

**Framework Adjustment 1**  
**to the**  
**Atlantic Surfclam and Ocean Quahog**  
**Fishery Management Plan**  
**Regarding Vessel Monitoring Systems (VMS)**

**(Includes Environmental Assessment, Regulatory Impact Review,  
Initial Regulatory Flexibility Analysis, Social Impact Assessment, and Essential Fish Habitat  
Assessment)**

**February 2007**

**Mid-Atlantic Fishery Management Council**

**in cooperation with**

**The National Marine Fisheries Service**

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## 1.0 EXECUTIVE SUMMARY

Under section 302(h) of the Magnuson-Stevens Act, as amended by the SFA, Regional Fishery Management Councils (Councils) prepare and submit Fishery Management Plans (FMPs) for fisheries under their authority that require conservation and management. The surfclam (*Spisula solidissima*) and ocean quahog (*Arctica islandica*) fishery is managed under the Surfclam and Ocean Quahog FMP that was prepared cooperatively by the Council and National Marine Fisheries Service. Amendment 12 to the FMP (MAFMC 1999) added a framework adjustment procedure that allows the Council to add or modify management measures through a streamlined public review process. The action proposed in this document would modify the existing Surfclam and Ocean Quahog FMP through this framework adjustment process.

This action, Framework 1, was initially designed to expand on the issues of Vessel Monitoring Systems (VMS) and electronic reporting identified in Amendment 13 (MAFMC 2003). While the use of these tools was approved in Amendment 13, implementation was deferred largely because of the high costs of VMS at that time. Only one VMS vender (Boatracs) was certified for the Northeast, and the initial hardware costs (\$6,000) and monthly connection charges for each vessel were high (\$250). Hence Amendment 13 stated: "The Council recommends that the Regional Administrator implement this system when an economically viable system is available for the industry based on the advice of the Council." In the past three years, two other vendors, SkyMate and Thrane & Thrane have been certified and both the initial and monthly costs have fallen significantly.

The purpose of implementing VMS at this time is to replace the call-in requirement and facilitate the enforcement of differential management regimes between state and Federal waters, as well as area closures in Federal waters. It is hoped that VMS will also facilitate the reporting of vessel harvest data electronically at some point in the future, eliminating the need for paper forms and reducing the time and effort required by the reporting process for both the industry and government.

At the June 2005 Council meeting, the Council passed the following motion: "...Council begin development of a framework action to require the mandatory use of VMS for surfclams and ocean quahogs."

This Framework initially contained the following four alternatives, which were discussed by the Council at Framework Meeting 1 on October 11, 2006. None were specified as a preferred alternative at that time.

- 1) Status Quo
- 2) VMS (only)
- 3) Electronic Reporting (only) without VMS
- 4) Electronic Reporting and VMS

At that meeting the Regional Administrator stated that the current regulations (at Section 648.7(b)(1)(i)) already provide her with the authority to authorize the electronic reporting of vessel trip information, but that the necessary infrastructure is not expected to be in place in the Northeast Region until 2008. Given these circumstances, she recommended that the electronic reporting alternatives be removed from this Framework document.

Following the Regional Administrator's recommendation, the alternatives that included electronic reporting were removed from consideration, leaving only VMS to be addressed in this Framework. The alternatives were then reformulated and expanded to better address the issues related to VMS implementation.

Comments were solicited and received from the Sustainable Fisheries Division and Office of Law Enforcement of the NMFS Northeast Regional Office, the Maine Department of Marine Resources (Maine DMR), and industry members from up and down the East Coast. It soon became apparent that the only major issue in implementing a VMS requirement was how to treat the small artisanal vessels in Maine.

When the Council directed the staff to start moving forward with a VMS framework in June of 2005, the Commissioner of Maine's DMR sent the Council a letter. Section 5.3 contains a quote representing the majority of the text in the letter from Commissioner Lapointe. At that time, he questioned whether VMS was justified for the Maine fleet, and asked the Council to consider exempting Maine vessels from a VMS requirement. He also described the fact that the Maine fishery is currently concentrated in a relatively remote area off of Jonesport, and that there are no "slips" or docks there where vessels can tie up and have access to shore-side electric power. All the boats unload at a public dock and then are moored a short distance from shore.

This creates a potential problem for Maine fishermen in complying with a VMS requirement that would obligate them to keep the units powered on continuously, so he requested a power-down exemption for the Maine fleet similar to that afforded to the scallop general category fishery. This special exemption allows vessels to turn the VMS unit off at the end of each fishing trip, provided the vessel does not move and does not have any scallops on board. This issue does not exist for the industrial clam fleet operating to the south, as these vessels can only operate out of ports that have more extensive facilities available.

The request for a special power-down exemption for the Maine fleet became the primary issue debated by the Council at Framework Meeting 2 held on December 13, 2006 in New York City. A representative from NMFS' Enforcement Office was very clear in describing the difficulties created by the scallop general category power-down exemption, and felt that it would be better to have no VMS requirement at all than another one hobbled by a power-down exemption.

Similarly, the complete absence of shore-side electric service in the Jonesport area was communicated to all attendees through remarks from Council staff as well as references to written comments from Maine DMR and Maine industry participants. It was understood that a requirement to keep VMS units powered on continuously represented a challenge for the Maine fleet that does not exist for the industrial fleet.

Nevertheless, potential technological solutions to the issue of continuous power were described by Council staff as well as the Coast Guard representative and a number of other Council members. The power demands of VMS units are relatively modest, and can be met through solutions using auxiliary batteries or solar panels to power electronic equipment while the vessel's engine is shut down.

The Council decided that the optimal course of action would be to move forward with a coastwide VMS requirement that did not include a special power-down exemption for vessels lacking shore-side power, but to give the Maine quahog limited access fleet more time to comply with the rule. This compromise position is represented in the final suite of alternatives below as **Alternative 2b**, and is designated as the preferred alternative.

### **1) Status Quo**

This alternative represents the current management regime and is the baseline against which all other alternatives will be compared. It would continue the "call-in" trip notification provision which requires all surfclam and ocean quahog vessels participating in the Individual Transferable Quota (ITQ) program to call-in to a local NMFS' enforcement office and identify the port of landing as well as the estimated time of departure and return from a trip. This requirement also applies to ITQ trips landing in Maine. The call-in has been suspended for vessels utilizing the shared quota available to vessels with a limited access Maine quahog permit (OQ7) fishing in the Maine (Mahogany) Quahog Zone (MMQZ). There is currently no requirement to utilize VMS for any segment of the surfclam or ocean quahog fisheries.

### **2a) Mandatory VMS Coast-wide (With No Exemptions for Active Maine Vessels)**

A mandatory VMS requirement is enacted coast-wide that includes all Federal permit categories: Surfclam (SF 1, open access), Ocean Quahog (OQ 6, open access), and Maine Mahogany Quahog (OQ 7, limited access). All permitted vessels must install VMS or surrender the permit, unless it is a limited access Maine quahog permit that is not actively being fished. No special power-down exemption is created for Maine vessels that lack access to shore-side electrical service while moored or docked. With all vessels covered by VMS, the call-in requirement would be rescinded for all vessels coast-wide.

### **2b - Preferred) Mandatory VMS Coast-wide; Maine Mahogany Quahog (OQ 7) Limited Access Vessels Granted 1-Year Deferment**

This alternative is identical to Alternative 2a, with the only difference being that vessels fishing under a Maine Mahogany Quahog (OQ7) limited access permit will not be required to install VMS for a period of one year from the effective date of the final rule.

In the initial year a mandatory VMS requirement will be enacted coast-wide that affects the two Federal permit categories that participate in the ITQ program: Surfclam (SF 1, open access) and Ocean Quahog (OQ 6, open access). In Year 2 the VMS requirement will be expanded to include active Maine Mahogany Quahog (OQ 7) limited access vessels. All vessels subject to the requirement must install VMS or surrender the permit, unless it is a limited access Maine quahog permit that is not actively being fished. No special power-down exemption is created for Maine vessels that lack access to shore-side electrical service while moored or docked. Once a vessel has VMS it would no longer be required to call-in.

### **3) Mandatory VMS with Special Exemptions for the Maine (Mahogany) Ocean Quahog Fishery**

Alternative 3 offers a choice of three distinct management options that are designed to accommodate the artisanal (mahogany) ocean quahog fishery in Maine. It is intended that only one of the three may be selected.

### **3a) Mandatory VMS Coast-wide with Power-Down Exemption in MMQZ**

Mandatory VMS is required of all clam vessels coast-wide, however a power-down exemption is granted to vessels while moored or docked in the MMQZ. The call-in requirement is rescinded for all vessels coast-wide.

**3b) Mandatory VMS with an Exemption in the MMQZ**

Mandatory VMS is required of all clam vessels EXCEPT those operating in the MMQZ. Vessels fishing under a Maine quahog limited access permit (OQ 7) are exempt from the VMS requirement. Vessels fishing in the MMQZ under the ITQ program are also exempt from the VMS requirement; however they must continue to follow the call-in requirements. The call-in requirement is rescinded for all vessels fishing outside the Maine zone. The need for VMS power-down exemptions is largely avoided under this alternative.

**3c) VMS Required on All ITQ Trips; Maine Limited Access Fishery is Exempted**

Mandatory VMS is required of all clam vessels EXCEPT those operating under the Maine quahog limited access permit (OQ 7), which are exempt. Vessels harvesting surfclams or ocean quahogs under the ITQ program must comply with the VMS requirement, however a power-down exemption is granted to vessels while moored or docked in the MMQZ.

It should be stressed that Framework 1 is designed to address administrative and enforcement issues in the management of the surfclam and ocean quahog fisheries only. Economic costs of compliance will result from the purchase of VMS equipment and their monthly subscriptions. A summary of the estimated compliance costs for each alternative is provided below. Expected benefits that cannot readily be assigned a dollar value include the fact that the effectiveness and efficiency of enforcement should be enhanced through the use of VMS technology. Some modest amounts of time and money will be saved by both the government and industry if the call-in requirement can be removed. Additional communications and information benefits are available if the VMS units are used for SOS transmissions, weather reports, e-mail, or eventually electronic reporting.

<b>Summary of Estimated VMS Compliance Costs Across All Alternatives for All Affected Vessels</b>		
<b>Alternative</b>	<b>Initial Year VMS &amp; Installation Costs</b>	<b>Recurring Annual Service Fees</b>
1) Status Quo	\$0	\$0
2a) Mandatory VMS Coast-wide (With No Exemptions for Active Maine Vessels)	\$116,450	\$11,880
<b>2b - Preferred) Mandatory VMS Coast-wide; Maine Mahogany Quahog (OQ 7) Limited Access Vessels Granted 1-Year Deferment</b>	\$116,450	\$11,880
3a) Mandatory VMS Coast-wide with Power-down Exemption in MMQZ	\$103,950	\$11,880
3b) Mandatory VMS with an Exemption in the MMQZ	\$44,100	\$5,040
3c) VMS Required on All ITQ Trips; Maine Limited Access Fishery is Exempted	\$44,100	\$5,040

No significant impacts are expected relative to the surfclam and ocean quahog fisheries, or the marine environment. Specifically, none of the alternatives are expected to result in significant positive or negative impacts to: 1) the surfclam and ocean quahog resources, 2) any non-targeted species in these fisheries, 3) habitat (EFH), 4) endangered and protected species, and 5) socioeconomic resources.

## 2.0 LIST OF ACRONYMS

<i>CEQ</i>	Council on Environmental Quality
<i>CFR</i>	Code of Federal Regulations
<i>CZMA</i>	Coastal Zone Management Act
<i>EA</i>	Environmental Assessment
<i>EEZ</i>	Exclusive Economic Zone
<i>EFH</i>	Essential Fish Habitat
<i>EIS</i>	Environmental Impact Statement
<i>EO</i>	Executive Order
<i>ESA</i>	Endangered Species Act of 1973
<i>F</i>	Fishing Mortality Rate
<i>FR</i>	Federal Register
<i>FMP</i>	Fishery Management Plan
<i>IRFA</i>	Initial Regulatory Flexibility Analysis
<i>LPUE</i>	Landings Per Unit Effort
<i>M</i>	Natural Mortality Rate
<i>MAFMC</i>	Mid-Atlantic Fishery Management Council
<i>MMPA</i>	Marine Mammal Protection Act
<i>MMQZ</i>	Maine Mahogany Quahog Zone
<i>MSFCMA</i>	Magnuson-Stevens Fishery Conservation and Management Act
<i>MSY</i>	Maximum Sustainable Yield
<i>mt</i>	metric tons
<i>NAO</i>	NOAA Administrative Order
<i>NEFSC</i>	Northeast Fisheries Science Center
<i>NEPA</i>	National Environmental Policy Act
<i>NERO</i>	Northeast Regional Office
<i>NMFS</i>	National Marine Fisheries Service
<i>NOAA</i>	National Oceanic and Atmospheric Administration
<i>OY</i>	Optimal Yield
<i>PRA</i>	Paperwork Reduction Act
<i>RA</i>	Regional Administrator
<i>RIR</i>	Regulatory Impact Review
<i>RFA</i>	Regulatory Flexibility Analysis
<i>SARC</i>	Stock Assessment Review Committee
<i>SAW</i>	Stock Assessment Workshop
<i>SFA</i>	Sustainable Fisheries Act
<i>VMS</i>	Vessel Monitoring System

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## 4.0 PURPOSE AND NEED FOR ACTION

The need for this action is to address issues related to the administration, monitoring, and enforcement of the surfclam and ocean quahog fishery while continuing to achieve the management objectives of the Surfclam and Ocean Quahog FMP as outlined in section 4.2. The purpose of implementing VMS is to replace the current call-in requirement and facilitate the enforcement of Federal fishery management areas as well as any closed area enforcement, including areas closed due to harmful algal blooms.

### 4.1 History of FMP Development

The Council has been involved in surfclam and ocean quahog management since its first meeting (September 1976), when it was discussed that the surfclam fishery should be the first to have a plan developed. An overview of some of the amendment actions that have affected management of surfclams and ocean quahogs are summarized in Table 1.

**Table 1. History of the Surfclam and Ocean Quahog FMP and Associated Amendments.**

Year	Document	Management Action
1977	Original FMP	<ul style="list-style-type: none"> <li>- Quarterly quotas for surfclams and annual quotas for ocean quahogs</li> <li>- Effort limitations, permit and logbook provisions</li> <li>- Moratorium in the surfclam fishery</li> </ul>
1979	Amendment 1	<ul style="list-style-type: none"> <li>- Extended FMP until new stock assessment was completed</li> <li>- Added processor reporting</li> </ul>
1979	Amendment 2	<ul style="list-style-type: none"> <li>- Extended FMP through 1981</li> <li>- Divided surfclam management unit into the New England and Mid-Atlantic</li> </ul>
1981	Amendment 3	<ul style="list-style-type: none"> <li>- Extended FMP indefinitely</li> <li>- Minimum size limit for surfclams was added</li> <li>- Quota setting frameworked</li> </ul>
1983	Amendment 4	<ul style="list-style-type: none"> <li>- New England Council developed for New England; never approved</li> </ul>
1984	Amendment 5	<ul style="list-style-type: none"> <li>- Allowed for revision of surfclam minimum size limit and instituted cage tags</li> </ul>
1986	Amendment 6	<ul style="list-style-type: none"> <li>- Address new Georges Bank fishery</li> </ul>
1987	Amendment 7	<ul style="list-style-type: none"> <li>- Changed quota distribution on Georges Bank</li> <li>- Revised roll-over provisions</li> </ul>
1990	Amendment 8	<ul style="list-style-type: none"> <li>- Established individual transferable quota (ITQ) system</li> <li>- Allowed minimum surfclam size to be suspended from year to year</li> <li>- Merged New England and Mid-Atlantic surfclam areas</li> </ul>
1996	Amendment 9	<ul style="list-style-type: none"> <li>- Revised overfishing definitions</li> </ul>
1998	Amendment 10	<ul style="list-style-type: none"> <li>- Provided management measures for ocean quahogs off the northeast coast of Maine</li> </ul>
1998	Amendment 11	<ul style="list-style-type: none"> <li>- Drafted to achieve consistency among Mid-Atlantic and New England FMPs on vessel replacement and upgrade provisions</li> </ul>
1999	Amendment 12	<ul style="list-style-type: none"> <li>- Drafted to bring FMP into compliance with Sustainable Fisheries Act</li> <li>- New overfishing definitions</li> <li>- Identified and described essential fish habitat</li> <li>- Added framework adjustment procedure</li> <li>- Implemented Operator Permits</li> </ul>
2004	Amendment 13	<ul style="list-style-type: none"> <li>- Revised surfclam overfishing definition</li> <li>- Addressed fishing gear impacts to EFH</li> <li>- Allowed for multi-year quotas</li> <li>- Provided for a reversal of the suspension of the surfclam size limit</li> <li>- Allows Regional Administrator to implement a mandatory vessel monitoring system (VMS) when an economically viable system is available for the industry based on the advice of the Council</li> </ul>

Amendment 13 (entire VMS section included in Appendix 1) contained an analysis of four alternatives relative to VMS and electronic reporting. After discussions with the RA over Amendment 13 during 2003 the Council overwhelmingly voted that any system should be mandatory, but postponed any specific economic analysis since they recommended that the RA not implement this system until an economically viable system was available for the industry based on the advice of the Council.

#### **4.2 Management Objectives of the FMP**

The four management objectives listed below were generated for Amendment 8 (MAFMC 1988) with the ITQ initiation and the Council sees no reason to change these farsighted ideas.

1. Conserve and rebuild Atlantic surfclam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.
2. Simplify to the maximum extent the regulatory requirement of surfclam and ocean quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of surfclam and ocean quahog management.
3. Provide the opportunity for industry to operate efficiently, consistent with the conservation of surfclam and ocean quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.
4. Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

#### **4.3 Management Unit**

The management unit is all Atlantic surfclams (*Spisula solidissima*) and ocean quahogs (*Arctica islandica*) in the Atlantic EEZ. In 1988 the American Malacological Union officially changed the common name of “surf clam” to the one word name “surfclam”. This was published in the American Fisheries Society special publication 16 entitled *Common and Scientific Names of Aquatic Invertebrates from the United States and Canada: Mollusks* (American Fisheries Society 1988). The ocean quahogs managed in this FMP include a small-scale fishery in eastern Maine that harvests small ocean quahogs which are generally sold for the half-shell market. Locally these small ocean quahogs off the coast of Maine are known as “mahogany quahogs” and have been under Council management since implementation of Amendment 10 (MAFMC 1998).

A southern subspecies of surfclam, *Spisula solidissima similis*, occurs south of Cape Hatteras (Walker and Heffernan 1994). Another species, *Spisula raveneli*, occurs in the southern part of the range of *S. solidissima*. This species distinction, based on distribution and morphology is controversial (Vecchione and Griffis 1996).

#### **4.4 Management Strategy**

The management strategy for this Framework is to provide the information and evaluations necessary to meet the Congressional mandates associated with the SFA of 1996. Effective Federal fishery

management of surfclams and ocean quahogs has occurred for the past three decades. The Council intends to continue to prevent overfishing of these two resources, as they have done in the previous three decades of management, meet the purposes specified in the SFA, and continue to attain the management objectives identified in Amendment 8 (MAFMC 1988) which have allowed efficient operation of the fishery on a well managed resource.

## 5.0 MANAGEMENT ALTERNATIVES

### 5.1 Alternative 1 Status Quo

*Description:* This alternative represents the current management regime and is the baseline against which all other alternatives will be compared. It would continue the "call-in" trip notification provision which requires all surfclam and ocean quahog vessels participating in the Individual Transferable Quota (ITQ) program to call-in to a local NMFS' enforcement office and identify the port of landing as well as the estimated time of departure and return from a trip. This requirement also applies to ITQ trips landing in Maine. The call-in has been suspended for vessels utilizing the shared quota available to vessels with a limited access Maine quahog permit (OQ7) fishing in the Maine (Mahogany) Quahog Zone (MMQZ). There is currently no requirement to utilize VMS for any segment of the surfclam or ocean quahog fisheries.

#### Enforcement of the ITQ Fisheries

Amendment 8 to the Surfclam and Ocean Quahog FMP dramatically changed the management and enforcement regime of these two species by replacing complex effort controls with individual transferable quotas. Prior to the adoption of Amendment 8 in 1990, harvest rights in the surfclam fishery were assigned to vessels rather than individuals, and at that time, each vessel was allotted only 24 trips per year. Enforcement was very costly, as it required aircraft or vessels to monitor fishing activities at sea. Violations of the regulations usually took the form of vessels spending more time on the water fishing than they were allowed to under the effort management program.

Replacing effort controls with individual quotas changed the focus of management from regulating the "inputs" to a fishery, which in this case was time on the water, to the "outputs" of the fishery, or the quantity of surfclams harvested. Each vessel owner was allocated a percentage share of the annual harvest that could be fished, rented, or permanently sold to other individuals. The inefficiencies imposed by effort restrictions were removed, allowing industry to employ only the number vessels and crew that were actually needed to harvest their share of the annual quota.

The surfclam and ocean quahog resources were also particularly well suited to ITQ management because of two additional factors. First, they are "single species fisheries" with little or no bycatch (Wallace and Hoff 2004). Captains can successfully target either species without including other species that might be regulated by a conflicting management regime. Secondly, in all states except Maine, harvests of surfclams and ocean quahogs are all placed in large metal cages and transported by truck to a small number of processing plants. Upon arrival at a processing plant, they will be removed from the shell, washed thoroughly to remove all sand that may have entered the shell during harvest, and then further processed into products such as fried clam strips, diced clam meats, chowders, etc.

Enforcement of the ITQ management program is accomplished through the issuance of plastic "tags" imprinted with unique serial numbers to each allocation owner. At the start of every fishing year, NMFS will issue a series of these tags in a quantity that corresponds to the number of surfclam or ocean quahog bushels each allocation owner has the right to harvest. Each tag represents 32 bushels, which in turn equals the volume of a standard 3'x4'x5' metal cage used by the industry to transport surfclams and ocean quahogs.

The regulations drafted to enforce the ITQ system require that all cages containing freshly-caught surfclams or ocean quahogs have one of the serialized allocation tags affixed to it before the winch line

that hoisted it off of a fishing vessel and on to a truck is removed. Each tag is fashioned such that it may only be fastened to a cage once; it cannot be removed without destroying it.

Once a shipment of clams arrives at a processing plant, processors are required to cut the tags off of each cage once they are emptied. It is illegal for an empty cage to have a tag still affixed to it. Hence, enforcement of the ITQ program is reduced to ensuring that all cages of clams arriving at processing plants have tags fastened to them, and that all empty cages that have left a plant no longer have tags on them.

Additional enforcement measures include requiring both vessels and processors to submit a list of the tag serial numbers used for every shipment of surfclams or ocean quahogs. NMFS will record each set of tag numbers in a database, so they can be compared to ensure the numbers match and that serial numbers are used only once.

### The Call-In Provision

Enforcement procedures for the ITQ system therefore focus on inspections at processing plants, and occasional observation of cage loading and offloading in ports. Agents do not have to make their presence known when performing port inspections. They might, for example, observe a vessel offloading from a distance with a pair of binoculars, and count the number of cages that are taken off the ship. Later that number could be compared with the number of cages the vessel reported landing on its trip report form submitted to NMFS. If more cages were landed than were reported in the vessel's report, then a violation might result. Agents can also approach vessels during port inspections and verify whether cages being loaded on or off vessels have tags on them.

Port inspections are clearly aided by the knowledge of when and where surfclam and ocean quahog vessels would be arriving to or leaving from any given port. It was for this reason that the call-in requirement was instituted; giving notice to NMFS enforcement officials the time and place vessels would be leaving from or arriving back in port. Note that a vessel may not always unload its catch in the same port that it departed from. Arrangements might be made to meet the waiting trucks at any location that is convenient and has the equipment necessary for offloading cages from vessels.

The specific language of the call-in requirement in the regulations is as follows:

§ 648.15 Facilitation of enforcement.

(a) *General.* See §600.504 of this chapter.

(b) *Special notification requirements applicable to surf clam and ocean quahog vessel owners and operators.* (1) Vessel owners or operators are required to call the NMFS Office of Law Enforcement nearest to the point of offloading (contact the Regional Administrator for locations and phone numbers) and accurately provide the following information prior to the departure of their vessel from the dock to fish for surf clams or ocean quahogs in the EEZ: Name of the vessel; NMFS permit number assigned to the vessel; expected date and time of departure from port; whether the trip will be directed on surf clams or ocean quahogs; expected date, time, and location of landing; and name of the individual providing notice.

(2) Owners or operators that have given notification of a fishing trip under this paragraph (b) who decide to cancel or postpone the trip prior to departure must immediately provide notice of cancellation by telephone to the Office of Law Enforcement to which the original notification

was provided. A separate notification shall be provided for the next fishing trip. Owners or operators that discontinue a fishing trip in the EEZ must immediately provide notice of discontinuance by telephone to the Office of Law Enforcement to which the original notification was provided. The owner or operator providing notice of discontinuance shall advise of any changes in landing time or port of landing. The owner or operator discontinuing a fishing trip in the EEZ must return to port and offload any surf clams or ocean quahogs prior to commencing fishing operations in the waters under the jurisdiction of any state.

(3) The vessel permits, the vessel, its gear, and catch shall be subject to inspection upon request by an authorized officer.

(4) *Suspension of notification requirements.* The Regional Administrator may suspend notification requirements for vessels fishing under a Maine mahogany quahog permit issued pursuant to §648.4(a)(4)(i) if he determines that such notification is not necessary to enforce effectively the management measures in the Maine mahogany quahog zone. The Regional Administrator may rescind such suspension if he concludes that the original determination is no longer valid. A suspension or rescission of suspension of the notification requirements by the Regional Administrator shall be published in the Federal Register.

#### Call-In Requirement Waived for Maine Ocean Quahog Fishery

The enforcement measures described in the previous sections were designed specifically for the industrial fisheries for surfclams and ocean quahogs as they are conducted off the states to the south of Maine. Industry standards were incorporated into the regulatory framework of the two fisheries. A "bushel" of landed surfclams or ocean quahogs was defined in the regulations as the industry-standard bushel of 1.88 cubic feet, as opposed to the US Standard bushel of 1.2445 cubic feet. The volume of a "cage" was defined as 60 cubic feet; equating to the volume of an industry-standard cage measuring 3'x4'x5' on each side.

Many of the regulatory measures designed for the industrial surfclam and ocean quahog fisheries were a poor match for the artisanal fishery for ocean quahogs as it is prosecuted off Maine's shores. Small vessels in the 35' to 40' range dredge for small ocean quahogs to sell into a fresh, raw-bar market. None of the Maine harvests are taken to processing plants. The Maine area quahogs are placed in bags for transport; the large metal cages of the industrial fisheries being too unwieldy for their small vessels, and most landing sites lack the cranes necessary to move them.

Amendment 10 to the Surfclam and Ocean Quahog FMP implemented a management regime that better accommodated the Maine fishery, and took effect in 1998. Its primary management measures were: 1) the designation of a Maine Mahogany Quahog Zone (MMQZ); 2) a maximum quota of 100,000 Maine bushels for this Zone; and 3) establishment of a limited access "Maine mahogany quahog permit" (or "Maine quahog permit") for the artisanal Maine fishery that included all vessels participating in the fishery at the time, but prohibited new vessels from entering.

The maximum quota of 100,000 bushels for the MMQZ was designated as an interim value that could be increased only after a peer-reviewed stock assessment of the Maine resource was performed. An assessment has been completed and a peer review was performed in November 2006. The Council will be informed of the assessment results in February 2007. Note that this quota is not allocated to individuals or vessels; it is a traditional quota that is shared amongst all permitted vessels. NMFS monitors landings of the shared quota and will close the fishery once the entire quota is harvested.

The most difficult issue faced in developing Amendment 10 was addressing the different management approaches held by stakeholders in Maine versus the states to the south. While some fishermen in Maine welcomed extending ITQ management into Maine waters, others did not. The compromise that was ultimately reached was the creation of the MMQZ with its own shared quota, but with the provision that vessels and ITQ allocation from the south not be barred from the waters off Maine. This hybrid approach then, allows landings to continue in Maine after the shared quota is taken, but it must be done utilizing available ITQ quota that was either rented or purchased from the ITQ component of the ocean quahog fishery.

Amendment 10 leaves the call-in requirement as an optional tool for vessels issued a limited access Maine ocean quahog permit and participating in the Maine fishery. It may be waived at the discretion of the Regional Administrator. It was designed to aid in monitoring industrial vessels that may operate 24 hours a day and range far up and down the East Coast. The small boats in the Maine fleet do not venture far from home, and are frequently restricted to harvesting in small areas that the State of Maine is able to certify as being free of PSP toxin.

Given these circumstances, and the fact that the majority of Maine landings are from the shared quota rather than ITQ allocations, the call-in requirement has been suspended since the implementation of Amendment 10 in 1998 for those vessels issued a limited access Maine ocean quahog permit participating in the Maine fishery. However, vessels issued an ITQ allocation permit and participating in the ITQ program in the MMQZ must use the call-in system. This includes vessels that may have participated in the limited access Maine quahog fishery in the same fishing year.

#### Environmental Area Closures

One of the key strengths of VMS technology is in monitoring and enforcing area closures. In recent years there have been an increasing number of circumstances in which specific areas of the ocean have been given a special designation. Whether it is a marine sanctuary, gear restricted area, or location with environmental hazards such as a harmful algal bloom, the need to provide special oversight of specific areas is becoming commonplace. In the fisheries for surfclams and ocean quahogs, there have been relatively few, with the most notable being the Georges Bank PSP area closure that has been in effect since 1990. In June of 2005, however, a large new closure off the coasts of Massachusetts and New Hampshire was imposed due to the presence of PSP that prohibited the harvest of all bivalve mollusks except Atlantic sea scallop meats.

As part of this "Status Quo" alternative then, it should be noted that the area oversight capabilities afforded by VMS are currently not available.

#### **5.2.1 Alternative 2a) Mandatory VMS Coast-wide (With No Exemptions for Active Maine Vessels)**

*Description:* A mandatory VMS requirement is enacted coast-wide that includes all Federal permit categories: Surfclam (SF 1, open access), Ocean Quahog (OQ 6, open access), and Maine Mahogany Quahog (OQ 7, limited access). All permitted vessels must install VMS or surrender the permit, unless it is a limited access Maine quahog permit that is not actively being fished. No special power-down exemption is created for Maine vessels that lack access to shore-side electrical service while moored or docked. With all vessels covered by VMS, the call-in requirement would be rescinded for all vessels coast-wide.



## Overview of VMS

Vessel Monitoring Systems are electronic devices that may be used in conjunction with orbiting satellites to provide highly-accurate position information and a range of communication services. Vendors have developed products and services targeted to a wide range of industry applications. Companies in the transportation industry utilize these technologies to track the location of their fleets of trucks, buses, or vessels in real time. Specialized services have been developed for the maritime industries that include support for the regulation of fishing vessels as well as the supply of communication and information services.

Currently there are three vendors that have been certified by the NERO of NMFS to provide vessel monitoring systems that meet the technical and legal requirements of fishery management programs off the Northeastern United States:

- 1) Boatracs
- 2) SkyMate
- 3) Thrane & Thrane (pronounced "Tron & Tron")

Devices may be installed on vessels that transmit location data ("pings") at specified intervals or on demand. The data are transmitted via satellite to the service providers and can be relayed on to government agencies, vessel owners, etc. In addition to vessel speed and location, custom data elements may be entered by the captain or a crew member in order to report other trip data such as species and pounds harvested on the trip.

Communication and information services offered by one or more of the three vendors include e-mail, weather, fax, voice messaging and emergency SOS broadcasts to the US Coast Guard and/or vessel owners. Each vendor offers a range of subscription plans that include varying amounts of characters transmitted for a set price. For example, SkyMate offers up to 8,000 characters sent or received under its "Silver VMS" plan for a fee of \$19.99 per month. The "Gold VMS" plan includes up to 20,000 characters for \$38.99 per month, and the "Platinum VMS" plan includes up to 50,000 characters for \$73.99 per month. (Prices quoted off SkyMate.com web site as of November 6, 2006.)

## Council Actions on VMS

The Council has been considering VMS systems since the mid-1990's. VMS was included as a frameworkable measure in Amendment 12 to the Surfclam and Ocean Quahog FMP in 1998. In 2003 mandatory VMS was an approved measure in Amendment 13; however implementation was deferred until less costly systems were available on the market. At that time, Boatracs was the only certified vendor in the Northeast, and hardware costs alone were on the order of \$6,500 per unit.

The capabilities of VMS technology were quite promising, and spurred the formation of a working group of both government and industry representatives to plan for the future implementation of electronic tracking, reporting, and noticing systems, some of which would be aided by VMS. A consensus was reached that implementation should be divided into three phases:

Phase 1: Implement VMS to replace the Call-In requirement, benefiting both industry and enforcement.

Phase 2: Implement electronic reporting for both vessels and processors, making the process both faster and more efficient.

Phase 3: Utilize VMS to obtain "real-time" data for scientists that would be useful in managing short-lived species, such as *Loligo* and *Illex* squid.

By mid-2005 there were two vendors certified by NMFS to provide VMS systems in the Northeast, and competition had succeeded in forcing prices down. The Mid-Atlantic Council voted at its June 2005 meeting to direct the staff to develop a framework action to finally implement mandatory VMS for the clam fleet.

Of the events envisioned by the working group, by mid-2006 only electronic reporting for processors and dealers had been fully implemented. It was the intention of Council staff to also include electronic reporting options for clam vessels in this Framework action. However the Regional Administrator informed the Council at its October 2006 meeting that NERO does not yet have the systems in place to implement vessel electronic reporting, and therefore recommended that those options be removed from the Framework document. Furthermore, the Regional Administrator noted that she currently does have the authority to implement vessel electronic reporting programs; hence it would not be necessary for the Council to develop another framework action in the future to affect that change. Discussions with NERO staff indicate that 2008 is the approximate time frame in which it is hoped that vessel electronic reporting can start to be deployed on a wide scale.

#### VMS Implementation, Benefits and Challenges

As of November 27, 2006, a total of 1,456 active VMS systems were functioning on fishing vessels in the Northeast. The fishery management plans that currently include VMS provisions are:

- Atlantic Sea Scallop
- NE Multispecies
- Monkfish
- Atlantic Herring

The primary benefits that VMS systems offer to fisheries management and enforcement programs are:

- Facilitate enforcement of closed areas through vessel tracking features. VMS units can be programmed to notify both the vessel's captain and NMFS Enforcement office in real time if the vessel strays into a closed area for a particular fishery. In the case of the surfclam and ocean quahog fisheries, the most relevant examples would be environmental area closures for PSP or toxic dumpsites.
- Facilitate the monitoring and enforcement of effort controls such as the "Days At Sea" provisions in the NE Multispecies FMP.
- Facilitate enforcement of Federal harvest jurisdictions (outside of state territorial waters). The states of New York and New Jersey have their own management programs and quotas for the surfclam resources within their state waters. In 2005 New York experienced illegal harvests of surfclams that officials feel VMS would have aided in preventing. The New York Surfclam & Ocean Quahog Advisory Board voted unanimously to support VMS at their November 2005 meeting once there is EEZ implementation.

- Facilitate communications and data reporting with government agencies. All VMS systems certified in the Northeast are required to support two-way communications. Vessels can submit trip harvest information across VMS units and can receive confirmation that the reports have been received.

The major challenges and liabilities of VMS include:

- VMS is a more costly and complex enforcement tool for the clam fisheries than the current call-in requirement.
- Some in industry have voiced privacy concerns relative to VMS, and questioned whether universal deployment is justified.
- Current confidentiality laws are limiting the circumstances under which Federal officials can share VMS data with state officials. Some state officials have expressed frustration that they do not have ready access to VMS data when investigating potential violations of state law.

#### Difficulties of VMS Implementation in the Artisanal Maine Ocean Quahog Fishery

As will be discussed more fully in the following sections, there are obstacles to the implementation of VMS in the small-scale fishery for ocean quahogs off the coast of Maine. The most obvious is that the fishery is currently prosecuted from the remote Jonesport area near the US boarder with Canada. Here there are no "slips" available where a vessel can tie up and obtain shore-based electric service to facilitate powering VMS units while the vessel is moored. All vessels tie up to moorings or anchor themselves a short distance from shore. In order to power VMS transmissions continuously, then, an additional power source would be required, such as an auxiliary battery.

#### Alternative 2a Summary

In summary, this alternative is specified such that a mandatory VMS requirement is enacted coast-wide. Its principal benefits are derived from the fact that similar requirements are imposed on all segments of the surfclam and ocean quahog fisheries, across all permit categories, closing as many potential loopholes as possible. All permitted vessels must install VMS or surrender the permit, unless it is a limited access Maine ocean quahog permit that is not actively being fished. No special power-down exemptions are created. With all vessels covered by VMS, the call-in requirement would be rescinded for all vessels coast-wide. The greatest liability of this alternative is that participants in the Maine ocean quahog fishery will experience somewhat greater costs and difficulties in complying with the requirements.

#### Alternative 2a Principal Regulatory Measures:

- All vessels with surfclam (SF 1) or ocean quahog (OQ 6) open access permits must install VMS or surrender the permit. If they wish to fish in future years, they may install VMS and reapply for the permit (these permits are currently "open access" which means that the permit can be relinquished and reapplied for without loss of eligibility for the permit).
- All vessels with Maine (Mahogany) Quahog limited access permits (OQ 7) must install VMS prior to departure for any ocean quahog directed fishing trip. The VMS unit must remain on for the remainder of the permit year unless otherwise exempted by another provision in this part (e.g. a power-down exemption). The permit will not be canceled for failure to install VMS so long as the vessel is not

participating in the fishery. Penalties for directed ocean quahog fishing without a VMS may include forfeiture of the limited access OQ7 permit.

- Vessels required to use VMS under this alternative would be required to declare their intended fishing activity, via the VMS unit, prior to crossing the VMS demarcation line. Furthermore, the VMS unit required under this alternative must provide hourly position transmissions unless otherwise exempted.

- No special power-down exemption is created for Maine vessels that lack access to shore-side electrical service while moored or docked unless the vessel meets one of the following conditions:

- The vessel will be continuously out of the water for more than 72 consecutive hours, and the vessel signs out of the VMS program by obtaining a valid letter of exemption from the Regional Administrator.
- The vessel declares out of the fishery and VMS program for a minimum period of 30 consecutive days, and the vessel signs out of the VMS program by obtaining a valid letter of exemption from the Regional Administrator, the vessel does not engage in any fisheries until the VMS unit is turned back on, and the vessel complies with all conditions and requirements of said letter.

### **5.2.2 Alternative 2b - Preferred) Mandatory VMS Coast-wide; Maine Mahogany Quahog (OQ 7) Limited Access Vessels Granted 1-Year Deferment**

*Description:* This alternative is identical to Alternative 2a, with the only difference being that vessels fishing under a Maine Mahogany Quahog (OQ7) limited access permit will not be required to install VMS for a period of one year from the effective date of the rule.

In the initial year a mandatory VMS requirement will be enacted coast-wide that affects the two Federal permit categories that participate in the ITQ program: Surfclam (SF 1, open access) and Ocean Quahog (OQ 6, open access). In Year 2 the VMS requirement will be expanded to include active Maine Mahogany Quahog (OQ 7) limited access vessels. All vessels subject to the requirement must install VMS or surrender the permit, unless it is a limited access Maine quahog permit that is not actively being fished. No special power-down exemption is created for Maine vessels that lack access to shore-side electrical service while moored or docked. Once all vessels are covered by VMS, the call-in requirement would be rescinded coast-wide.

#### Development of Alternative 2b

At Framework Meeting 2 held on December 13, 2006, the Council debated at length the conflicting objectives of:

- 1) minimizing the costs and inconvenience imposed upon industry, and
- 2) maximizing the benefits derived from VMS in the areas of regulatory enforcement, vessel safety, and future use in electronic reporting.

A representative from NMFS' Enforcement Office was very clear in describing the difficulties created by the scallop general category power-down exemption, and felt that it would be better to have no VMS requirement at all than another one hobbled by a power-down exemption.

Similarly, the complete absence of shore-side electric service in the area of Jonesport, ME was communicated to all attendees through remarks from Council staff as well as references to written comments from Maine DMR and Maine industry participants. It was understood that a requirement to keep VMS units powered on continuously represented a challenge for the Maine fleet that does not exist for the industrial fleet.

Nevertheless, potential technological solutions to the issue of continuous power were described by Council staff as well as a number of Council members. The power demands of VMS units are relatively modest, and can be met through solutions using auxiliary batteries or solar panels to power electronic equipment while the vessel's engine is shut down.

The Council decided that the optimal course of action would be to move forward with a coastwide VMS requirement that did not include a special power-down exemption for vessels lacking shore-side power, but to give the Maine quahog limited access fleet more time to comply with the rule. This slight modification of Alternative 2 was then incorporated into this Framework document as Alternative 2b, and designated as the preferred alternative.

#### Alternative 2b Principal Regulatory Measures:

- All vessels with surfclam (SF 1) or ocean quahog (OQ 6) open access permits must install VMS by the effective date of the rule or surrender the permit. If they wish to fish in future years, they may install VMS and reapply for the permit (these permits are currently “open access” which means that the permit can be relinquished and reapplied for without loss of eligibility for the permit).
- All vessels with Maine (Mahogany) Quahog limited access permits (OQ 7) are granted a 1-year deferment from the VMS requirement. Vessels active in the fishery must install VMS within one year from the effective date of the rule. The VMS unit must remain on for the remainder of the permit year unless otherwise exempted by another provision in this part (e.g. a power-down exemption).
- Because revocation of a Maine limited access permit (OQ 7) could result in that permit never being re-issued due to the regulations governing limited access permit programs, a special provision is made for the implementation of the VMS requirement for this permit category. The OQ 7 permit will not be canceled for failure to install VMS so long as the vessel is not participating in the Maine limited access fishery. However, once a vessel has elected to participate in the Maine limited access quahog fishery, the vessel must have installed and have operational a VMS unit from that time forward. Once a vessel has elected to participate in the Maine limited access quahog fishery the VMS unit may only be powered down if it meets general power-down conditions outlined below. Penalties for directed ocean quahog fishing without a VMS may include forfeiture of the limited access OQ 7 permit.
- Vessels required to use VMS under this alternative would be required to declare their intended fishing activity, via the VMS unit, prior to crossing the VMS demarcation line before each fishing trip. Furthermore, the VMS unit required under this alternative must meet all applicable requirements of 50 CFR part 648.9, including providing hourly position transmissions unless otherwise exempted by the regulations.
- No special power-down exemption is created for Maine vessels that lack access to shore-side electrical service while moored or docked. However, all vessels required to use VMS under this alternative may power down their VMS unit if they meet one of the following conditions (from 50 CFR part 648.9(c)(2)(A) and 50 CFR part 648.9(c)(2)(B):

- The vessel will be continuously out of the water for more than 72 consecutive hours, and the vessel signs out of the VMS program by obtaining a valid letter of exemption from the Regional Administrator.
- The vessel declares out of the fishery and VMS program for a minimum period of 30 consecutive days, and the vessel signs out of the VMS program by obtaining a valid letter of exemption from the Regional Administrator, the vessel does not engage in any fisheries until the VMS unit is turned back on, and the vessel complies with all conditions and requirements of said letter.

### 5.3 Alternative 3) Mandatory VMS with Special Exemptions for the Maine (Mahogany) Ocean Quahog Fishery

In a letter of June 3, 2005, Maine Dept. of Marine Resources Commissioner George Lapointe asked the Council to carefully consider the justification of a VMS requirement for Maine vessels. He stated:

*...VMS is normally required to address specific problems in a fishery, such as monitoring days at sea or fishing in closed areas. Since neither of those management tools are being used in the Maine fishery, have there been other specific problems identified in the Maine quahog fishery that VMS would help to solve? I would ask that the Council carefully consider the objectives of a VMS requirement and whether or not Maine vessels should be required to have VMS. If the major purpose is to monitor the location of the vessels in the fishery, Maine vessels should be exempt. The Maine quahog fishery occurs in a relatively small area in eastern Maine, so VMS is not likely to provide any new insights into this fishery. While some of the full time Maine quahog vessels acknowledge that VMS may be inevitable and may not be a serious economic imposition, part time vessels will be more significantly impacted. In addition, some vessels that are not currently fishing but wish to retain access to the fishery are concerned that they may not be able to retain their permits without installing a VMS.*

*If the Council decides to move forward and include the Maine quahog fleet in a VMS requirement, there should be a well documented justification for this requirement. If VMS is required, we ask that Maine vessels be allowed to power down the units while moored or docked. Most of these vessels do not have shore based power sources available to continuously operate a VMS and, therefore, continuous operation of a VMS is impractical for them.*

The three distinct management options specified in Alternative 3 are designed to respond to the concerns identified in Commissioner Lapointe's letter. They vary simply in the degree to which Maine quahog vessels are exempted from a VMS requirement, and in the treatment of ITQ program trips taken in the MMQZ. **It is intended that only one of the three options (3a, 3b, or 3c) be selected.**

#### 5.3.1 Alternative 3a) Mandatory VMS Coast-wide with Power-down Exemption in MMQZ

*Description:* Mandatory VMS is required of all clam vessels coast-wide, however a power-down exemption is granted to vessels while moored or docked in the MMQZ. The call-in requirement is rescinded for all vessels coast-wide.

#### VMS Power-down Exemptions and the Maine Quahog Fishery

Enforcement officials emphasize that the value of VMS as an enforcement tool and an incentive to comply with regulations is diminished when VMS units are not required to be powered on

continuously. When the units are powered off and no longer broadcasting vessel location, enforcement officials have no ability to determine if a vessel is in a prohibited area or failing to comply with other time or location-based management measures. Therefore, from an enforcement perspective, it is preferred that VMS requirements include the provision that the units remain powered on both when a vessel is at sea and when it is moored or tied to a dock.

It is also important to note that funds to support enforcement activities are limited. The costs to deploy enforcement vessels and aircraft are substantial, and the use of VMS enables more efficient use of these assets. Verifying compliance through both targeted and routine boarding of vessels at sea is greatly facilitated when officials know where the vessels are located.

Availability of shore-side electric service to supply VMS units with continuous power is not an issue for the industrial clam fleet. All ports where the industrial boats offload must have facilities that include cranes to hoist the clam cages ashore. The docks where they tie up can be universally assumed to have shore electric service.

However, as Commissioner Lapointe stated in his letter, availability of shore power to the Maine quahog fleet is extremely limited. The fishery is currently centered in the Jonesport area, where there are no "slips" with shore-side electric service available. Therefore, this alternative specifies a mandatory VMS requirement for all clam vessels coast-wide, however a power-down exemption is granted to vessels while moored or docked in the MMQZ.

Furthermore, limited access Maine ocean quahog permits will not be canceled for failure to install VMS so long as the vessel is not participating in the fishery.

### Alternative 3a Summary

This alternative is specified such that a mandatory VMS requirement is enacted coast-wide, and contains the fewest possible exemptions. All vessels active in the Maine ocean quahog fishery are required to install VMS. A power-down exemption is granted to vessels while moored or docked in the MMQZ. The call-in requirement is rescinded for all vessels coast-wide.

### Alternative 3a Principal Regulatory Measures:

- All vessels with surfclam (SF 1) or ocean quahog (OQ 6) open access permits must install VMS or surrender the permit. If they wish to fish in future years, they may install VMS and reapply for the permit (these permits are currently "open access" which means that the permit can be relinquished and reapplied for without loss of eligibility for the permit).
- All vessels with Maine (Mahogany) Quahog limited access permits (OQ 7) must install VMS prior to departure for any ocean quahog directed fishing trip. The VMS unit must remain on for the remainder of the permit year unless otherwise exempted by another provision in this part (e.g. a power-down exemption). The permit will not be canceled for failure to install VMS so long as the vessel is not participating in the fishery. Penalties for directed ocean quahog fishing without a VMS may include forfeiture of the limited access OQ7 permit.
- Vessels required to use VMS under this alternative would be required to declare their intended fishing activity, via the VMS unit, prior to crossing the VMS demarcation line. Furthermore, the VMS unit required under this alternative must provide hourly position transmissions unless otherwise exempted.

- A power-down exemption is available under the following two scenarios:

1. The vessel has been issued a Maine Mahogany Quahog (OQ7) permit, is not in possession of any quahogs onboard the vessel, is tied to a permanent dock or mooring, and the vessel owner or operator has notified NMFS through VMS by transmitting the appropriate VMS power-down code, that the VMS will be powered down, unless required by other permit requirements for other fisheries to transmit the data at all times. Such a vessel must repower the VMS prior to moving from the fixed dock or mooring.
2. The vessel has been issued an open access ocean quahog (OQ6) permit, is operating in the Maine mahogany quahog zone (north of 43 degrees 50 minutes N. latitude), is not in possession of any quahogs onboard the vessel, is tied to a permanent dock or mooring, and the vessel owner or operator has notified NMFS through VMS by transmitting the appropriate VMS power-down code, that the VMS will be powered down, unless required by other permit requirements for other fisheries to transmit the data at all times. Such a vessel must repower the VMS prior to moving from the fixed dock or mooring.

In addition to the above scenarios a vessel would be permitted to power down its VMS unit if it met the following conditions:

- The vessel will be continuously out of the water for more than 72 consecutive hours, and the vessel signs out of the VMS program by obtaining a valid letter of exemption from the Regional Administrator.
- The vessel declares out of the fishery and VMS program for a minimum period of 30 consecutive days, and the vessel signs out of the VMS program by obtaining a valid letter of exemption from the Regional Administrator, the vessel does not engage in any fisheries until the VMS unit is turned back on, and the vessel complies with all conditions and requirements of said letter.

### **5.3.2 Alternative 3b) Mandatory VMS with an Exemption in the MMQZ**

*Description:* Mandatory VMS is required of all clam vessels EXCEPT those operating exclusively in the MMQZ. Vessels fishing under a Maine quahog limited access permit (OQ 7) are exempt from the VMS requirement. Vessels fishing exclusively in the MMQZ under the ITQ program are also exempt from the VMS requirement; however they must continue to follow the call-in requirements. The call-in requirement is rescinded for all vessels fishing outside the Maine zone. The need for VMS power-down exemptions is largely avoided under this alternative.

#### Alternative 3b Summary

This alternative creates a mandatory VMS provision with the greatest possible exemption for the Maine quahog fishery. Vessels fishing exclusively in the MMQZ are exempt from the VMS requirement regardless of whether they are utilizing a limited access Maine quahog permit (OQ 7) or an open access ocean quahog permit (OQ 6) under the ITQ program. The call-in requirement will be maintained for ITQ trips in the MMQZ, but can be rescinded for ITQ trips in all other areas.

A key benefit from this specification is that no loopholes are created in the VMS requirement from special power-down exemptions for the Maine fishery.



### Alternative 3b Principal Regulatory Measures:

- All vessels with surfclam (SF 1) open access permits must install VMS or surrender the permit. If they wish to fish in future years, they may install VMS and reapply for the permit.
- All vessels with ocean quahog (OQ 6) open access permits fishing under the ITQ program outside the MMQS must install VMS or surrender the permit. If they wish to fish in future years, they may install VMS and reapply for the permit. Vessels fishing with this permit under the ITQ program exclusively in the MMQZ are exempt from the VMS requirement; however they must follow the requirements of the call-in provision.
- Vessels required to use VMS under this alternative would be required to declare their intended fishing activity, via the VMS unit, prior to crossing the VMS demarcation line. Furthermore, the VMS unit required under this alternative must provide hourly position transmissions unless otherwise exempted.
- All vessels with Maine (Mahogany) Quahog limited access permits (OQ 7) fishing in the MMQZ are exempt from the VMS requirement.
- The call-in requirement is rescinded for all surfclam and ocean quahog trips taken outside the MMQZ.
- The Regional Administrator may withdraw the VMS exemption in the MMQZ in the future if it is determined that the conditions requiring the exemption no longer apply, or if VMS is required for the implementation of an electronic reporting program.
- A vessel required to have an operational VMS unit under this alternative would be permitted to power down its VMS unit if it met the following conditions:
  - The vessel will be continuously out of the water for more than 72 consecutive hours, and the vessel signs out of the VMS program by obtaining a valid letter of exemption from the Regional Administrator.
  - The vessel declares out of the fishery and VMS program for a minimum period of 30 consecutive days, and the vessel signs out of the VMS program by obtaining a valid letter of exemption from the Regional Administrator, the vessel does not engage in any fisheries until the VMS unit is turned back on, and the vessel complies with all conditions and requirements of said letter.

### **5.3.3 Alternative 3c) VMS Required on All ITQ Trips; Maine Limited Access Fishery is Exempted**

*Description:* Mandatory VMS is required of all clam vessels EXCEPT those operating under the Maine quahog limited access permit (OQ 7), which are exempt. Vessels harvesting surfclams or ocean quahogs under the ITQ program must comply with the VMS requirement, however a power-down exemption is granted to vessels while moored or docked in the MMQZ.

### Alternative 3c Summary

This alternative institutes a mandatory VMS requirement for ITQ program trips only.

### Alternative 3c Principal Regulatory Measures:

- All vessels with surfclam (SF 1) or ocean quahog (OQ 6) open access permits must install VMS or surrender the permit. If they wish to fish in future years, they may install VMS and reapply for the permit.
- Vessels required to use VMS under this alternative would be required to declare their intended fishing activity, via the VMS unit, prior to crossing the VMS demarcation line. Furthermore, the VMS unit required under this alternative must provide hourly position transmissions unless otherwise exempted.
- All vessels with Maine (Mahogany) Quahog limited access permits (OQ 7) fishing in the MMQZ are exempt from the VMS requirement.
- A power-down exemption is available under the following scenario:

The vessel has been issued an open access ocean quahog (OQ6) permit, is operating in the Maine mahogany quahog zone (north of 43 degrees 50 minutes N. latitude), is not in possession of any quahogs onboard the vessel, is tied to a permanent dock or mooring, and the vessel owner or operator has notified NMFS through VMS by transmitting the appropriate VMS power-down code, that the VMS will be powered down, unless required by other permit requirements for other fisheries to transmit the data at all times. Such a vessel must repower the VMS prior to moving from the fixed dock or mooring.

In addition to the above scenario a vessel would be permitted to power down its VMS unit if it met the following conditions:

- The vessel will be continuously out of the water for more than 72 consecutive hours, and the vessel signs out of the VMS program by obtaining a valid letter of exemption from the Regional Administrator.
- The vessel declares out of the fishery and VMS program for a minimum period of 30 consecutive days, and the vessel signs out of the VMS program by obtaining a valid letter of exemption from the Regional Administrator, the vessel does not engage in any fisheries until the VMS unit is turned back on, and the vessel complies with all conditions and requirements of said letter.

### **5.4 Alternatives Considered But Rejected**

At Framework Meeting 1 on October 11, 2006, two additional alternatives were considered that related to electronic reporting by vessels:

- 1) Electronic Reporting (only) without VMS
- 2) Electronic Reporting and VMS

At that meeting the Regional Administrator stated that the current regulations (at Section 648.7(b)(1)(i)) already provide her with the authority to authorize the electronic reporting of vessel trip information, but that the necessary infrastructure is not expected to be in place in the Northeast Region until 2008. Given these circumstances, she recommended that the electronic trip reporting alternatives be removed from this Framework document.

The Council accepted the Regional Administrator's recommendation, and then moved forward with more in-depth consideration of alternatives relating to VMS. A detailed description of the original concepts and objectives sought through the melding of VMS technology and electronic reporting is presented in Appendix 1: Verbatim excerpt from Amendment 13 (MAFMC 2003) related to VMS and electronic reporting.

## 6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND FISHERIES

### 6.1 Description of the Targeted Fishery Resource

#### 6.1.1 Description of the Fisheries

The best, most recent description of the fisheries for these two species can be found in Appendix 2: *Overview of the surfclam and ocean quahog fisheries and quota considerations for 2007.*

The bulleted summary points from Appendix 2 that relate to the fishery are included below:

##### Federal Surfclam Fishery

- In 2005 the industry harvested a total of 2.744 million bushels of surfclams, a decline of 12.5% relative to the prior year. This represented 81% of the 3.4 million bushel quota, and is the lowest harvest since 2000.
- Industry downsized that portion of the fleet harvesting surfclams from 35 vessels to 25 between 2004 and early 2006. Those surviving the purge included seven large, new vessels that were all built since 2000. Three of these vessels have been dedicated to the surfclam fishery, while the remaining four are fishing for ocean quahogs.
- The industry's move toward using larger vessels is reflected in an increase in the average number of bushels harvested per trip. In 2004 the average trip brought back 1,359 bushels (42 cages) to the dock; in early 2006 it had increased to 1,780 bushels (56 cages).
- The average ex-vessel price of a bushel of surfclams declined only 2.3% to \$11.10 in 2005; remarkable given the difficult market environment. Price competition may have lessened somewhat with the reduced operations at Eastern Shore Seafood. Prices ranged from a low of \$9.50 per bushel to a high of \$16.20, though most trips were reported within a narrower range of \$10.50 - \$13.00 per bushel.
- The total ex-vessel value of the 2005 Federal harvest was approximately \$30.1 million, down 14.5% from 2004. [Note that price and value statistics presented in this document are those reported by industry processors and dealers. Prior documents relied on values reported by vessels.]

##### Ocean Quahog Fishery - (Excluding Maine Fishery)

- Landings of ocean quahogs totaled 2.940 million bushels in 2005, a decline of 23% from the previous year, and the lowest level experienced in the past 24 years. The ocean quahog fishery has been affected by the same market forces that reduced the harvests of surfclams, however the impact was more severe because their value is roughly half that of surfclams. Industry would much rather lose the sale of a \$6.00 commodity than a \$12.00 commodity.
- Landings had been on a declining trend from 1992 to the year 2000, when the harvest of ocean quahogs was at its lowest level in two decades. Fully 30% of the 2000 Federal quota was left unharvested, as declining catch rates and higher fuel prices had reduced the profitability of harvesting ocean quahogs.

- In 2001 new life was breathed into the ocean quahog fishery, sparked by a sharp increase in ex-vessel prices and the improved efficiency of large, newly constructed vessels. Landings jumped 17%, followed by a 4.9% increase in 2002, and another 5.3% increase in 2003.
- In 2004 the ocean quahog fishery started into another decline as the effects of the coming glut in the market for clam meats started to be felt. As mentioned previously, industry elected to throw overboard sales of the lower-valued ocean quahogs first, and proceeded to jettison harvests of surfclams only when it became clear there was no other choice.
- In 2005 the impacts of the crisis were most strongly felt. Fully 55% of the ocean quahog allocation tags for that year were allowed to expire, and the quota left unharvested on the ocean floor. This was the largest percentage surplus on record, going back as far as 1979 when vessel logbook data started becoming comprehensive.
- Of the 5.333 million bushel quota for 2005, approximately 11,100 bushels were leased to the Maine fishery, and 2.940 million harvested by the industrial fishery outside of Maine.
- The average ex-vessel price of ocean quahogs decreased less than 1 percent from \$5.99 to \$5.95 per bushel. Prices ranged from a low of \$4.50 to a high of \$6.88 per bushel, with the vast majority reported at either \$6.00 or \$6.10. The total ex-vessel value of the 2005 Federal harvest outside of Maine was approximately \$17.5 million, down 24% from the 22.9 million value in 2004.

#### Maine Ocean Quahog Fishery

- The small-scale fishery for ocean quahogs in Maine provides a stark contrast to the industrial fishery that takes place off the coast of the mid-Atlantic states up to Massachusetts. Small vessels in the 35-45 ft range actively target smaller ocean quahogs for the fresh, half shell market in Maine. Most of the catch is trucked directly out of state and brings an ex-vessel price that ranges from \$28 - \$55 per Maine bushel.
- In 2005 the Maine ocean quahog fleet harvested a total of 100,115 Maine bushels, a 2% drop from the 102,187 bushels harvested in 2004 (Appendix Table 2). Of the total 2005 harvest, 89,020 bushels were taken from the 100,000 bushel quota for Maine, and 11,095 bushels were leased from the industrial ITQ fishery to the south.
- Reports from industry members in Maine indicate that the failure to harvest the full 100,000 bushel quota in the past two years was due to the combined impact of tightening markets and area closures due to PSP.
- Fleet LPUE has been on an increasing trend, in part due to the fleet regaining access to some productive areas when a PSP closure was lifted. Average LPUE climbed from 5.4 Maine bushels per hour in 2004 to 5.9 in 2005, and then jumped to 7.9 in early 2006.
- Average price per bushel declined slightly from \$39.42 to \$38.54 in 2005. The total value of the harvest was \$3.858 million, down 4.2% from 2004.

### **6.1.2 Status of the Stock**

Stock assessments have been recently developed for both of these species and were presented at the November 2006 SARC. These two assessments are based on the NEFSC clam survey of 2005. The results of these two peer reviewed assessments are being summarized currently and will be presented to the Council at the SAW in February 2007. These species were last assessed three years ago, after the 2002 survey and the status of both of these clam species was determined to be that they are not overfished and overfishing was not occurring. The preliminary results from the November 2006 SARC indicate that the two species are still both in fine condition and neither is overfished and that overfishing is still not occurring.

### **6.1.3 Stock Characteristics and Ecological Relationships**

Both surfclams and ocean quahogs are dioecious, although hermaphroditism has been reported in surfclams. Male and female clams and quahogs are identical in external appearance and histological sectioning and examination of gonads is the only sure way to determine gender.

Male and female surfclams reach sexual maturity during their second year, even though ripe gonads and some spawning activity may occur during their first year. Sexual maturity in ocean quahogs is reached by age eight for half the males and age 11 for half the females. No observations on fecundity of surfclams or ocean quahogs are available.

Spawning in surfclams has been reported to occur both during a single time and over multiple periods from mid July through early November. Within a bed of clams, spawning is probably a synchronous annual event. Water temperature is an important factor influencing initiation and time of spawning, and may influence the rate of gonadal ripening and number of major spawning periods per year. After eggs and sperm are broadcast, fertilization occurs in the water column above the spawning bed of clams.

Spawning in ocean quahogs occurs over a prolonged period from May through November with spawning activity being most intense from August through November. Multiple annual spawnings at both the individual and population level occur.

Eggs and larvae of both surfclams and ocean quahogs are planktonic, and water currents are important in determining eventual patterns of distribution and settlement for developing juveniles. Dispersal and redistribution of surfclams to other areas, through swimming and crawling activities and water currents, occur primarily during the larval stages.

Growth is not uniform over the year; temperature significantly affects surfclam growth, physiology, and behavior.

Great longevity is an interesting recent discovery about the ocean quahog. One probably lived for 225 years, making it the longest lived, slowest growing, bivalve yet known.

Surfclams and ocean quahogs feed on plankton and detritus. Feeding occurs when sea water is drawn in through and expelled from the siphons. This process is also related to respiration and excretion.

A variety of benthic organisms occur in the beds of surfclams and ocean quahogs. It is not known whether they may compete with the clams. Some of the effects of these species are to occupy space at the sediment surface, build tubes, crawl through the sediment, and cause bioturbation.

Surfclams are susceptible to several parasites, including the thigmotrich *Sphenophyra dosinae*, the cyclopoid copepod *Myocheres major*, a cestode of the genus *Echeneribothrium*, a nematode tentatively identified as *Paranisakiopsis pectinis*, and the hyperparasite haplosporidian *Urosporidium spisuli*. Protistan organisms, larval trematodes, larval cestodes, and tumors are among known parasites and diseases of marine commercial clams.

A full description of stock characteristics and ecological relationships of surfclams and ocean quahogs is presented in section 2.1.3 of Amendment 13 (MAFMC 2003) to the Surfclam and Ocean Quahog FMP. Additional information can be found in the SARC documents in Appendix 2.

## **6.2 Non-Target Species or Bycatch**

National Standard 9 requires Councils to consider the bycatch effects of existing and planned conservation and management measures. Bycatch can impede efforts to protect marine ecosystems and achieve sustainable fisheries, with all the benefits they provide. Bycatch can substantially increase the uncertainty associated with total fishing-related mortality, making it difficult to assess the status of stocks, set appropriate optimal yields (OY), define overfishing levels, and ensure that OYs are attained and overfishing levels are not exceeded. Bycatch may also preclude more productive uses of fishery resources. Bycatch is defined as fish that are harvested in a fishery but are not sold or kept for personal use. This includes the discard of whole fish at sea or elsewhere, including economic and regulatory discards, and fishing mortality due to an encounter with fishing gear that does not result in capture of fish (i.e., unobserved fishing mortality). Bycatch does not include any fish that are legally retained in a fishery and kept for personal, tribal, or cultural use, or that enter commerce through sale, barter, or trade. Bycatch does not include fish released alive under a recreational catch-and-release fishery management program. A catch-and-release fishery management program is one in which the retention of a particular species is prohibited. In such a program, those fish released alive would not be considered bycatch.

Wallace and Hoff (2004) described the fact that none of the management measures associated with this FMP should increase the minimal levels of bycatch. The surfclams and ocean quahogs are managed under an individual transferable quota (ITQ) management system that reduces the "race to fish" and therefore significantly reduces bycatch. Surfclam and ocean quahog fisheries are extremely clean, as evidenced by the past three clam surveys conducted by the Northeast Fisheries Science Center. Surfclams and ocean quahogs comprise nearly ninety percent of the total number of animals caught in these three surveys when "clappers" (empty clam shells) are counted with the live clams. The percentage of the two species collected alive in the scientific surveys was nearly eighty-five percent. Very few fish were caught in any year. During the 1,577 tows completed in the three surveys, there were only 210 fish caught, with the little skate making up over half the catch. Only Atlantic sea scallops, representing other commercially desirable invertebrates were caught at a level of one percent. Commercial clam vessels fish cleaner than the scientific survey gear which has a liner in the dredge to collect all animate and inanimate objects encountered. Commercial dredges do not have liners and have bars which are spaced several inches apart so as not to collect anything but the targeted surfclams and ocean quahogs. In fact, the processors reduce the payments to the vessels if large amounts of "things" other than the targeted clam resources are delivered to the plant.

### 6.3 Habitat (Including Essential Fish Habitat)

Amendment 12 (MAFMC 1999) identified and described essential fish habitat for surfclams and ocean quahogs in section 2.2.2. No new information exists that would provide the basis for changing the EFH identification and description that was developed in Amendment 12.

#### Surfclams

Juveniles and adults: Throughout the substrate, to a depth of three feet below the water/sediment interface, within Federal waters from the eastern edge of Georges Bank and the Gulf of Maine throughout the Atlantic EEZ, in areas that encompass the top 90% of all the ranked ten-minute squares for the area where surfclams were caught in the NEFSC surfclam and ocean quahog dredge surveys. Surfclams generally occur from the beach zone to a depth of about 200 feet, but beyond about 125 feet abundance is low.

#### Ocean quahogs

Juveniles and adults: Throughout the substrate, to a depth of three feet below the water/sediment interface, within Federal waters from the eastern edge of Georges Bank and the Gulf of Maine throughout the Atlantic EEZ, in areas that encompass the top 90% of all the ranked ten-minute squares for the area where ocean quahogs were caught in the NEFSC surfclam and ocean quahog dredge surveys. Distribution in the western Atlantic ranges in depths from 30 feet to about 800 feet. Ocean quahogs are rarely found where bottom water temperatures exceed 60 degrees F, and occur progressively farther offshore between Cape Cod and Cape Hatteras.

The prime habitat of surfclams and ocean quahogs consists of sandy substrates with no vegetation or benthic structures that could be damaged by the passing of a hydraulic dredge. In these "high energy" environments, it is thought that the recovery time following passage of a clam dredge is relatively short. Additionally, the overall area impacted by the clam fisheries is relatively small (approximately 100 square nautical miles), compared to the large area of high energy sand on the continental shelf. Any impacts to EFH are considered temporary and minimal (Wallace and Hoff 2005).

### 6.4 Endangered and Other Protected Resources

There are numerous species which inhabit the environment within the management unit of surfclams and ocean quahogs that are afforded protection under the Endangered Species Act of 1973 (ESA; i.e., for those designated as threatened or endangered) and/or the Marine Mammal Protection Act of 1972 (MMPA). Sixteen are classified as endangered or threatened under the ESA, while the remaining species are protected by the provisions of the MMPA. The Council has determined that the following list of species protected either by the ESA, the MMPA, or the Migratory Bird Act of 1918 may be found in the environment utilized by surfclams and ocean quahogs:

#### Cetaceans

Species	Status
Northern right whale ( <i>Eubalaena glacialis</i> )	Endangered
Humpback whale ( <i>Megaptera novaeangliae</i> )	Endangered
Fin whale ( <i>Balaenoptera physalus</i> )	Endangered



Blue whale ( <i>Balaenoptera musculus</i> )	Endangered
Sei whale ( <i>Balaenoptera borealis</i> )	Endangered
Sperm whale ( <i>Physeter macrocephalus</i> )	Endangered
Minke whale ( <i>Balaenoptera acutorostrata</i> )	Protected
Risso's dolphin ( <i>Grampus griseus</i> )	Protected
Pilot whale ( <i>Globicephala spp.</i> )	Protected
White-sided dolphin ( <i>Lagenorhynchus acutus</i> )	Protected
Common dolphin ( <i>Delphinus delphis</i> )	Protected
Spotted and Striped dolphins ( <i>Stenella spp.</i> )	Protected
Bottlenose dolphin ( <i>Tursiops truncatus</i> )	Protected
Harbor porpoise ( <i>Phocoena phocoena</i> )	Protected

### **Pinnipeds**

Harbor seal ( <i>Phoca vitulina</i> )	Protected
Gray seal ( <i>Halichoerus grypus</i> )	Protected
Harp seal ( <i>Phoca groenlandica</i> )	Protected
Hooded seal ( <i>Cystophora cristata</i> )	Protected

### **Sea Turtles**

<b>Species</b>	<b>Status</b>
Leatherback sea turtle ( <i>Dermochelys coriacea</i> )	Endangered
Kemp's ridley sea turtle ( <i>Lepidochelys kempii</i> )	Endangered
Green sea turtle ( <i>Chelonia mydas</i> )	Endangered*
Loggerhead sea turtle ( <i>Caretta caretta</i> )	Threatened

### **Fish**

<b>Species</b>	<b>Status</b>
Atlantic salmon ( <i>Salmo salar</i> )	Endangered

### **Birds**

<b>Species</b>	<b>Status</b>
Roseate tern ( <i>Sterna dougallii dougallii</i> )	Endangered

### **Critical Habitat Designations**

<b>Species</b>	<b>Area</b>
Northern right whale ( <i>Eubalaena glacialis</i> )	Cape Cod Bay and Great South Channel

\* Green turtles in U.S. waters are listed as threatened except for the Florida breeding population which is listed as endangered. Due to the inability to distinguish between these populations away from the nesting beach, green turtles are considered endangered wherever they occur in U.S. waters.

The status of these and other marine mammal populations inhabiting the Northwest Atlantic has been discussed in detail in the U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments. Initial assessments were presented in Blaylock et al. (1995) and are updated in Waring et al. (2002). The most recent information on the stock assessment of various marine mammals through 2004 can be found at: [http://www.nmfs.noaa.gov/pr/PR2/Stock\\_Assessment\\_Program/individual\\_sars.html](http://www.nmfs.noaa.gov/pr/PR2/Stock_Assessment_Program/individual_sars.html)

Three other useful websites on marine mammals are: <http://www.nmfs.noaa.gov/pr/recovery>, <http://spo.nwr.noaa.gov/mfr611/mfr611.htm>, and <http://www.nmfs.noaa.gov/pr/species/mammals>

The only gears used in the commercial clam fisheries are dry dredges in Maine and hydraulic dredges in southern New England and the mid-Atlantic. These gears are categorized as Category III in the 2006 List of Fisheries under the MMPA for the taking of marine mammals. ESA-listed cetaceans (e.g., right, humpback, fin, sei, sperm and blue whales) and other marine mammals are unlikely to be caught in or struck by gear used in the fishery given their size and/or speed in relation to the gear. Salmon belonging to the Gulf of Maine DPS of Atlantic salmon are also unlikely to be caught in clam dredge gear given that these fish are widely dispersed when they occur in ocean waters and are unlikely to occur on the bottom where clam dredge gear operates. Sea turtles have been known to be captured in and struck by scallop dredge gear. However, clam dredge gear differs from a scallop dredge in that it moves across the bottom more slowly and uses hydraulic pressure to disturb the sediment in front of the dredge. Given the differences between the clam and scallop dredges, sea turtles are not likely to be taken (caught or struck) by clam dredge gear. The habitat features identified in the designation of the Cape Cod Bay and Great South Channel Critical Habitat for right whales include copepods (prey), and oceanographic conditions created by a combination of temperature and depth that are conducive for calving and nursing. There is no evidence to suggest that operation of the surfclam and ocean quahog dredge gear has any adverse effects on the habitat features in the specific areas designated as right whale critical habitat.

## **6.5 Socioeconomic Environment**

A description of the current status of the surfclam and ocean quahog fisheries, participating vessels, and landings and value is presented in Appendix 2 - "Overview of the Surfclam and Ocean Quahog Fisheries and Quota Considerations for 2007" and briefly summarized above in Section 6.1. Dr. Bonnie McCay of Rutgers has best analyzed the ports and communities associated with the surfclam and ocean quahog fisheries for Amendment 13 (MAFMC 2003).

Communities from Maine to Virginia are involved in the harvesting and processing of surfclams and ocean quahogs. Ports in New Jersey and Massachusetts handle the most volume and value, particularly Atlantic City, Point Pleasant, New Bedford, and Cape May/Wildwood. There are also significant landings in Ocean City, Maryland, Warren, Rhode Island, and the Jonesport/Beals Island area of Maine. The Maine fishery is entirely for ocean quahogs, which are sold as shellstock for the half-shell market. The other fisheries are industrialized ones for surfclams and ocean quahogs, which are hand shucked or steam-shucked and processed into fried, canned, and frozen products. Processing plants are therefore major components of the fishery, and the communities in which they are found must be described as well as the port towns. Some of them meet the definition of "fishing community" found in the Sustainable Fisheries Act of 1996: "[t]he term "fishing community" means a community which is substantially dependent on or substantially engaged in the harvest 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." A thorough description (50+ pages) of the individual ports and communities can be found in Amendment 13.

## **7.0 IMPACTS OF THE ALTERNATIVES**

### **7.1 Targeted Fishery Resource**

All of the VMS alternatives are primarily technical in nature and will not result in any increase in fishing mortality for the two targeted resources or affect any current fishing practices. None of the alternatives is expected to result in significant negative or positive biological impacts to the surfclam or ocean quahog resource. The considered management measures for this Framework action only deal with vessel monitoring and therefore, the sustainability of either of the two species is not expected to be impacted.

### **7.2 Non-Target Species or Bycatch**

All of the VMS alternatives are primarily technical in nature and should not result in any increase in fishing mortality for bycatch or non-targeted resources or affect any current fishing practices. None of the alternatives is expected to result in significant negative or positive biological impacts to non-targeted species or bycatch. The considered management measures for this Framework action only deal with vessel monitoring and therefore, the sustainability of any non-targeted species is not expected to be impacted.

### **7.3 Habitat (Including Essential Fish Habitat)**

All of the VMS alternatives are primarily technical in nature and should not result in any increase in fishing mortality or current fishing practices that may impact habitat. None of the alternatives is expected to result in significant negative or positive impacts to habitat, including essential fish habitat. The considered management measures for this Framework action only deal with vessel monitoring and therefore, since there are no gear or additional effort changes associated, there should not be any adverse impacts to habitat.

### **7.4 Endangered and Other Protected Resources**

All of the VMS alternatives are primarily technical in nature and should not result in any increase in mortality or current fishing practices that may impact endangered or other protected resources. None of the alternatives is expected to result in significant negative or positive impacts to endangered and other protected resources. The considered management measures for this Framework action only deal with vessel monitoring. The final List of Fisheries for 2006 for the taking of marine mammals by commercial fishing operations under section 114 of the Marine Mammal Protection Act of 1972 list the surfclam and ocean quahog dredge fisheries as Category III. Species (fish and birds) other than marine mammals that may be protected may also be encountered by a clam dredge and will also not likely be impacted as the clam dredge moves across the bottom very slowly and uses hydraulic pressure to disturb the sediment in front of the dredge. Therefore, minimal interaction is expected between the surfclam and ocean quahog fisheries and endangered and protected species.

### **7.5 Socioeconomic Impacts**

#### **Current Vessel Participation in the Surfclam and Ocean Quahog Fisheries**

As of November 2006, a total of 62 vessels had reported participating in the 2006 Federal surfclam and ocean quahog fisheries off the Atlantic coast of the US. Twenty-five were operating in the artisanal

fishery for (mahogany) ocean quahogs off the coast of Maine, and 37 were industrial vessels participating in the ITQ program (only) portions of these fisheries outside of Maine.

Table 2 illustrates the fact that 47% of the fleet (29 vessels) already has VMS on board to comply with VMS requirements in other fisheries. This leaves a total of 33 vessels that would potentially be subject to a new VMS requirement instituted through this Framework action. Nineteen are in Maine, and 14 in the industrial fisheries outside of Maine.

Vessel Category	Using VMS	Not Using VMS	Total
Maine Artisanal Vessels	6	19	25
Non-Maine Industrial Vessels	23	14	37
<b>Total Vessels</b>	<b>29</b>	<b>33</b>	<b>62</b>

### VMS Costs

Vessel owners may currently choose from among three vendors that have VMS units certified by NERO for use in the fisheries off the Northeastern United States. "Boatrac" was the first vendor to offer units and service off the northeast, followed by "SkyMate" and most-recently "Thrane & Thrane." SkyMate is distinct in that it requires the addition of a ship-board computer or laptop for full functionality, while the Boatrac and Thrane & Thrane offerings could be considered more "all-in-one" units.

The costs of VMS systems are comprised of initial hardware and installation costs as well as monthly service (or subscription) charges that can vary with usage or the bundle of services purchased. Table 3 summarizes the fees charged by each vendor, and Table 4 summarizes the minimum power requirements for Boatrac and SkyMate.

Costs	Boatrac	SkyMate	Thrane & Thrane
Purchase Cost	\$2,995	\$1,599 + cost of PC	\$3,595 (Gold package)
Installation Cost	\$180-\$200	\$150+	\$180-\$200
Monthly Service Charges*	\$80-\$100 (1 or 2 polls/hour respectively)	\$25 to \$40 packages for 1 or 2 polls/hour, respectively)	\$45 (60-min reporting) \$60 (30-min reporting)
Maintenance Costs	\$25/month for extended lifetime warranty (basic warranty is 1 year)	Unknown, software upgrades free \$50 for firmware upgrades, \$350 for satellite communicator replacement outside of warranty	No additional monthly fees
*Costs could be greater, depending on additional messages.			
Information compiled by: NMFS Sustainable Fisheries Division, Gloucester, MA Current as of: 10/06/2006			

<b>Table 4. Minimum Power Requirements for VMS Units</b>			
<b>Specification</b>		<b>Boatracs</b>	<b>SkyMate</b>
Computer	Processor	N/A	400MHz Pentium II
	Operating System	N/A	Windows 98
	RAM	N/A	64 MB
	ROM	N/A	50 MB
Antenna		Unknown	137 MHz*
Power	Communicating	Unknown	60 milliamps
	Transmitting	5 amps continuous	2 amps for 1 second durations
	Monitoring	2.5 milliamps continuous	1 milliamp continuous
	Battery Life	2 days of positioning	3 days of positioning
*Can be adapted to use VHF antenna			
NOTES:			
1) SkyMate can operate at a mooring with less of a power drain than a bilge pump, however Boatracs would use more power.			
2) Both units may need a converter to adapt to different electrical system. This is a minor installation issue			
3) It is estimated that a Boatracs unit would drain an average battery pack in approximately 2 days, but a reliable estimate is difficult.			
Information compiled by: NMFS Sustainable Fisheries Division, Gloucester, MA			
Current as of: 10/06/2006			

The analysis of impacts presented in this section will utilize the current SkyMate system costs because it is the least expensive of the three that meets the requirements of this Framework action. Vessel owners are free to select any other certified system that they might find more beneficial to their overall needs. All of the VMS systems offer additional functionality such as: e-mail, fax, emergency SOS broadcasts, weather reports, fax, and other communication and information services.

The cost of a SkyMate system is estimated to be roughly \$3,150, broken down as follows:

1,599	SkyMate hardware and software
202	Installation (Est.)
149	One-Time Activation Fee
<u>1,200</u>	<u>Laptop Computer (Est.)</u>
<b>\$3,150</b>	<b>Total</b>

SkyMate's monthly service fee is estimated to be approximately \$30.00 to cover hourly position transmissions and the necessary fishery declarations. **The annual service fee total would equal \$360.**

#### Impacts of Alternative 1 - Status Quo

This alternative represents the current management regime and is the baseline against which all other alternatives will be compared. It would continue the "call-in" trip notification provision that is in effect for all ITQ program trips and contains no requirement to install VMS for any segment of the surfclam and ocean quahog fisheries.

Continuation of these policies would impose no new costs on the industry or government. The impacts of continuing the existing procedures would simply be the foregone benefits that would result from utilizing VMS. There are no direct financial impacts as a result.

### Impacts of Alternative 2a) Mandatory VMS Coast-wide (With No Exemptions for Active Maine Vessels)

This alternative places the greatest emphasis on the effectiveness and efficiency of enforcement, and provides little accommodation to the Maine quahog fishery for the additional implementation costs and difficulties that it would entail. All permitted vessels must install VMS or surrender the permit, unless it is a limited access Maine quahog permit that is not actively being fished. No special power-down exemption is created for Maine vessels that lack access to shore-side electrical service while moored or docked. With all vessels covered by VMS, the call-in requirement would be rescinded for all vessels coast-wide.

Calculation of the impacts on the industrial fleet operating outside the Maine zone under the ITQ program is straightforward.

#### **Industrial Vessels Outside Maine Quahog Zone**

Number of Vessels Required to Install VMS = 14

Initial Year VMS system and installation costs = \$3,150 x 14 vessels = \$44,100

Recurring annual service fees = \$360 x 14 vessels = \$5,040

None of the industrial vessels is docked at a facility that lacks shore-side electric service, so the requirement to keep a VMS unit continually powered on is not an issue.

Impacts on the Maine quahog fleet, however, are greater because this alternative lacks a power-down exemption to address the lack of shore-side electric power. Council staff conversations with Maine fishermen have confirmed Commissioner Lapointe's statement that there are no "slips" available in the Jonesport, Maine area that could provide shore-side electrical service.

Council staff inquiries of SkyMate personnel suggest that the simplest and lowest-cost solution to the problem would be a customized installation that includes an auxiliary battery to power the VMS while in port. SkyMate estimated that a solution costing on the order of \$400 - \$500 would enable the VMS unit to supply hourly location pings for approximately one month before the auxiliary battery would need to be recharged. The system could be configured such that the auxiliary battery would be recharged using the vessel's diesel engine; with approximately one hour of recharging enabling ten days of VMS operation.

The end result seems to be that a technical solution to the issue of powering a VMS unit continuously without shore-side power is available today and will simply require more money, time, and ingenuity to implement than a traditional VMS installation. For the purposes of this analysis, it will be assumed that a new VMS installation in Maine will cost \$500 more than for the rest of the fleet. Additionally, the 6 Maine vessels that already have VMS systems installed will be obliged to supplement them with an auxiliary battery in order to comply with the "always on" VMS requirement in this alternative.

#### **Maine Vessels Requiring a New, Customized VMS System**

Number of Vessels Required to Install VMS = 19

Initial Year VMS system and installation costs = \$3,650 x 19 vessels = \$69,350

Recurring annual service fees = \$360 x 19 vessels = \$ 6,840

### **Maine Vessels with Existing VMS Systems Requiring an Additional, Auxiliary Battery**

Number of Vessels Requiring Additional, Auxiliary Battery = 6

Total, Initial Year Costs of adding Aux. Battery = \$500 x 6 vessels = \$3,000

Summing together the costs described above yields the following **total costs** to industry for this alternative:

Industrial & Maine Fleet VMS & Installation Costs = \$44,100 + \$69,350 + \$3,000 = \$116,450

Industrial & Maine Fleet Recurring annual service fees = \$5,040 + \$6,840 = \$11,880

The Federal government would be relieved of the expenses to maintain the call-in requirement, which includes both hardware, phone service and personnel costs to monitor the calls that have been received. Some additional costs would be borne by adding 33 vessels to the pool that must be monitored using VMS systems. For the purposes of this analysis it will be assumed that there is a small net cost savings to the government from transitioning over to VMS monitoring from the call-in system.

### Impacts of Alternative 2b - Preferred) Mandatory VMS Coast-wide; Maine Mahogany Quahog (OQ 7) Limited Access Vessels Granted 1-Year Deferment

This alternative is identical to Alternative 2a above, with the only difference being that vessels fishing under a Maine Mahogany Quahog (OQ7) limited access permit are given the option of delaying the purchase of VMS equipment for an additional year.

Assuming that the 19 vessels currently fishing under Maine quahog limited access permits do delay the purchase of VMS for a year, they would each save the \$360 annual service fee for that first year. Additionally, they could leave the VMS purchase and installation amount of \$3,650 invested elsewhere and earn approximately 5% in interest.

However these savings would be offset to some extent by the fact that each vessel would not be receiving the benefits of the additional safety and communication services that VMS units offer. For the purposes of this analysis, then, the reduced costs and foregone benefits will be considered as cancelling one another out, and the compliance costs of this alternative will be assumed to equal those of Alternative 2a above.

Therefore, the **total compliance costs** for all vessels under this alternative that do not already have VMS installed for another fishery are:

Industrial & Maine Fleet VMS & Installation Costs = \$44,100 + \$69,350 + \$3,000 = \$116,450

Industrial & Maine Fleet Recurring annual service fees = \$5,040 + \$6,840 = \$11,880

As described in Alternative 2a above, the Federal government would be relieved of the costs of maintaining the call-in system, and incur some small additional costs by adding 33 vessels to the pool that are monitored using VMS. The only difference is that the 19 vessels fishing under the limited access Maine quahog permit would be added one year later than the rest. For the purposes of this analysis it will again be assumed that there is a small net cost savings to the government from transitioning over to VMS.

### Impacts of Alternative 3a) Mandatory VMS Coast-wide with Power-down Exemption in Maine Quahog Zone

This alternative would require that any vessel active in the surfclam or ocean quahog fisheries install VMS. Vessels with limited access Maine quahog permits that are not currently fishing would not be required to install VMS until they choose to reenter the fishery.

Currently there are 33 vessels active in the 2006 fishery that do not have VMS units installed. The total costs for them to comply with the requirements of this alternative would be:

#### **Active Vessels Currently Fishing Without VMS Coast-wide**

Number of Vessels Required to Install VMS = 33

Initial Year VMS system and installation costs = \$3,150 x 33 vessels = \$103,950

Recurring annual service fees = \$360 x 33 vessels = \$ 11,880

Impacts on the Federal government would be similar to those described in Alternatives 2a and 2b in that savings would accrue from retiring the call-in system and an additional cost would result from adding 33 vessels to the VMS monitoring pool. It should be noted, however, that granting a special power-down exemption to the Maine fleet will result in a reduction in the enforcement value of VMS and generally increase the amount of time spent by the government in resolving issues related to VMS program operation.

### Impacts of Alternative 3b) Mandatory VMS with an Exemption in the Maine Quahog Zone

This alternative would exempt vessels operating exclusively in the Maine Mahogany Quahog Zone (MMQZ) from the VMS requirement, regardless of whether they are fishing under a limited access Maine quahog permit (OQ 7) or the open access ocean quahog permit (OQ 6) using ITQ allocation.

This would result in only the industrial fleet being required to install new VMS systems. Currently there are 14 vessels in this group.

#### **Industrial Vessels Outside Maine Quahog Zone**

Number of Vessels Required to Install VMS = 14

Initial Year VMS system and installation costs = \$3,150 x 14 vessels = \$44,100

Recurring annual service fees = \$360 x 14 vessels = \$5,040

Vessels fishing in the MMQZ under the ITQ program would still be required to follow the call-in requirements. The call-in requirement in all other areas could be rescinded.

For the purposes of this analysis, it is assumed that the cost savings to the government from removing the call-in requirement outside of Maine is roughly equivalent to the cost increases from monitoring these additional vessels through the VMS system.

### Impacts of Alternative 3c) VMS Required on All ITQ Trips; Maine Limited Access Fishery is Exempted

This alternative would require only the vessels fishing under the ITQ program to use VMS, regardless of whether they are fishing in the MMQZ or in the industrial fishery to the south. Coast-wide, this corresponds to 14 industrial vessels that do not already have VMS. As it happened, there were four



vessels in Maine that participated in the ITQ program; however, all of them already have VMS systems installed.

This alternative addresses the issue of supplying power to the VMS units while moored or docked in Maine by granting them a power-down exemption.

**Vessels in ITQ Program that Don't Already Have VMS**

Number of Vessels Required to Install VMS = 14

Initial Year VMS system and installation costs = \$3,150 x 14 vessels = \$44,100

Recurring annual service fees = \$360 x 14 vessels = \$5,040

It is assumed that the Federal government would experience a modest cost savings under this alternative from retiring the call-in system while adding 14 vessels to the VMS monitored pool. The four vessels currently making ITQ trips off Maine would be allowed the special power-down exemption.

Summary Table of Estimated Compliance Costs Across All Alternatives

<b>Table 5. Summary of Estimated VMS Compliance Costs Across All Alternatives for All Affected Vessels</b>		
<b>Alternative</b>	<b>Initial Year VMS &amp; Installation Costs</b>	<b>Recurring Annual Service Fees</b>
1) Status Quo	\$0	\$0
2a) Mandatory VMS Coast-wide (With No Exemptions for Active Maine Vessels)	\$116,450	\$11,880
<b>2b - Preferred) Mandatory VMS Coast-wide; Maine Mahogany Quahog (OQ 7) Limited Access Vessels Granted 1-Year Deferment</b>	\$116,450	\$11,880
3a) Mandatory VMS Coast-wide with Power-down Exemption in MMQZ	\$103,950	\$11,880
3b) Mandatory VMS with an Exemption in the MMQZ	\$44,100	\$5,040
3c) VMS Required on All ITQ Trips; Maine Limited Access Fishery is Exempted	\$44,100	\$5,040

Note that the estimated compliance costs of Alternatives 3b) and 3c) are the same, in spite of the fact that Alternative 3c) covers 4 additional vessels that take ITQ trips in Maine. VMS costs are excluded for those vessels because they already have active VMS systems installed.

**7.6 Cumulative Impacts of Proposed Alternatives**

Cumulative effects are defined under NEPA as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other action (40 CFR section 1508.7).” A formal cumulative impact assessment is not necessarily required as part of an Environmental Assessment under NEPA as long as the significance of cumulative impacts has been considered (U.S. EPA 1999). The following remarks address the significance of the expected cumulative impacts as they relate to the Federally-managed surfclam and ocean quahog fisheries.

## Past Actions

Table 1 in Section 4.1 provides a summary of the management actions taken in the surfclam and ocean quahog fisheries back to the original FMP in 1977. Quotas in both fisheries were introduced at the start, as well as vessel logbook reporting requirements. A moratorium on new vessels and effort limitations were also included for the surfclam fishery in the original FMP.

These were the primary management tools that governed the fisheries for the following 13 years. Other measures related to cage tags, a minimum size limit for surfclams, and distinct management areas were introduced in the interim, however the measures that had the greatest impact on the fishery and the resources themselves continued to be the quotas, effort limitations and the moratorium on new entrants in the surfclam fishery.

The surfclam resource was recovering during this period following an anoxia event that wiped out a substantial portion of the stock off New Jersey in 1976, as well as heavy fishing pressure that had depleted the resource at the southern end of its range. As the surfclam biomass increased, effort limitations had to be tightened in order to keep the harvests below the annual quota. With catch rates increasing, the number of trips and allowed hours of fishing for each vessel had to be ratcheted down.

Unfortunately, effort management was forcing the industry to operate very inefficiently. In the final period before ITQ management was implemented in 1990, each vessel was allowed to make only 6 surfclam trips each year, and deploy its gear for no more than 6 hours on each trip. A much larger fleet had to be maintained than was actually required to harvest the annual surfclam quota. Profitability in the harvesting sector increased substantially with the introduction of individual transferable quotas in 1990. Within two years the number of vessels harvesting surfclams in Federal waters had been cut in half, and the average annual catch per boat doubled.

The cumulative impacts of past actions may also be represented by the cumulative landings that have occurred in each fishery since the initiation of management. The following figures include landings reported in Federal vessel logbooks since 1979, which is the first year in which landings data from the newly-initiated logbook program were comprehensive:

### **1979 - 2006 Cumulative Landings**

Surfclams	75.0 million bushels
Ocean Quahogs	111.5 million bushels
Maine Ocean Quahogs*	1.2 million Maine bushels (1991 - 2006 only)

\*Maine vessels started submitting landings reports in the Federal shellfish logbook in 1991

### **The Introduction of Management to the Small-Scale Maine Ocean Quahog Fishery**

*The following overview of the Maine ocean quahog fishery and its introduction to management was first published in Amendment 13 (MAFMC 2003) and was developed by Dr. Bonnie McCay of Rutgers University.*

The ocean quahog fishery of Maine occurs north of 43° 50'. The fishery is located in the region of Downeast Maine, which includes both Hancock and Washington counties but is primarily concentrated in Washington County in the town of Jonesport and on nearby Beals Island.

The Maine fishery differs markedly from the large-scale industrial EEZ ocean quahog fishery that occurs principally south of Georges Bank (Amendment 10 to the Fishery Management Plan for Atlantic Surfclam and Ocean Quahog Fisheries 1997). The typical vessel in the Maine ocean quahog fishery is a lobster-style hull ranging between 30 and 40 feet in length, far smaller than the 75-120 foot vessels used in other ocean quahog fisheries. The quahogs are harvested with a small dry dredge (limited to maximum of 36" by state regulation). Unlike the industrial fishery, the Maine fishery targets small clams in the range of 1 ½ to 2 ½ inches. The quahogs are destined for the half-shell market rather than a processed product. Ocean quahogs are a golden-brown or "mahogany" color when found at these small sizes; therefore, in Maine they are often referred to as mahogany quahogs. This species, *Arctica islandica*, should not be confused with the hard clam, *Mercenaria mercenaria*, which is also referred to as "quahog" in New England.

The Maine ocean quahog fishery originally began in state waters in the 1970s as a summer supplemental fishery. However, starting in 1987, several areas in state waters have been closed due to paralytic shellfish poisoning (PSP). The fishery now occurs primarily in Federal waters. It was not until 1990 that the Maine "mahogany" quahog fishery was discovered to be harvesting the same species in Federal waters that is managed by the Mid-Atlantic Fishery Management Council through the Fishery Management Plan for Atlantic Surfclams and Ocean Quahogs. Between 1990 and 1997, the fishery was granted experimental status by the Regional Administrator until a suitable plan could be developed. In 1996, 82 vessels were licensed to participate in the EEZ experimental fishery.

Amendment 10 of the FMP (1997) established a moratorium on new entrants into the Maine EEZ fishery and established a Maine allocation of 100,000 bushels, to be managed separately from the rest of the ocean quahog stock. This quota is fished competitively by the limited number of federally permitted vessels with a special Maine EEZ quahog permit. State landings also count against the quota. Once this collective quota has been reached, the fishery is shut down. Participants can lease additional quota from individuals or companies holding ITQ shares in the Mid-Atlantic region. Other vessels that do not hold the special Maine EEZ quahog permit but hold a State of Maine permit can fish in the Maine Territorial Sea in areas not closed to fishing due to PSP or "red tide" concerns. In addition, vessels lacking the special Maine EEZ permit can participate in the Federal fishery if they lease or purchase allocation from the Mid-Atlantic ITQ holders.

These past actions in the Maine mahogany quahog fishery have resulted on a cap of about 52 vessels permitted in the fishery. Of these 52 vessels only about half (25 vessels) were active in the fishery in 2006. Thus, those involved in the Maine mahogany quahog fishery maintain a fairly stable landing rate throughout the fishing year (e.g.; there is no derby-style race to fish). However, new entrants are allowed in the fishery under the ITQ fishery which has the potential to destabilize the steady supply during the fishing year.

### Present Actions

Present actions that have impacted the environment in which surfclams and ocean quahogs are harvested are primarily:

- 1) Changes in the market demand for surfclams and ocean quahogs
- 2) Area closures for PSP
- 3) Harvest quotas

Market forces have had a significant impact on the ITQ portion of the fisheries. As described in Section 6 and the Mid-Atlantic Council publication 'Overview of the Surfclam and Ocean Quahog

Fisheries and Quota Considerations for 2007' (MAFMC 2003), recent landings peaked in 2003 and had dropped substantially by 2005. Industry participants reported that major buyers of clam meats significantly reduced their purchases, most notably the Campbell's soup company. This resulted in a build-up of inventories and subsequent orders and in vessels cutting back on harvests. It was noted that imports of canned meat from Canada and frozen meats from Asia exacerbated the market saturation. In 2006, there are indications that the glut has started to recede, with landings of surfclams increasing slightly. Furthermore in Maine, some industry contacts have reported that their market is currently 'depressed' as aggressive price competition has driven down prices somewhat.

The areas closed due to the presence of PSP were increased dramatically on June 14, 2005, when new closures were announced off the coast of Maine, New Hampshire, and Massachusetts. However, some of the areas have since reopened. As recently as December 28, 2006, NMFS announced that a large expanse of area off New Hampshire and Massachusetts would remain closed to the harvest of all bivalve mollusks and that a large area off southern New England would remain closed to the harvest of whole and/or roe on scallops (<http://www.nero.noaa.gov/nero/hotnews/redtide>).

The State of Maine maintains a year-round monitoring program for PSP and selectively allows fishing to proceed in only those areas that have been demonstrated to be safe. The areas available to the artisanal ocean quahog fishermen were recently expanded. Full details on the current status can be found at: [http://www.maine.gov/dmr/rm/public\\_health/closures/pspclosures.htm](http://www.maine.gov/dmr/rm/public_health/closures/pspclosures.htm).

The effects of weather and increasing ocean temperatures may be playing a role in both the prevalence of PSP and a reduction in surfclam biomass in the inshore and southern portions of the range. New stock assessments of both surfclams and ocean quahogs will be available in early 2007 which should clarify the issue.

Finally, the Federal quotas for surfclams and ocean quahogs place a cap on total annual harvest levels. However, these harvest limits have not been constraining on the ITQ fisheries over the past several years due to the limited market.

#### Reasonably Foreseeable Future Actions

There are two actions that can reasonably be expected to occur in the next few years following this action. The first is the setting of a new 3-year series of quotas in 2007 that will pertain to the 2008, 2009, and 2010 fishing years. The quota decisions are not interrelated with this VMS action in any way.

The second is the anticipated migration to vessel electronic reporting from paper logbooks in 2008. This action requiring VMS may well reduce the future costs of implementing electronic reporting, since VMS can serve as a vehicle for reporting landings.

#### **7.6.1 Cumulative Effects of the Proposed / Preferred Action**

As described in previous sections, this Framework action involves only administrative aspects of the fishery management program for surfclams and ocean quahogs. The sole purpose is to specify the conditions under which participating vessels will be required to install and operate a Vessel Monitoring System. The only impacts resulting from the present action will be to the human community, i.e. the economic costs of installing and operating a VMS unit. The following discussion will demonstrate that the impacts are miniscule for the industrial fleet and very minor and short-lived for the artisanal Maine ocean quahog fleet.

## **2005 Surfclam and Ocean Quahog Fisheries Outside of Maine**

Surfclam fishery ex-vessel value = \$30.1 million

Ocean Quahog fishery ex-vessel value = \$17.5 million

Combined value = \$30.1 + \$17.5 = \$47.6 million

Total Non-Maine vessels = 48

Ave. gross revenue per vessel = \$992,000

VMS Year 1 Total Costs = \$3,150 hardware & installation + \$360 Annual fee = \$3,510

VMS Year 1 Costs as a percentage of Annual Revenue =  $\$3,510 / \$992,000 = 0.35\%$

VMS Year 2 Costs as a percentage of Annual Revenue =  $\$360 / \$992,000 = 0.036\%$

The above series of statistics show that the combined ex-vessel value of the Federal surfclam and ocean quahog fisheries outside of Maine equaled \$47.6 million in 2005. This revenue was generated from the harvests of 48 vessels. The average gross revenue per vessel in 2005 was \$992,000.

For the first full year of operation, the cost of VMS installation and operation for these vessels is approximately \$3,510. As a percentage of gross revenue, which totals almost \$1 million per vessel, this charge amounts to a miniscule 0.35%. The recurring annual subscription charge of \$360 is a barely-noticeable 0.036%.

## **2005 Maine Ocean Quahog Fishery**

Total ex-vessel value of harvest = \$3.858 million

Total Maine vessels = 32

Ave. gross revenue per boat = \$121,000

VMS Year 1 Total Costs = \$3,650 hardware & installation + \$360 Annual fee = \$4,010

VMS Year 1 Costs as a percentage of Annual Revenue =  $\$4,010 / \$121,000 = 3.31\%$

VMS Year 2 Costs as a percentage of Annual Revenue =  $\$360 / \$121,000 = 0.30\%$

Similar calculations for the artisanal Maine ocean quahog fleet indicate that the Year 1 costs would equate to approximately 3.3% of the gross revenue for the average vessel. However, this impact would be diminished by the fact that the majority of vessels in the Maine fleet also participate in other fisheries; the most significant being the high-value lobster fishery. Hence, the Year 1 VMS costs as a percentage of revenue from all fisheries that Maine vessels participate in is likely to be a manageable 2% or less. The recurring charge of \$360 per year equates to only 0.30% of the ocean quahog revenue.

## Additional Information on the Maine Ocean Quahog Fishery and Jonesport Area

*The following information was first published in Amendment 13 (MAFMC 2003) and was developed by Dr. Bonnie McCay of Rutgers University.*

Approximately 76 percent of the federally-permitted Maine vessels that landed ocean quahogs in 2000 listed addresses in the towns of Addison, Beals Island, and Jonesport. The remaining vessels came from Machiasport, Roque Bluffs, Steuben, Winter Harbor, Columbia Falls, Harrington, and Cutler. In 2000, over two-thirds of the ocean quahogs were landed in Jonesport. Other towns with recorded landings in 2000 were Steuben, Addison, South Addison, Eastern Harbor, Beals Island, and Bucks Harbor.

Official statistics and published data on this fishery do not exist beyond permit lists and aggregate landings reports. Based on interviews done in November 2001, it seems that typical vessels are owner-operated. However, some individuals own up to four ocean quahog boats. Some vessels are owned by

dealers who hire captains to operate them. In general, each vessel has a crew of 3-4 men (including the captain). The crewmembers are generally hired locally. Some crewmembers come and go, while others have fished for the same boat (or boat owner) for several years. In general, vessel owners do not have trouble finding good crew, but some report that when they find good, reliable crew, they do what they can to keep them. Many vessels also participate in other fisheries such as lobster, scallops, mussels, urchins, and periwinkles. Several vessels rely solely on quahogs, often because they do not hold permits in other fisheries.

In 2000, nine dealers purchased quahogs. As expected, most of the dealers are located in or around Jonesport and nearby Beals Island. Other dealers purchasing ocean quahogs in Maine listed addresses in Machias, Cushing, Stonington, Brooklin, and Bucks Harbor. In general, dealers tend to rely on a few "core" vessels and purchase from other vessels on a sporadic basis. Owning vessels is another strategy utilized by several dealers. This ensures them a continuous supply to send to their markets. Most dealers also buy and sell a variety of other fishery products, such as lobsters, scallops, mussels, soft-shell clams, crabs, and periwinkles. Some companies handle only ocean quahogs. Generally, each dealer employs between 1-3 individuals, in addition to vessel crew.

Generally, the Maine ocean quahog is destined for the fresh, half-shell market. The quahogs, therefore, are also trucked to markets, mostly outside of Maine. Some of the quahogs are sent to other dealers in Maine, but most are shipped out of state directly. Several dealers send trucks to different ports to pick up quahogs. There are several local trucking companies that ship the quahogs to market, and some dealers also own their own trucks.

In Jonesport, which is the center of the fishery, there are four main wharves that handle ocean quahogs, including the public marina. However, several of these simply represent space leased out to vessel owners. The vessel owners hire their own crew and independently handle their own operations. Other vessel owners moor their vessels in other ports and land their vessels at the wharves utilized by the dealers to whom they sell.

In 1997, over half the federally permitted vessels from Washington County listed addresses in Jonesport, Beals and Addison. In addition, the area boasts at least one source of each of the services needed by the local fishing industry. However, the local inhabitants are neither insulated from change nor trapped in an isolated outpost (Hall-Arber et al. 2002).

According to the 2000 Census for Jonesport, the population was 1,408. In 2000, 97.8% of the population was white. In 2000, 21% of the population was under 18 years of age, and 22.7% of the population was 65 years of age or older. Of the vacant housing units in Jonesport, 6.4% were used for seasonal, recreational, or occasional use.

The fishermen of Beals-Jonesport and Addison are now taking advantage of the wealth of lobsters by landing them year-round, although the greatest landings are in the fall. Quahogs, crabs, clams, scallops, and urchins are also actively fished.

Change is evident in the support sector. Boat building is a family tradition in the Jonesport/Beals Island area. When lobster boats were wooden, the traditional form evolved out of those boats built in this area. Generations of fishermen were also boat builders. Some names are famous, and their boats recognizable. Now boat builders have switched to fiberglass, but they continue to build or finish boats in the winter.

Despite the small size of this area's population, it is by no means economically homogenous. Some of the fishing families, who are descendents of several generations of fishermen, are doing very well financially. Several have diversified their activities so that they can fish different species (some hiring captains to take out additional vessels) or have vertically integrated so that they obtain additional value for their catch by packaging and/or freezing, marketing, and trucking it as part of the family's business. These fishing families also tend to have economic capital links that extend well beyond Beals-Jonesport-Addison.

Other fishing families maintain a more modest standard of living. Such fishermen tend to own and operate their own vessel, fish smaller numbers of traps, and are less likely to have diversified into various forms of mobile gear fishing. Their economic capital links are more likely to be less diversified and closer to home than are those of the larger-scale fishing families.

While there is some rancor evident in discussions between the small-scale and larger-scale fishermen, there are unifying forces as well. The social capital and human capital links crosscut the economic differentiation. For example, high school sports, especially basketball, create one of the strong bonds among families in the area.

Also uniting the different fishing families is a concern about their children or grandchildren's ability to continue in fishing. While some say that it is too hard to make a living in fishing now and the regulations constrain choices too much, all key informants who fish love their occupation and would have liked to have been able to encourage their children to continue the tradition. In most cases, though, children are being encouraged to pursue an education and jobs out of the industry. This creates another worry. Since there are few jobs in the area that are not dependent on the fishing industry, families must face separation.

Finally, another concern expressed by many of the families is the potential effect of an influx of people "from away." Real estate prices are beginning to reflect a greater demand and some fear the consequences.

#### Support services

A Jonesboro trucking company transports frozen seafood for local processors. Fish is offloaded and sold in Jonesport or in Portland and lobsters in both Beals and Jonesport; fuel and air (for divers) is available in Jonesport; boat repair is locally available; and fishing gear is available in both Beals and Jonesport. Bookkeeping is often done by spouses, but some consult accountants in Bangor for income tax filing.

#### Employment (year-around and seasonal)

While estimates varied about the numbers of fishermen, it was generally agreed that 50 to 75 percent of the people in the area are directly dependent on the industry, and the rest are indirectly dependent on the industry. "If fishermen don't do well, no one does well." Informants estimated there are 1,000 fishermen in the Downeast region (1999) (Hall-Arber et al. 2002).

Off-season jobs may include carpentry, boat building, welding, mechanics, fin fishing, digging for clams or "winkles," blueberry and/or cranberry-picking, wreath-making, and snow-blowing. Security guard work, teaching and nursing are alternative occupations. A few people go into Ellsworth to work (over 50 miles). The Columbia Falls radar station employs some people, and services such as grocers, automobile sales, a bowling alley and movie theaters provide additional employment.

## Species and seasons

Although there are lobster landings year round, landings tend to peak in October, with large volumes also in September and November. Ocean quahog fishing occurs year round. Quahog landings in Beals are greatest in May and June, with significant volumes in January through March. Digging clams or marine worms is common in spring, summer, and fall. In the fall and winter, picking periwinkles off the ledges, dragging for scallops, diving for urchins, and keeping lobster pounds provides fishing and/or fishing-related income.

Federal data for Jonesport show landings of rock crab, lobster, ocean quahog, periwinkles, sea scallops, urchins, and a small quantity of groundfish. "Winkles" (periwinkles) are sold in town to a buyer who transports them to Boston or New York. Ultimately, they are sold as "bar food."

Pollock was the principal groundfish landed before marine mammal protection measures forced gillnetters to change gear and before the market shifted in 1996 and supply contracts to the US government shifted to the West Coast (Sheehan and Moore 1998). However, cod, white hake, haddock and cusk were also regularly caught.

Of the approximately 52 limited access Maine mahogany quahog permitted vessels, it is anticipated that only 19 vessel owners would need to purchase a VMS under the preferred alternative relative to the status quo. Approximately 6 vessel owners would need to keep their VMS units on for 24 hr per day as opposed to turning the VMS units off at night. As previously stated, these requirements are anticipated to result in an approximately 3.3% reduction in revenue in the first year of implementation and a 0.3% reduction in revenue in the following years. A 3.3% reduction in revenue results in estimated annual revenues of \$117,000. The 2007 Federal poverty guidelines place annual revenue of \$20,650 for a family of four as the poverty threshold. With revenue estimated to be 5.6 times the 2007 poverty threshold, it is not anticipated that the preferred alternative, in addition to past, present, and reasonably foreseeable future actions, will likely result in any long-term, or cumulative impacts to the Jonesport, ME fishing community as described by Hall-Arber et al. in 2002.

### 7.6.2 Conclusions

The major feature that varies among alternatives is simply whether or when a VMS requirement is imposed on a particular segment of the coast-wide fleet.

The preferred alternative is 2b, which would require:

- 14 industrial vessels (outside of Maine) to install new VMS systems in Year 1
- 6 Maine vessels with existing VMS systems to install an auxiliary power source in Year 1
- 19 Maine vessels to install new, customized VMS systems with an auxiliary power source in Year 2

National Standard 8 requires that management measures take into account fishing communities. The ports and communities that are dependent on surfclams and ocean quahogs are fully described in Amendment 13 to the Surfclam and Ocean Quahog FMP (section 3.4.2), and information on the smaller, more sensitive Maine communities is reproduced here.

The economic impacts that are anticipated from the proposed action are described in Section 7.5, and the relative economic impacts are detailed above in Section 7.6. Again, special attention was paid to the artisanal fishing communities that will be affected in Maine. In fact, a major emphasis of this



Framework action itself is an effort to minimize the economic impacts on these artisanal fishing communities, with four alternatives dedicated to providing either a deferment or exemption to various VMS requirements.

The majority of the compliance costs of VMS implementation will be felt in the initial year for that is when the capital outlays are made for hardware and the installation of the systems themselves. Recurring annual service fees are minor, being on the order of \$360 per vessel per year. Hence, it is not anticipated that significant cumulative impacts will result over time from implementation of any of the alternatives described in this Framework action. No changes in fishing methods will result; no changes to the resource will result; and no changes in bycatch will result. The only outcome from implementation of this framework action is the installation of a new piece of equipment on fishing vessels and the associated costs and benefits that are associated with that event.

Therefore, the proposed action, together with past, present, and future actions is not expected to result in perceptible cumulative impacts on the human environment, individually, or in conjunction with other anthropogenic activities.

## 8.0 ESSENTIAL FISH HABITAT ASSESSMENT

The Sustainable Fisheries Act (SFA) of 1996 significantly altered the requirement of FMPs to address habitat issues. The SFA contains provisions for the identification and protection of habitat essential to the production of Federally managed species. The Act requires FMPs to include identification and description of essential fish habitat (EFH), description of non-fishing and fishing threats, and to suggest conservation and enhancement measures. These new habitat requirements, including what is known about clam gear impacts to the bottom, were addressed in Amendment 12 (MAFMC 1999) and in Amendment 13 (MAFMC 2003).

The Council assumed the panel of experts assembled at the fishing gear workshop in October 2001 provided the best synthesis of the existing scientific knowledge and the best management recommendations. The workshop panel concluded that the habitat effects of hydraulic dredging were limited to sandy substrates, since the gear is not used in gravel and mud habitats (MAFMC 2003). Two effects -changes in physical and biological structure – were determined to occur at high levels. The evidence cited for these two effects was a combination of peer-reviewed scientific literature, gray literature, and professional judgment. There are no effects of hydraulic dredges on major physical features in sandy habitat because, in the panel's view, there are no such features on sandy bottom. Panel members evaluated changes to benthic prey as unknown.

Dr. William DuPaul (VIMS) led the discussion at the fishing gear impacts workshop on the types of management actions that could be taken to minimize adverse impacts of hydraulic dredging to benthic habitat. The following two paragraphs are taken from that report (Appendix 4 of MAFMC 2003).

The effectiveness of the Individual Transferable Quota (ITQ) management program since 1990 and the opinion that the two resources are underfished, led the panel to conclude that reductions in effort are probably not practicable. Nor is it likely that gear substitutions or modifications are practical since the current gear is highly efficient at harvesting clams. Therefore spatial area management seems to be the only practicable approach to minimizing gear impacts, if necessary.

It was emphasized that hydraulic dredges are designed to operate in sandy substrate. This gear could be very destructive if fished in the wrong sediment type or in structured environments like gravel beds or tilefish pueblo villages. The panel emphasized the gear should not be used in sediment types where it would cause more damage. Areas of known structure-forming biota should be mapped and set aside as a priority. It was emphasized that since we really do not know what the effect of this gear is to soft-bodied benthic organisms, a possible precautionary measure would be to restrict the fishery to areas of high clam productivity. Seasonal closures were mentioned if times and areas of high recruitment could be detected.

The temporal scale of the effects varies depending on the background energy of the environment. Recovery of physical structure can range from days in high energy environments to months in low energy environments, whereas biological structure can take months to years to recover from dredging, depending on what species are affected.

The workshop panel agreed that hydraulic dredges have important habitat effects, but even in a worse case scenario, where there were known to be severe biological impacts, only a small area is affected and therefore this gear type is less important than other gear types like bottom trawls and scallop dredges which affect much larger areas. It was also pointed out, however, that even though the effects

of dredging are limited to a relatively small area, localized effects of dredging on EFH could be very significant if the dredged area is a productive habitat for one or more managed fish resources. The same would be true if dredging in a particular area coincided with a strong settlement of larval fish. A major question for this gear that the panel asked was “what are its long-term biological impacts” *i.e.*, how, and to what extent, are benthic communities altered in heavily dredged areas, particularly the prey organisms, and how long does it take for them to recover once dredging ceases?

The Council concluded from the above identified workshop (Appendix 4 of MAFMC 2003) that there is sufficient information that clam dredges could have an effect on EFH if the gear is fished improperly or in the wrong sediment type. For example, hydraulic clam dredges would have a significant impact to a coral reef or a SAV bed if such gear were used in a stable, fragile, structured, environment like one of those environments. However, the clam resources are concentrated in high energy sandy sediment and the fishing gear has evolved over the past five decades to fish most efficiently in this type of sandy sediment. This evolution of the fishing gear has minimized the effect on fishery habitat (Wallace and Hoff 2004a). Natural events have more effect on the benthic community than this type of fishing gear since all of the fishing activity takes place in sandy shallow water. NMFS (2002) describing the October 2001 workshop concluded that hydraulic clam dredges were not a major concern relative to otter trawls and scallop dredges. All of the hydraulic clam dredging for an entire year, would impact about 100 square miles of bottom (Table 2 of MAFMC 2003). In context, this 100 square miles is roughly the area of one ten minute square, and there are over 1200 ten minute squares in the EEZ between Cape Hatteras and Georges Bank. Thus, it does not seem that either surfclam or ocean quahog EFH is effected by fishing gear.

A qualitative EFH vulnerability analysis conducted by Stevenson *et al.* (2003) suggests that the EFH of several species may be vulnerable to impacts associated with the use of hydraulic clam dredges. This includes black sea bass (juveniles and adults), scup (juveniles), ocean pout (all life stages), red hake (juveniles), silver hake (juveniles), winter flounder (juveniles and adults), and juvenile Atlantic sea scallops (section 2.2.5.5.2 of MAFMC 2003).

Based upon existing information, the Council concluded that there may be potential adverse effects on EFH from the hydraulic clam dredge, but concurred with the workshop panel (Appendix 4 of MAFMC 2003). The panel concluded that as the clam fishery is currently prosecuted, in sand habitats, there are potentially large, localized impacts to biological and physical structure; however, the recovery time is relatively short. Since the recovery time is relatively short (hours to months), the adverse impacts to this high energy environment can be considered temporary. The preamble to the EFH Final Rule (50 CFR Part 600) defines temporary impacts as those that are limited in duration and that allow the particular environment to recover without measurable impact. Since these impacts are potentially effecting a relatively small portion (approximately 100 square nautical miles) of the overall large uniform area of high energy sand along the continental shelf (approximately 54,900 square nautical miles), these adverse impacts can be considered minimal. Additionally, the 100 square nautical miles impact each year (approximately 1.5 ten minute squares of latitude and longitude) represents a small fraction of the total EFH of the above listed vulnerable EFH and species. The preamble of the EFH Final Rule defines minimal impacts as those that may result in relatively small changes in the affected environment and insignificant changes in ecological functions.

Although the Council has concluded that the clam fishery has an adverse effect on EFH that is no more than minimal and temporary in nature, there is enough uncertainty to warrant the evaluation of other measures that may be taken in light of this uncertainty. Based upon guidance from the Assistant Administrator (January 22, 2001), if information is inconclusive, a NEPA analysis should examine alternatives that could be taken in the face of uncertainty. For NEPA purposes, the guidance from the

Assistant Administrator stated that the analysis of alternatives needs to consider explicitly a range of management measures for minimizing potential adverse effects, and the practicability and consequences of adopting those measures. The advice from Dr. Hogarth continues: “In other words, if there is evidence that a fishing practice may be having an identifiable adverse effect on EFH, even if there is no conclusive proof of adverse effects, it is not sufficient to conclude *prima facie* that no new management measures are necessary without first conducting a reasonably detailed alternatives analysis.”

The Council evaluated nine alternatives that focused mostly on closed areas. The fishing gear impacts workshop (Appendix 4 of Amendment 13) concluded that effort reductions (i.e. harvest limits) and gear modifications (i.e. restrictions) were not workable for this fishery and that if the clam dredges were found to have significant adverse effects on EFH, then spatial closures were the only viable alternative to mitigate the adverse effects of this fishing gear. Since surfclams are not overfished and the annual quotas are actually being maintained, it seems to make little sense to restrict harvest limits for EFH reasons; however, there is an alternative for analysis where the ocean quahog optimum yield range would be reduced to trade off against an increase in surfclam quota. Finally, seven potential closed area alternatives were identified. These closed areas are being considered to be closed to clam dredging for 5 years. The distribution of the surfclam and ocean quahog resources based on the 1999 survey are depicted in Figures 5 through 8 of Amendment 13. Landings of the two species in 2000 are shown in Figures 9 and 10 of Amendment 13.

Of the nine alternatives that the Council considered initially relative to fishing gear impacts to EFH, four were thoroughly evaluated for their biological, economic, and social impacts. The Council did not thoroughly evaluate alternatives 5, 7, 8, and 9 for social and economic impacts, because they determined that these closures were not reasonable with all of the data uncertainties associated with each alternative. The Council eliminated alternative 4 for thorough evaluation because it is in shallow water and storm events are much more significant at causing sediment disturbances in those depths than is hydraulic clamming activity.

As discussed in Amendment 13 (MAFMC 2003), Wallace and Hoff (2005) and sections 7.3 and 7.6.3 of the EA, the gears used in the surfclam and ocean quahog fisheries do not have more than temporary or minimal impacts on EFH. None of the alternatives considered in this Framework will increase clam landings or even fishing effort. Therefore, the Council has concluded that to the extent practicable, there are no adverse effects of fishing on EFH as required by section 303 (a) (7) of the MSA.

## 9.0 OTHER APPLICABLE LAWS

### 9.1 NEPA

National Oceanic and Atmospheric Administration Administrative Order 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of “context” and “intensity.” Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

*1) Can the proposed action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?*

The proposed action is not expected to jeopardize the sustainability of the surfclam or ocean quahog resource, as described in section 7.0 of this EA. The proposed action does not alter the continued successful management for surfclams and ocean quahogs or the procedure for setting the annual harvest limit.

*2) Can the proposed action reasonably be expected to jeopardize the sustainability of any non-target species?*

The proposed action is not expected to jeopardize the sustainability of any non-target species. Management measures considered with any of the alternatives deal only with vessel monitoring and electronic reporting. The bycatch of non-target species in these fisheries is not substantial.

*3) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in FMPs?*

The proposed action as described in section 7.0 of this EA is not expected to cause damage to the ocean and coastal habitats, and/or EFH as defined under the Magnuson-Stevens Act and identified in the FMP. The area affected by the proposed action in the surfclam and ocean quahog fisheries has been identified as EFH for many Federally managed species. The only gears utilized in the harvest of these species are either dry dredges or hydraulic dredges. These gears are generally not associated with adverse impacts because they are only fished in high energy sandy bottom. Finally, because the proposed action is not expected to cause changes in coast-wide fishing effort, it is concluded that the alternative will not result in significant impacts to the environment as discussed in section 7.0 of this EA.

*4) Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?*

The proposed measure does not alter the manner in which the industry conducts fishing activities for the target species. Therefore, no changes in fishing behavior that would affect safety are anticipated. The overall effect of the proposed action on the fisheries, including the communities in which they operate, will not impact adversely public health or safety. NMFS will consider comments received concerning safety and public health issues.

*5) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?*

The proposed action is not expected to have an adverse impact on endangered or threatened species, marine mammals, or critical habitat for these species. The interaction between protected species and the gear used in these fisheries is minimal, as stated in sections 6.4 and 7.4 of this EA.

*6) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?*

The proposed action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area.

*7) Are significant social or economic impacts interrelated with natural or physical environmental effects?*

As discussed in section 7.0 of this EA, the proposed action is not expected to result in significant social or economic impacts, or significant natural or physical environmental effects.

*8) Are the effects on the quality of the human environment likely to be highly controversial?*

Measures contained in this EA are not expected to be controversial. This action merely addresses issues related to the administration of the surfclam and ocean quahog fisheries. Furthermore, the proposed action is merely an administrative tool.

*9) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?*

This action merely addresses issues related to the administration of the surfclam and ocean quahog fisheries. These fisheries are not known to be prosecuted in any unique areas such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas. Therefore, the proposed action is not expected to have a substantial impact on any of these areas.

*10) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?*

The impacts of the proposed measure on the human environment are described in section 7.0 of this EA. This action merely addresses issues related to the administration of the surfclam and ocean quahog fisheries. This action is not expected to alter fishing methods or activities in these fisheries. Therefore, measures contained in this action are not expected to have highly uncertain, unique, or unknown risks on the human environment.

*11) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?*

The synergistic interaction of improvements in the efficiency of the surfclam and ocean quahog fisheries is expected to generate positive impacts overall. As discussed in Section 7.6, the proposed

action is not expected to result in individually significant nor cumulatively significant impacts on the human environment.

*12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?*

The impacts of the proposed measure on the human environment are described in section 7.5 of this EA. This action merely addresses issues related to the administration of the surfclam and ocean quahog fisheries. These fisheries are not known to be prosecuted in any areas that might affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or cause the loss or destruction of significant scientific, cultural or historical resources. Therefore, the proposed action is not expected to affect any of these areas.

*13) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?*

The proposed action merely addresses issues related to the administration of the surfclam and ocean quahog fisheries. There is no evidence or indication that the prosecution of these fisheries has ever resulted in the introduction or spread of nonindigenous species. This action is not expected to alter fishing methods or activities in these fisheries, or the spatial and/or temporal distribution of this fishery. Therefore, it is highly unlikely that the action described in this Framework would be expected to result in the introduction or spread of a non-indigenous species.

*14) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?*

The proposed action merely addresses issues related to the administration of the surfclam and ocean quahog fisheries. This action is not expected to alter fishing methods or activities in these fisheries, or the spatial and/or temporal distribution of the fishery. In addition, this action does not alter the methodology used to determine the harvest limit. This action does not result in significant effects, nor does it represent a decision in principle about a future consideration.

*15) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?*

The proposed action merely addresses issues related to the administration of the surfclam and ocean quahog fisheries. This action is not expected to alter fishing methods or activities in these fisheries such that they threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment. In fact, the proposed measures have been found to be consistent with other applicable laws (sections 9.2 - 9.9).

*16) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?*

The impacts of the preferred alternative on the biological, physical, and human environment are described in section 7.0. The proposed action merely addresses issues related to the administration of the surfclam and ocean quahog fisheries. This action is not expected to alter fishing methods or activities in these fisheries, nor the spatial and/or temporal distribution of the fishery. Furthermore, the

proposed action is not expected to result in any direct or indirect adverse effects, much less cumulative adverse effects, on the target species or non-target species.

## DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for Framework 1 to the Surfclam and Ocean Quahog FMP, it is hereby determined that the proposed action will not significantly impact the quality of the human environment as described above and in the supporting Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

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Assistant Administrator for Fisheries, NOAA

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Date

### **9.2 Endangered Species Act**

Sections 6.4 and 7.4 of the EA should be referenced for an assessment of the impacts of the proposed action on endangered species and designated right whale critical habitat. The action proposed in this document is not expected to alter fishing methods or activities. Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on the fisheries.

### **9.3 Marine Mammal Protection Act**

Sections 6.4 and 7.4 of the EA should be referenced for an assessment of the impacts of the proposed action on marine mammals. The action proposed in this document is not expected to alter fishing methods or activities. Therefore, this action is not expected to affect marine mammals in any manner not considered in previous consultations on the fisheries.

### **9.4 Coastal Zone Management Act**

The Coastal Zone Management Act (CZMA) of 1972, as amended, provides measures for ensuring stability of productive fishery habitat while striving to balance development pressures with social, economic, cultural, and other impacts on the coastal zone. It is recognized that responsible management of both coastal zones and fish stocks must involve mutually supportive goals.

The action agency must determine whether the FMP will affect a state's coastal zone. If it will, the FMP must be evaluated relative to the state's approved CZM program to determine whether it is consistent to the maximum extent practicable. The states have 60 days in which to agree or disagree with the evaluation. If a state fails to respond within 60 days, the state's agreement may be presumed. If a state disagrees, the issue may be resolved through negotiation or, if that fails, by the Secretary.

The Council determined that the action in this Framework document is consistent to the maximum extent practicable with the enforceable provisions of the approved coastal management programs as understood by the Council. This determination was submitted for review to the responsible state



agencies, under section 307 of the Coastal Zone Management Act. Letters were sent to each of the following states within the management unit reviewing the consistency of the proposed action relative to each state's Coastal Zone Management Program: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina. To request a copy of the letter or a list of the CZM contacts for each state, contact Daniel T. Furlong at the Mid-Atlantic Fishery Management Council, Room 2115 Federal Building, 300 South New Street, Dover, Delaware 19904-6790, Telephone: (302) 674-2331, Fax: (302) 674-5399.

## **9.5 Administrative Procedure Act**

Sections 551-553 of the Federal Administrative Procedure Act establish procedural requirements applicable to informal rulemaking by Federal agencies. The purpose is to ensure public access to the Federal rulemaking process and to give the public notice and an opportunity to comment before the agency promulgates new regulations.

The Administrative Procedure Act requires solicitation and review of public comments on actions taken in the development of a fishery management plan and subsequent amendments and framework adjustments. Development of this Framework document provided many opportunities for public review, input, and access to the rulemaking process. This proposed Framework document was developed as a result of a multi-stage process that involved review by affected members of the public. The public had the opportunity to review and comment on these actions during the MAFMC Meetings held on October 11, 2006 and December 13, 2006. In addition, the public will have further opportunity to comment on this Framework document once NMFS publishes a request for comments notice in the Federal Register (FR).

## **9.6 Section 515 (Information Quality Act)**

Pursuant to NMFS guidelines implementing Section 515 of Public Law 106-554 (the Information Quality Act), all information products released to the public must first undergo a Pre-Dissemination Review to ensure and maximize the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies. To facilitate the Pre-Dissemination Review, this document addresses the utility, integrity, and objectivity of the information included in the document and used as the basis for making decisions regarding the proposed action.

### **Utility**

Utility means that disseminated information is useful to its intended users. "Useful" means that the content of the information is helpful, beneficial, or serviceable to its intended users, or that the information supports the usefulness of other disseminated information by making it more accessible or easier to read, see, understand, obtain or use.

The information presented in this document is helpful to the intended users (the affected public) by presenting a clear description of the purpose and need of the proposed action, the alternatives to the proposed action considered by the Council, and the analyses of the potential impacts of the proposed action to fishery resources, habitat, protected resources, and affected entities and communities so that intended users may have a full understanding of the proposed action and its implications.

This document is the first and only information product that provides the information described above. It includes the most current available relevant data and provides these data in a form that is intended to be useful and accessible to the public.

This document will be made available to the public via several media: Online, through the NMFS Northeast Regional Office web page at <http://www.nero.noaa.gov>; in hardcopy, available at the request of the public; and at Council meetings. Online, the document will be available in a standard format for such documents, that of “Portable Document Format,” or PDF.

## **Integrity**

Integrity refers to security--the protection of information from unauthorized access or revision, to ensure that the information is not compromised through corruption or falsification. Prior to dissemination, NMFS information, independent of the specific intended distribution mechanism, is safeguarded from improper access, modification, or destruction, to a degree commensurate with the risk and magnitude of harm that could result from the loss, misuse, or unauthorized access to or modification of such information.

All electronic information disseminated by NMFS adheres to the standards set out in Appendix III, “Security of Automated Information Resources,” of OMB Circular A-130; the Computer Security Act; and the Government Information Security Act. All confidential information (e.g., dealer purchase reports) is safeguarded pursuant to the Privacy Act; Titles 13, 15, and 22 of the U.S. Code (confidentiality of census, business, and financial information); the Confidentiality of Statistics provisions of the Magnuson-Stevens Act; and NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics.

## **Objectivity**

Objective information is presented in an accurate, clear, complete, and unbiased manner, and in proper context. The substance of the information is accurate, reliable, and unbiased; in the scientific, financial, or statistical context, original and supporting data are generated and the analytical results are developed using sound, commonly accepted scientific and research methods. “Accurate” means that information is within an acceptable degree of imprecision or error appropriate to the particular kind of information at issue and otherwise meets commonly accepted scientific, financial, and statistical standards.

This document is considered, for purposes of the Pre-Dissemination Review, to be a “Natural Resource Plan.” Accordingly, the document adheres to the published standards of the Magnuson-Stevens Act; the Operational Guidelines, Fishery Management Plan Process; and NOAA Administrative Order 216-6, Environmental Review Procedures for Implementing the National Environmental Policy Act.

The review process for this Framework adjustment involves the Council, the NEFSC, the Northeast Regional Office, and NMFS headquarters. The NEFSC's technical review is conducted by senior level scientists with specialties in population dynamics, stock assessment methods, demersal resources, population biology, and the social sciences. These reviewers will comment on the technical merits of any analyses included in this document. The Council review process involves public meetings at which affected stakeholders have opportunity to provide comments on the framework document. Review by staff at the Regional Office is conducted by those with expertise in fisheries management and policy, habitat conservation, protected species, and compliance with the applicable law. Final approval of the document and clearance of the rule is conducted by staff at NMFS Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

## **9.7 Paperwork Reduction Act**

The Paperwork Reduction Act (PRA) concerns the collection of information. The intent of the PRA is to minimize the Federal paperwork burden for individuals, small businesses, state and local governments, and other persons as well as to maximize the usefulness of information collected by the Federal government. A PRA will be conducted by the NERO for this proposed action.

## **9.8 Impacts of the Plan Relative to Federalism/EO 13132**

This Framework document does not contain policies with Federalism implications sufficient to warrant preparation of a Federalism assessment under Executive Order (EO) 13132.

## **9.9 Environmental Justice/EO 12898**

This EO provides that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” EO 12898 directs each Federal agency to analyze the environmental effects, including human health, economic, and social effects of Federal actions on minority populations, low-income populations, and Indian tribes, when such analysis is required by NEPA. Agencies are further directed to “identify potential effects and mitigation measures in consultation with affected communities, and improve the accessibility of meetings, crucial documents, and notices.”

Since the proposed action is not expected to affect participation in the surfclam and ocean quahog fisheries, no negative economic or social effects are anticipated as a result (section 7.0). Therefore, the proposed action under the preferred alternative is not expected to cause disproportionately high and adverse human health, environmental or economic effects on minority populations, low-income populations, or Indian tribes.

## **9.10 Regulatory Impact Review/Initial Regulatory Flexibility Analysis**

### 9.10.1 Introduction

The National Marine Fisheries Service (NMFS) requires the preparation of a Regulatory Impact Review (RIR) for all regulatory actions that either implement a new Fishery Management Plan (FMP) or significantly amend an existing plan or regulation. The RIR is part of the process of preparing and reviewing FMPs and provides a comprehensive review of the changes in net economic benefits to society associated with proposed regulatory actions. The analysis also provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problems. The purpose of the analysis is to ensure that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost-effective way.

The RIR addresses many items in the regulatory philosophy and principles of Executive Order (E.O.) 12866. The RIR also serves as the basis for determining whether any proposed regulation is a "significant regulatory action" under certain criteria provided in E.O. 12866.

This document is incorporated into "Framework Adjustment 1 to the Atlantic Surfclam and Ocean Quahog Fishery Management Plan Regarding Vessel Monitoring Systems (VMS)." The need for this action is to address issues related to the administration of the surfclam and ocean quahog fishery while

continuing to achieve the management objectives of the Surfclam and Ocean Quahog FMP as outlined in section 4.2. The purpose of implementing VMS is to replace the current call-in requirement and facilitate the enforcement of Federal fishery management areas as well as any closed area enforcement, including areas closed due to harmful algal blooms.

A detailed description of the alternatives considered to achieve these ends is presented in section 5. A thorough evaluation of the impacts is presented in section 7.

#### 9.10.2 Evaluation of E.O. 12866 Significance

If a proposed action is determined to be significant under E.O. 12866, the analysis undergoes further scrutiny by the Office of Management and Budget (OMB) to ensure that it meets the requirements of E.O. 12866 (NMFS 2001). A "significant regulatory action" means any regulatory action that is likely to result in a rule that meets any of the criteria discussed below.

- *Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;*

The proposed alternatives in this Framework action would have no impacts beyond the imposition of a requirement that VMS be installed by vessels within the surfclam and ocean quahog fleet. The alternative with the greatest impact would require vessel owners to collectively spend an estimated \$116,450 for new VMS system hardware and installation. Recurring annual service fees for this alternative are approximately \$11,880 across all vessels. Therefore, none of the alternatives proposed in this Framework action would have an impact reaching the \$100 million threshold, or significantly affect the sectors mentioned above.

- *Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;*

The proposed action will not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency. No other agency has indicated that it plans an action that will affect the Atlantic surfclam or ocean quahog fisheries in the EEZ.

- *Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof;*

The proposed actions will not have a material impact on entitlements, grants, user fees, or loan programs or the rights and obligations of their participants. It would require only the installation of a VMS unit on selected groups within the surfclam and ocean quahog fisheries.

- *Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.*

The proposed action supports and maintains the fisheries management program implemented by the Surfclam and Ocean Quahog Fishery Management Plan and subsequent Amendments. The Individual Transferable Quota system instituted in the fall of 1990 has been largely credited with successfully addressing the problems of overcapitalization and inefficiency inherent in many effort-based management systems. It has provided a high level of stability, efficiency, and improved profitability to the utilization of these resources. As such, the

proposed actions do not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

The benefits of a stable, ITQ management program are additionally evident from the absence of constant legal challenge, which many of the alternative management programs in the country have become subject to.

### 9.10.3 Significance Conclusion

Due to the lack of meeting any of the four criteria described above, it is determined that the proposed actions within this Framework action do not constitute a "significant" regulatory action.

### 9.10.4 Description of Management Objectives

A description of the management objectives of the Surfclam and Ocean Quahog FMP are presented in section 4.2 "Management Objectives and Management Unit of the FMP."

### 9.10.5 Description of the Fishery

The Mid-Atlantic Council is required to conduct annual reviews of the surfclam, ocean quahog, and Maine ocean quahog management programs, regardless of whether the upcoming year already has quota specifications in place as part of the new, multi-year quota management approach. The latest available information is presented in Appendix 2: Overview of the Surfclam and Ocean Quahog Fisheries and Quota Considerations for 2007.

### 9.10.6 Problem Statement

The primary issue which this Framework seeks to address is the perceived inadequacy of existing enforcement tools to adequately enforce jurisdictional boundaries and areas closed due to hazardous environmental conditions such as PSP.

### 9.10.7 Description of Management Alternatives

A thorough description of the management alternatives proposed in this Framework action is presented in section 5.0.

### 9.10.8 Analysis of Alternatives

As stated previously, a detailed analysis of all alternatives considered for the Framework action is presented in section 7.

The objective of the continued analysis in this section is to describe clearly and concisely the economic effects of the various alternatives. The types of effects that should be considered include the following:

- Changes in net benefits within a benefit-cost framework.
- Changes in the distribution of benefits and costs among groups.
- Changes in income and employment in fishing communities.
- Cumulative impacts of regulations.

A more detailed description of the economic concepts involved can be found in "Guidelines for Economic Analysis of Fishery Management Actions" (NMFS 2000), as only a brief summary of key concepts will be presented here.

Benefit-cost analysis is conducted to evaluate the net social benefit arising from changes in consumer and producer surpluses that are expected to occur upon implementation of a regulatory action. Total Consumer Surplus (CS) is the difference between the amounts consumers are willing to pay for products or services and the amounts they actually pay. Thus CS represents net benefits to consumers. When the information necessary to plot the supply and demand curves for a particular commodity is available, consumer surplus is represented by the area that is below the demand curve and above the market clearing price where the two curves intersect.

An evaluation of consumer surplus for surfclams and ocean quahogs is further complicated by the fact that there are few retail markets for either species outside of Maine. All of the landings from the ITQ fisheries are sold to processors who then add value by processing them into a variety of product forms. Boxes of frozen, breaded surfclam strips, cans of "clamato" juice, or chopped "clam meats" are the more common items that may be found on retail grocer's shelves. The majority of production is sold at the wholesale level to restaurants or other processors in the food industry that use them as ingredients in chowders and sauces.

Net benefit to producers is producer surplus (PS). Total PS is the difference between the amounts producers actually receive for providing goods and services and the economic cost producers bear to do so. Graphically, it is the area above the supply curve and below the market clearing price where supply and demand intersect. Economic costs are measured by the opportunity cost of all resources including the raw materials, physical and human capital used in the process of supplying these goods and services to consumers.

One of the more visible costs to society of fisheries regulation is that of enforcement. From a budgetary perspective, the cost of enforcement is equivalent to the total public expenditure devoted to enforcement. However, the economic cost of enforcement is measured by the opportunity cost of devoting resources to enforcement vis à vis some other public or private use and/or by the opportunity cost of diverting enforcement resources from one fishery to another.

#### 9.10.9 Summary Evaluation of All Alternatives

The impact of a VMS requirement in the surfclam and ocean quahog fisheries would be to increase the costs of harvesting for those vessels obliged to comply with it. It is anticipated that this would lead to only a very slight increases in exvessel prices. The market for clam meats is relatively soft and quite competitive coast-wide, so it is unlikely that producers would be able to pass along much of the increased costs to processors or consumers.

Table 6 provides a summary of the expected impacts of the alternatives relative to the status quo.

<b>Table 6. Summary of Impacts Relative to the Status Quo</b>					
<b>Feature</b>	<b>Alt 2a</b>	<b>Alt 2b</b>	<b>Alt 3a</b>	<b>Alt 3b</b>	<b>Alt 3c</b>
Exvessel Prices	+	+	+	slight +	slight +
Consumer Prices	slight +	slight +	slight +	very slight +	very slight +
Consumer Surplus	slight -	slight -	slight -	very slight -	very slight -
Harvest Costs	+ 116,450	+ \$116,450	+ \$103,950	+ \$44,100	+\$44,100
Producer Surplus	-	-	-	very slight -	very slight -
Enforcement Costs	-	-	-	-	-
Distributive Impacts	slight +	slight +	slight +	very slight +	very slight +
Cumulative Impacts	very small +	very small +	very small +	very small +	very small +
Risk of Biological Overexploitation	0	0	0	0	0
+ indicates an increase relative to the status quo; - indicates a decrease relative to the status quo; 0 indicates no change; ? indicates unknown					

#### 9.10.10 Initial Regulatory Flexibility Analysis - Impacts on Small Entities

The purpose of the Regulatory Flexibility Act (RFA) is to minimize the adverse impacts from burdensome regulations and record keeping requirements on small businesses, small organizations, and small government entities. The category of small entities likely to be affected by the proposed plan is that of Individual Transferable Quota (ITQ) holders and fishermen in the commercial Atlantic surfclam and ocean quahog fishery. The impacts of the proposed alternatives on the fishing industry and the economy as a whole were discussed above. The following discussion of impacts centers specifically on the effects of the proposed actions on the mentioned small business entities.

The Small Business Administration (SBA) defines a small business in the commercial fishing sector as a firm with receipts (gross revenues) of up to \$3.0 million. It is assumed that all of the vessels in the surfclam and ocean quahog fisheries would qualify as a small business using this definition.

The Northeast Regional Office of the National Marine Fisheries Service maintains current ownership records of all surfclam and ocean quahog vessel owners. These vessel owners are the entities that would be most directly impacted from the proposed actions in this Framework. As stated previously, the impacts of the alternatives are discussed in section 7 of this Framework.

## 10.0 LITERATURE CITED

- American Fisheries Society. 1988. Committee on scientific and vernacular names of mollusks of the Council of Systematic Malacologists. Special Publication 16. Bethesda, MD. 277p.
- Blaylock, R.A., J.W. Hain, L.J. Hansen, D.L. Palka, and G.T. Waring. 1995. U.S. Atlantic and Gulf of Mexico marine mammal stock assessments. NOAA Tech. Memo. NMFS-SEFSC-363. U.S. Department of Commerce, Washington, D.C. 211 pp.
- Doyle, S. Personal communications. NMFS Enforcement. Brielle, NJ.
- MacDonald, J. Personal communication. NOAA General Counsel. Gloucester, MA.
- Mid-Atlantic Fishery Management Council (MAFMC). 1988. Amendment #8 to the fishery management plan for the Atlantic surfclam and ocean quahog fisheries. Dover, DE.
- MAFMC. 1998. Amendment #10 to the fishery management plan for the Atlantic surfclam and ocean quahog fisheries. Dover, DE.
- MAFMC. 1999. Amendment #12 to the fishery management plan for the Atlantic surfclam and ocean quahog fisheries. Dover, DE.
- MAFMC. 2003. Amendment #13 to the fishery management plan for the Atlantic surfclam and ocean quahog fisheries. Dover, DE.
- MAFMC. 2006. Overview of the Surfclam and Ocean Quahog Fisheries and Quota Considerations for 2007. Dover, DE.
- Vecchione, M. and R. Griffis. 1996. How many species of surfclams? *Oceanog.* 9: 48-49.
- Walker, R. and P. Hefferman. 1994. Age, growth rate, and size of the southern surfclam, *Spisula solidissima similis* (Say 1822). *J. Shellfish Res.* 13: 433-441.
- Wallace, D.H. and T.B. Hoff. 2004. Minimal bycatch in the Northeast Atlantic surfclam and ocean quahog fishery. In: Bycatch in Northeast fisheries: moving forward. NERO Workshop Proceedings Document. page 83.
- Wallace, D.H. and T.B. Hoff. 2005. Hydraulic clam dredge effects on benthic habitat off the Northeastern United States. *American Fisheries Society Symposium* 41: 691-693.
- Waring, G.T., J.M. Quintal, C.P. Fairfield (eds). 2002. U.S. Atlantic and Gulf of Mexico marine mammal stock assessments - 2002. NOAA Technical Memorandum NMFS-NE-169.



## **11.0 LIST OF PREPARERS OF THE ENVIRONMENTAL ASSESSMENT**

Framework 1 to the Surfclam and Ocean Quahog FMP was submitted to NMFS by the MAFMC. This Framework was prepared by Dr. Thomas B. Hoff and Clayton E. Heaton of the MAFMC staff.

## **12.0 LIST OF AGENCIES AND PERSONS CONSULTED**

In preparing this document, the Council consulted with the NMFS, New England and South Atlantic Fishery Management Councils, Fish and Wildlife Service, and the states of Maine through North Carolina through their membership on the Mid-Atlantic and New England Fishery Management Councils. In addition, states that are members within the management unit were consulted through the Coastal Zone Management Program consistency process. Letters were sent to each of the following states within the management unit reviewing the consistency of the proposed action relative to each state's Coastal Zone Management Program: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina. To request a copy of the letter or a list of the CZM contacts within for each state, contact Daniel T. Furlong at the Mid-Atlantic Fishery Management Council, Room 2115 Federal Building, 300 South New Street, Dover, Delaware 19904-6790, Telephone: (302) 674-2331, Fax: (302) 674-5399.

In order to ensure compliance with NMFS formatting requirements, the advice of NMFS Northeast Region personnel was sought, including: Messieurs Brian Hooker, Bill Semrau, Jim St. Cyr, Andy Cohen and Dr. John Witzig. Ms. Joan Palmer and Dr. John Hoey of the NEFSC provided thoughtful insights as well.

## APPENDIX 1

### **Verbatim excerpt from Amendment 13 (MAFMC 2003) related to VMS and electronic reporting.**

"The Regional Administrator has had extensive experience during the past few years with a VMS system for the Atlantic Sea Scallop FMP and more recently with the Multispecies and Sea Herring FMPs. The regulations implementing the scallop VMS are located at section 648.9 of 50 CFR and deal with everything from the system being fully automatic and operational at all times, to being capable of tracking vessels in all US waters in the Atlantic Ocean, to being capable of providing network message communications between the vessel and shore. The major purpose of the mandatory scallop VMS has been to make sure that boats are tracked near the off-limits fishing areas that are so common in New England. Scallop vessels have to have a recording every half hour with 24/7 reporting. It is envisioned that a VMS for these two fisheries would require less constant monitoring and would be more like the sea herring requirements where the position of the vessel is only monitored on an hourly basis. Vessels would need to identify whether they were fishing for surfclams or ocean quahogs on the trip and then the transponder would provide the location of fishing. Fishing location is important for the enforcement of closed areas and in the provision of data that can be used to perform adequate analyses of considered closed areas. Accurate location data are also used in the stock assessment and this automatic data collection will provide more accurate location data than are currently being collected through the vessel logbook system. Enforcement personnel currently believe that the provision of the targeted species (surfclam versus ocean quahog) and then the automatic replies from the transponders are sufficient to allow the discontinuation of the vessel call-in system that has been in place for nearly two decades (Doyle pers. comm.).

"The industry has been asking for this type of system for nearly a decade so that they could get away from the call-in system. The specific requirements of the surfclam and ocean quahog call-in system are located at section 648.15 of 50 CFR and include the name of the vessel, NMFS permit number assigned to the vessel, expected date and time of departure from port, whether the trip will be directed on surfclams or ocean quahogs, expected time, and location of landing, and the name of the individual.

"All the above information was critical prior to implementation of the ITQ program in 1990. Enforcement resources are always limited and when fishermen were racing to catch the fish (because of the extreme effort limitations) and underreporting their catches, it was imperative the enforcement resources be used as efficiently as possible. However, with implementation of the ITQs most of the dockside enforcement necessity disappeared and enforcement could focus on the cage tags. Violations of the call-in during the past 12 years have been less than a half dozen (McDonald pers. comm.).

"It is probable that various enforcement agencies at this time will favor the implementation of VMS because of the facilitated knowledge of legitimate activities for readily identifiable vessels, thus increasing national security. It is because of this national security issue since September 11, 2001 that the industry and Council did not have a preferred alternative for public hearing. The Council had a presentation at the May 2002 meeting and it is likely that homeland defense will have one overall uniform system for vessel identification at sea. Industry and the Council do not favor implementing a system that could be changed in some manner once a unified homeland security system is adopted. This unified national system issue is currently in flux. As recently as April 9, 2002, WorldCatch News Network reported that NMFS will reimburse Alaska fishermen for their cost of a VMS.

"The Surfclam and Ocean Quahog Committee met with the Industry advisors at the March 2002 Council meeting and the *Industry Advisors recommended waiting at this time until the various enforcement agencies develop a plan*. The industry did not feel comfortable with any proposed change and did not feel that significant amounts of money should be spent to implement something that may be changed in the near future. For this reason, the Council decided that there was not a preferred alternative for the public hearing draft document.

"There are several major issues that need to be resolved before implementation of a VMS-type system. First, only BoatTracs is currently certified for the Northeast and this vendor is perceived as too costly both in terms of initial cost (\$6,000 per unit) and monthly connection charges (\$250). Second, it is desirable that a new reporting/tracking system replace the current call-in system and, at the same time, provide the potential for an electronic logbook system. However, according to the RA's October 15, 2002 letter, a prototype electronic logbook system will not be available until the end of 2003. Third, there is an equity issue if, in some regions of the country, the government purchases units for the industry and, in other areas, industry bears the cost. Last, there is some concern that homeland security issues may lead to a mandated tracking system that might prove incompatible with current VMS units.

"Individuals in the NEFSC (Terry Smith), Region (Reggie Howe and Karen Mareiro in statistics and Todd Dubois and Jim St. Cyr of enforcement), industry (Dave Wallace and Dan Cohen), and Council staff (Clay Heaton and Tom Hoff) have been working as an ad hoc group (CLEAN) which has been developing approaches for electronic reporting from both clam processors and fishermen. Briefings from enforcement personnel indicate that perhaps as early as June of 2003 an additional VMS technology would be certified (other than BoatTracs) that could be about a quarter of both the initial and monthly costs associated with BoatTracs. This team believes that ultimately an electronic tracking, reporting and noticing system would be ideal, but that perhaps it is best to think about implementation of electronic two-way communication capability in three phases. Phase 1 would be to get the units onto vessels and collect information sufficient to replace the current call-in system. Phase 1 would benefit both enforcement and the industry. Phase 2 would involve the design and implementation for electronically reporting trip data to replace the current requirement to submit paper vessel logbook reports. This would benefit industry and the data collection people. Phase 3 would consider implementation of detailed "real time" information on catch information, size frequencies and other scientific information. Phase 3 would be responsive to science needs and not part of the enforcement or reporting system. A likely timeframe for implementation could be six months for Phase 1 and by the end of 2003 (as per RA letter) for Phase 2. Phase 3 could be implemented when and if it becomes appropriate to collect tow specific information under the assumption that the unit is capable of two-way communication via some e-mail type system.

"The RA in her comment letter to the Council Chairman (October 15, 2002) again identified her support for Alternative 1, a mandatory vessel monitoring system.

**"1.2.5.1 Alternative 1 -- Mandatory.** A mandatory VMS would replace the call-in system and work similar to the scallop VMS, but could be less intensive reporting (hourly rather than every half-hour). It is estimated that 50 (non Maine) vessels who fish for surfclam and ocean quahogs in Federal waters would have to purchase and maintain the equipment from approved vendors. It is anticipated that the small-scale artisanal Maine vessels will be exempted from this requirement currently as the Regional Administrator has the authority to exempt them from the call-in system.

**"1.2.5.2 Alternative 2 -- No action.** Currently all fishing vessels must call into enforcement to notify them of their activities and where and when they will be landing.

**"1.2.5.3 Alternative 3 -- Voluntary.** This alternative would combine the current call-in system with an optional VMS so that the vessels would have the choice between the two.

**"1.2.5.4 Alternative 4 – Interactive Voice Response (IVR).** The existing IVR system allows dealers holding Federal permits to quickly and easily report their weekly fish purchases using a touch-tone telephone. This system is used for all quota-managed species in the northeast except for surfclams and ocean quahogs. Permit types that already report include: Atlantic bluefish, black sea bass, northeast multispecies, scup, spiny dogfish, squid/mackerel/butterfish, and summer flounder.

"The Council voted overwhelmingly (15 to 1 with RA abstaining) at its January 2003 meeting to adopt alternative 1, mandatory implementation of an electronic tracking system that is satisfactory to the NMFS and industry. The Council recommends that the RA implement this system when an economically viable system is available for the industry based on the advice of the Council. It is expected that the CLEAN team will continue its efforts to coordinate among the various interest groups in the government, industry, and Council staff and when additional certified systems are available, they will provide their recommendations to the Council. Specifically, the Council envisions the future process to move along the following lines.

<b>MANDATORY VMS</b>		
<b>PHASE 1</b>	<b>PHASE 2</b>	<b>PHASE 3</b>
VMS Notification System (Replacement of call-in system)	Electronic Vessel Reporting (Replacement of Vessel Logbooks or VTR)	Collection of Scientific Information
Monitoring of Closed Areas		

"Once an economically viable VMS system is available, and which meets the needs of the mandatory VMS requirements of Amendment 13, this system would be implemented on the advice of the Mid-Atlantic Council through several phases, starting with the beginning of the next fishing year following the agreement to implement the VMS system, as discussed below. Once the VMS system is recommended to be implemented, the owner of a vessel intending to harvest surfclams or ocean quahogs must provide documentation to the Regional Administrator that the vessel has an operational VMS unit installed on board that meets specific criteria (identified below) when renewing its surfclam and/or ocean quahog permit for the following year. If a vessel has already been issued a permit without the owner providing such documentation, the Regional Administrator shall allow at least 30 days for the vessel to install an operational VMS unit that meets the criteria and for the owner to provide documentation of such installation to the Regional Administrator. Vessel permits would automatically be revoked if the vessel did not comply with the VMS installation requirements in the allotted time frame.

"The Regional Administrator could exempt vessels that hold a limited access Maine mahogany ocean quahog permit from the VMS requirement. However, under this exemption, vessels that hold both a limited access Maine mahogany ocean quahog permit and an open access ocean quahog and/or surfclam permit would be required to use the call-in notification system when fishing under an ITQ quota.

## **"PHASE 1 - VMS NOTIFICATION SYSTEM**

"Phase 1 would implement a VMS notification system to replace the current surfclam/ocean quahog call-in system. Vessels would be required to report through the VMS e-mail messaging system prior to leaving the dock to fish in the EEZ on a surfclam or ocean quahog trip, and again prior to returning to the dock to offload a surfclam or ocean quahog trip, in accordance with instructions provided by NMFS. The VMS notification system would not necessarily require that the VMS system be operational at all times but only during the time that the vessel reports beginning and ending a trip as described above.

"Prior to departure from the dock to fish for surfclams and/or ocean quahogs, the vessel must report the following information via the VMS e-mail messaging system (some of this information is captured automatically by the VMS): Name of the vessel; NMFS permit number assigned to the vessel; expected date and time of departure from port; whether the trip will be directed on surfclams or ocean quahogs; expected date, time, and location of landing; and name of the individual providing notice. Prior to returning from a surfclam or ocean quahog trip, the vessel must report where the vessel will be offloading its catch, and the date and time of offloading, through the VMS e-mail messaging system.

## **"PHASE 2 - ELECTRONIC VESSEL REPORTING**

"Phase 2 would implement an electronic vessel reporting system that would replace the current Vessel logbook. Unless otherwise specified under an FMP-wide vessel electronic reporting system implemented by NMFS, the electronic vessel reporting system would require that the owner or operator of any vessel conducting a surfclam or ocean quahog fishing trip, except those conducted exclusively in waters of a state that requires cage tags or when the vessel has surrendered the surfclam and ocean quahog fishing vessel permit, must report the following information through the VMS e-mail messaging system, in accordance with instructions provided by NMFS (some of this information is captured automatically by the VMS system): Name and permit number of the vessel, total amount in bushels of each species taken, date(s) caught, time at sea, duration of fishing time, locality fished, crew size, crew share by percentage, landing port, date sold, price per bushel, buyer, tag numbers from cages used, quantity of surf clams and ocean quahogs discarded, and allocation permit number. This information would need to be provided daily or upon returning to port. Electronic vessel reporting would not necessarily require that the VMS system be operational at all times but only during the time that the vessel reports its electronic trip information.

## **"PHASE 3 - COLLECTION OF SCIENTIFIC INFORMATION**

"This would be a similar system to Phase 2 but information would be collected on a tow by tow basis. The specific information requested could include all of the information required under Phase 2, as well as any additional biological information deemed appropriate by the Council and NMFS.

"For Phase 1-3, the VMS Notification System, Electronic Vessel Reporting and Collection of Scientific Information, the performance criteria for the VMS system is as follows, or as modified further by NMFS, as deemed necessary:

- (1) The VMS shall be tamper proof.
- (2) The VMS shall be capable of transmitting and storing information including vessel identification, date, time, and latitude/longitude.
- (3) The VMS shall be capable of providing network message communications between the vessel and shore.

(4) The VMS vendor shall be capable of archiving vessel position histories for a minimum of 1 year and providing transmission to NMFS of specified portions of archived data in response to NMFS requests and in a variety of media (tape, floppy, etc.).

### **"MONITORING OF CLOSED AREAS (INDEPENDENT OF PHASES 1-3)**

"Once an economically viable VMS system becomes operational, the Council could decide whether or not closed areas should be monitored to better aid enforcement, independent of implementation of Phases 1-3, if the system selected is capable of providing this information. Monitoring of closed areas would require that the VMS unit be fully automatic and operational at all times and meet all other performance criteria. To monitor closed areas, the VMS system must meet the minimum performance criteria outlined as follows, or as modified further by NMFS, as deemed necessary:

- (1) The VMS shall be tamper proof, i.e., shall not permit the input of false positions; furthermore, if a system uses satellites to determine position, satellite selection should be automatic to provide an optimal fix and should not be capable of being manually overridden by any person aboard a fishing vessel or by the vessel owner.
- (2) The VMS shall be fully automatic and operational at all times, regardless of weather and environmental conditions, unless the vessel is "powered-down," i.e., the vessel will be continuously out of the water for more than 72 consecutive hours; and a valid letter of exemption was obtained pursuant to 648.9(c)(2)(ii) of and issued to the vessel and is on board the vessel and the vessel is in compliance with all conditions and requirements of said letter.
- (3) The VMS shall be capable of tracking vessels in all U.S. waters in the Atlantic Ocean from the shoreline of each coastal state to a line 215 nautical miles offshore and shall provide position accuracy to within 400 m (1,300 ft).
- (4) The VMS shall be capable of transmitting and storing information including vessel identification, date, time, and latitude/longitude.
- (5) The VMS shall provide accurate hourly position transmissions every day of the year unless the vessel is powered-down, as described above in item 2. In addition, the VMS shall allow polling of individual vessels or any set of vessels at any time and receive position reports in real time. For the purposes of this specification, "real time" shall constitute data that reflect a delay of 15 minutes or less between the displayed information and the vessel's actual position.
- (6) The VMS shall be capable of providing network message communications between the vessel and shore. The VMS shall allow NMFS to initiate communications or data transfer at any time.
- (7) The VMS vendor shall be capable of transmitting position data to a NMFS-designated computer system via a modem at a minimum speed of 9600 baud. Transmission shall be in a file format acceptable to NMFS.
- (8) The VMS shall be capable of providing vessel locations relative to international boundaries and fishery management areas.
- (9) The VMS vendor shall be capable of archiving vessel position histories for a minimum of 1 year and providing transmission to NMFS of specified portions of archived data in response to NMFS requests and in a variety of media (tape, floppy, etc.)."