven vessels that landed red crab, only six made multiple trips during the emergency period and consistently landed at or near the trip limit. The 17 vessels that requested LOAs could be taken as an upper limit when calculating the number of vessels that would not qualify for controlled access. This would imply a potential of 12 vessels that will not qualify had other criteria been selected (such as under the no action alternative). Ten of these 12 vessels have the ability to participate in other fisheries. A description of the other fisheries in which they may participate is included in Table 30. Again, only six of the 17 vessels made multiple trips during the first emergency rule period, so they were presumably fishing in other fisheries during that time. This implies

there is one vessel that fished consistently under the emergency rule that will not be allowed to fish in the directed red crab fishery under the preferred alternative. The impact of the preferred regulation on that one vessel's profitability could be severe.

The preferred alternative would allow for a baseline possession limit for all controlled access vessels of 75,000 pounds of whole red crab (or the equivalent). Based upon public comments, a preferred option was selected that would allow vessels to operate at their best historical level. It is not always possible for a vessel to duplicate their highest level of landings, so that their average will be less than their individual trip limit. This form of differential trip limit will enable vessels to operate at their peak efficiency, in the most economical way possible, within the constraints necessary for the resource. Under the preferred alternative, each qualifying vessel will maintain their same competitive position relative to each other, and the total fleet will be constrained to meet the conservation objectives.

The preferred alternative would be exactly the same as the previous alternative, with the addition of differential trip limits. One justification for the inclusion of the trip limits into the preferred alternative was so that the transition between the emergency action period and the implementation of the final FMP would be smooth.

11.9.5.6 Alternative 6

A controlled access system would limit the number of participants, so there would be some that would be shut out of the fishery entirely. This would affect their profitability and they would have to seek alternative sources of income. For those that qualify, the principle mechanism to control effort in the fishery would be the use of a specified trip limit and an authorized number of potential fishing trips. Individual vessels would have the opportunity to plan for alternative sources of revenue. Even though a TAC is not specified for this alternative, the calculation of number of trips and a trip limit would have to take the total catch into account. Depending on the level of the trip limit, it could restrict vessels to operate in a very inefficient manner. Slightly better, differential trip limits may allow one class of vessels to take advantage of their increased hold capacity. Each vessel could end up with a trip limit and number of trips that may make it unprofitable to participate in the fishery.

11.9.5.7 Alternative 7

Again, a controlled access system would limit the number of participants. Alternative 7 includes all possible management measures except for an IVQ system. The effectiveness of a days-at-sea program is greater if other measures are not also used to undermine its effectiveness. Many of these measures (if constraining) would make it inefficient to operate in the fishery, raising costs, without the benefit of additional revenue, affecting profitability of those who qualify. If all the measures of Alternative 7 were not constraining to the behavior of the fleet, then this alternative would have economic benefits similar to those of the preferred alternative.

11.9.5.8 Alternative 8

Alternative 8 would implement both a controlled access system to limit the number of vessels participating in the directed fishery and an individual vessel quota to allocate each vessel an individual percentage-based share of the TAC. Vessels would be able to operate at their peak efficiency, selecting the least cost combination of inputs, and maximizing their revenue, and thus their profit. The creation of use rights means that some gain and some lose; this creates a redistribution of wealth and has equity implications. In addition to granting the right to be in the fishery, individual quotas also convey the right to harvest a specified quantity of fish (or proportion of TAC). Those vessels that do not qualify would be the losers.

11.9.5.9 Alternative 9

Under this alternative, the composition of the fleet would remain as it is now. Without controlled access, a greater number of vessels would be participating in the fishery, but because of this, each vessel would have a lesser quota than the previous alternative. It would still provide an upper limit on the quantity of labor and capital in the fishery. With a greater number of vessels operating in the fishery, there would be a loss of revenue among some, if not all vessels. This alternative would create a redistribution of wealth among a larger group of vessels. Some of them may be more profitable than others.

11.9.5.10 Alternative 10

In the absence of any of the proposed regulatory actions, additional entrants would be allowed into the fishery. In the short term, landings and revenue may increase for some vessels if not all, but because they are not sustainable, the profitability of all vessels would suffer. With the entry of additional vessels, and vessels of increasing size, the catch per vessel would decrease.

In the absence of regulation, there would be an increased supply of red crabs to consumers initially, but the long term effect would be decreased supply and presumably higher prices. Also, the uncontrolled and potentially escalating effort could have negative economic impacts on those businesses that depend on the red crab fishery.

11.9.6 Economic Impacts on Dealers

A description of red crab dealers and their overall dependence on red crab is presented in Appendix B. In the dealer data, in 2001 there were seven federal seafood dealers who handled red crab. Of these seven, only one handled greater than 1500 pounds in a year. The other six depended on red crab for only a very minor portion of their revenues. Of the pounds reported in the dealer database, 96% was reported by an unknown dealer. Another way to look at dependence is by absolute value. By this measure, only one dealer depended on red crab revenues for over \$200,000. In calendar year 2000, there were three dealers listed in the dealer data, although 88% of the red crab recorded landings were from an unknown dealer. Because of this obvious inadequacy of the dealer data to provide information on dealers, we must rely on the voluntary survey

summarized in Appendix B for further information.

Dealers would be regulated entities under the RFA only to the extent that they have to get a permit under any of the alternatives proposed. Overall, it was felt that very few dealers would be affected by any of the alternatives.

11.9.7 Economic Impacts on Processors

Processors would not be considered regulated entities for purposes of the FRA. Appendix B provides an overview of the processing sector as it relates to the red crab fishery.

11.9.8 Description of Permit and Reporting Requirements

A detailed discussion of all permit and reporting requirements was presented in Sections 3.8 (general overview), 3.8.1 (permit requirements for commercial vessels), 3.8.3 (dealer permits and fees), 3.8.5 (vessel reporting), and 3.8.6 (dealer reports). All of the alternatives (except no action) contain the same provisions and requirements for permitting and reporting, so this factor does not cause any differential effects by alternative. Additional analysis on the impacts of permit and reporting requirements on small entities is presented below.

11.9.9 Economic Impact of Permit and Reporting Requirements

Under all alternatives there are proposed permit and reporting requirements for commercial vessels, vessel operators and seafood dealers. Accounting for all activities in the fishery are necessary to enforce provisions of the FMP and ensure that the objectives are met. Permits and reporting requirements for all sectors which harvest or sell red crab provides the foundation for effective monitoring and enforcement of regulations. Section 303(b)(1) of the Magnuson-Stevens Act specifically addresses the need for permit issuance. The purpose of permits is to (1) list the characteristics of fishing vessels and/or dealer/processor operations; (2) exercise influence over compliance; (3) provide a mailing list for dissemination of information to the industry; (4) register participants to be considered for limited entry; and (5) provide a universe for data collection. Limited access permits are issued to those who meet the specific qualification criteria for a fishery.

It is anticipated that vessels landing red crab for sale will be required to have permits, dealers purchasing this species from permitted vessels will be required to have permits, operators of commercial vessels (vessels with permits to sell red crab) will be required to obtain permits, vessels landing red crab for sale would need to submit logbook reports, and dealers purchasing this species from permitted commercial vessels would need to submit reports.

It is estimated that there will be minimal, if any, new dealer permit applicants. The cost associated with the dealer and processed products reports are \$30 for the public and \$66 for the government. Under all of the alternatives, any vessel desiring to fish commercially for red crab must obtain a federal vessel/owner red crab permit. In the one

year following the control date (March 1, 2000 - February 28, 2001) there were at least 14 vessels which landed at least one pound of red crab. Because all of the alternatives (except no action and emergency rule) impose limited access and enforcement of the control date, a portion of these vessels would not be eligible for a red crab permit. They would all be eligible to land red crab under the incidental category. The preferred alternative supports criteria for five vessels to apply for permits. Initial costs for vessel permits would be \$38 for public burden (\$7.50 per vessel) and \$63 for the government burden. Similarly, for operator permits there would be a \$75 cost for the public burden (\$15 per operator) and a \$42 cost for the government burden. For vessel identification numbers, there would be a \$56 public cost burden (\$11.29 per vessel). It is estimated that there may be one vessel that may also incur additional costs associated with confirmation of permit history, replacement and upgrades, and permit vessel appeals which are estimated at \$135 per vessel and \$300 for the government. Costs of submitting vessel logbooks would be \$100 annually for the public (\$20 per vessel) and \$125 for the government. Given the small number of new permits expected in this fishery, the impact of permit and reporting requirements is predicted to be minimal.

11.9.10 Competitive Effects Analysis

Most of the vessels, dealers, and processors fall within the definition of small entities. There is some indication that there is participation in this fishery by large entities. In particular, a processor specified in the survey he employs 1000 people (greater than the 500 employees defined as a small entity). However, the maximum number of year-round employees, as opposed to seasonal, for any processor was listed as 400. There is also an indication in the survey that a fish and seafood wholesaler employs 150 people (which is greater than the 100 employees defined as a small entity). However, only a small proportion of their business revenue is derived from the sale of red crab products. The percentage of their business revenue that comes from the sale of red crab products ranges from less than 1% to 33% and averages only slightly more than 25%. This does indicate that there may be large businesses involved in the industry. Because of the small nature of the fishery and the issue of confidentiality we cannot determine if there are disproportionate small versus large effects. There are no disproportionate costs of compliance among the effected small entities.

11.9.11 Identification of Overlapping Regulations

The proposed action does not create regulations that conflict with any state regulation or other federal laws.