

Appendix K



USFWS

Refuge staff conducting wildlife survey

Summary of Public Comments and Service Responses on the Draft Comprehensive Conservation Plan and Environmental Impact Statement for Monomoy National Wildlife Refuge

Table of Contents

Introduction	K-1
Summary of Comments Received	K-1
Service Responses to Comments by Subject	K-4
1. Refuge's Eastern Boundary	K-4
Boundary at Nauset/South Beach—Opposition to Refuge Addition	K-4
Boundary at Nauset/South Beach—Support for Refuge Addition	K-5
Memorandum of Understanding with Town and National Park Service	K-5
Boundary at Nauset/South Beach—Request for Map	K-6
2. Refuge's Western Boundary	K-7
1944 Declaration of Taking—Disagreement with Service Interpretation	K-7
1944 Declaration of Taking—Support for Service Interpretation	K-8
Submerged Lands Act—Disagreement with Service Interpretation	K-9
3. Fisheries	K-9
Fin Fisheries Jurisdiction in the 1944 Declaration of Taking	K-9
Fin Fishing with Bottom-Disturbing Gear	K-10
Fish Weirs	K-11
Shellfisheries Jurisdiction in the 1944 Declaration of Taking	K-12
Non-mechanized Hand-harvest of Subterranean Shellfish	K-12
Shellfishing with Bottom-Disturbing Gear	K-12
Non-hand Harvest of Scallops	K-13
Hydraulic Quahogging	K-13
Sea (Surf) Clamming	K-14
Mussel Harvesting—Opposition to Ban	K-14
Mussel Harvesting—Support for Ban	K-25
Salting—Opposition to Ban	K-25
Salting and Other Artificial Means of Extraction—Support for Ban	K-27
Oyster Farming	K-27
Lobster, Crab, and Whelk Harvesting	K-27
Horseshoe Crab Harvesting—Support for Ban	K-28
4. Wilderness Management	K-28
Wilderness Management	K-28
Addition of Nauset/South Beach to Wilderness	K-29
Designation of Excluded Lands and Additional Waters as Wilderness	K-29
Predator Control Structures in Wilderness Area	K-30
Limit Commercial and Recreational Uses in Wilderness Area	K-30
Wheeled Carts in Wilderness—Opposition to Ban	K-31
Wilderness Access Pass	K-32
5. Biological Environment	K-32
Migratory Birds—Opposition to Closures for Shellfishing	K-32
Emphasis on Protection of Birds	K-33
Predator Control—Opposition to Lethal Control	K-35
Predator Control—Support for Selective Predator Management	K-36
Predator Control—Impacts to Non-target Species	K-36
Northeastern Beach Tiger Beetle	K-36

Gray Seals	K-36
State-listed Species	K-37
Fowler’s Toads	K-38
Invasive Species	K-38
Prescribed Burning	K-39
Climate Change	K-39
6. Priority Public Uses	K-40
Brochures and “Rack Cards”	K-40
Recreational Fishing	K-41
Environmental Education and Interpretation	K-41
Photography	K-42
Waterfowl Hunting	K-42
Firearms for Waterfowl Hunting	K-43
7. Non-priority Public Uses.	K-43
General Beach Activities	K-43
Boating	K-45
Bicycling	K-46
Kiteboarding—Support for Ban	K-46
Kiteboarding—Opposition to Ban	K-47
Dog walking—Opposition to Proposed Ban	K-49
Dog walking—Support for Ban.	K-49
Jogging	K-50
Organized Picnicking	K-50
Camping	K-51
Jetskiing	K-51
Over-sand Vehicles	K-51
Fires and Fireworks.	K-51
Commercial Fishing Guide Permits.	K-52
Commercial Tours, Ferries, Guided Trips, and Outfitting	K-52
Commercial Photography	K-53
8. Other Water-based Activities	K-53
Dredging	K-53
Moorings	K-53
9. Refuge Administration and Infrastructure	K-54
Staffing	K-54
Budget and Costs	K-54
Proposed Downtown Visitor Contact Station.	K-55
Roads and Right-of-Ways	K-55
Proposed Shuttle Service	K-57
Entrance Fees	K-58
Parking Fees	K-58
Aircraft Ceiling.	K-59
Wind Turbine.	K-59
Operations and Maintenance	K-59
Monomoy Point Light Station	K-60
Trash and Debris Management	K-60
Stage Island Lot and Parking	K-61

10. Planning Process	K-62
Compliance with National Environmental Policy Act	K-62
Step-down Management Plans.	K-62
Decision-making/NEPA	K-64
Comment Process.	K-64
Scientific Information—Quality of Data Used	K-65
Scientific Information—Shellfish and Fin fish	K-65
Cape Wind	K-66
Additional Information/Corrections.	K-66
11. Consultation and Coordination	K-66
Coordination with Town of Chatham	K-66
Coordination with State and Town Enforcement Agencies.	K-67
12. Socioeconomic Impacts	K-67
Impacts on Local Economy	K-67
13. Alternatives	K-69
Support for Alternative A	K-69
Support for Alternative B	K-70
Opposition to Alternative B	K-70
Support for Alternative C.	K-71
Opposition to Alternative C	K-71
Proposed New Alternative	K-72
List of Commenters	K-72
Bibliography	K-80

Table Listings

Table K.1. Highlights of Proposals under Alternative B (Service-preferred alternative) in Draft and Final CCP/EIS by Major Issue	K-2
Table K.2. List of Commenters with Identification Number	K-72

Introduction

In April 2014, the U.S. Fish and Wildlife Service (Service, USFWS, FWS, we, our) released for public review the draft comprehensive conservation plan and environmental impact assessment (draft CCP/EIS) for Monomoy National Wildlife Refuge (NWR, refuge). The draft CCP/EIS outlined three alternatives for managing the refuge. Alternative B was identified as the “Service-preferred alternative.”

We initially released the draft CCP/EIS for 60 days of public review and comment from April 10 to June 9, 2014. In response to several requests, we subsequently extended the public comment period through October 10, 2014. In total, the comment period was 6 months long. During the comment period, we held five public meetings in the town of Chatham (Town), Massachusetts: one public hearing and four open houses. We also spoke to the Chatham Summer Residents Advisory Committee, at their request, at a televised meeting. We evaluated all the letters and e-mails sent to us during the comment period, along with comments recorded at our public hearing. This document summarizes all of the substantive comments we received and provides our responses to them.

Based on our analysis in the draft CCP/EIS and our evaluation of those comments, we have modified alternative B, which remains our preferred alternative in the final CCP/EIS. Our modifications include additions, corrections, clarifications, and changes to our preferred management action. We have also determined that none of those modifications warrants our publishing a revised or amended draft before publishing the final CCP/EIS.

Summary of Comments Received

After the comment period ended, we compiled all of the comments we received, including all letters, e-mails, and comments recorded at public meetings. In total, we received 255 separate written responses (some letters had multiple signatures), and 39 oral comments from the public hearing. Of the 255 written comments, 41 were a form letter. We also received two petitions: one signed by approximately 650 individuals (Petition A, cited in this appendix as comment #239) and the other by approximately 1,576 individuals (Petition B-*Moveon.org*, cited in this appendix as comment #240). We noted that some individuals signed both petitions.

We received a variety of letters from local, State, and Federal Governmental agencies, including the following:

- U.S. Environmental Protection Agency (EPA)
- Massachusetts Department of Fish and Game (MA DFG)
 - Massachusetts Division of Marine Fisheries (MA DMF)
 - Massachusetts Division of Fisheries and Wildlife (MA DFW)
 - Massachusetts Division of Fisheries and Wildlife—Natural Heritage & Endangered Species Program (NHESP)
- Massachusetts Office of Attorney General
- State Representative Sarah Peake
- Town of Bourne, Massachusetts
- Town of Brewster, Massachusetts
- Town of Chatham, Massachusetts (Town)
- Town of Eastham, Massachusetts
- Town of Harwich, Massachusetts
- Town of Mashpee, Massachusetts
- Town of Nantucket, Massachusetts
- Town of Orleans, Massachusetts
- Town of Truro, Massachusetts
- Town of Wellfleet, Massachusetts
- Town of Yarmouth, Massachusetts
- Chatham Summer Residents Advisory Committee
- Chatham South Coast Harbor Plan Committee
- Ipswich Shellfish Constable
- Rowley Shellfish Commissioner
- Weymouth Harbormaster/Shellfish Constable

We also received comments signed by representatives from the following organizations:

- Association to Preserve Cape Cod
- Cape Cod Commercial Fishermen’s Alliance

Summary of Comments Received

- Cape Cod & Islands Group—Massachusetts Sierra Club
- Cape Cod Marine Trades Association
- Center for Coastal Studies
- Funseekers.org
- Horseshoe Crab Conservation Association
- Mass Audubon
- Massachusetts Committee for the Preservation of Horseshoe Crabs
- National Wildlife Refuge Association
- Northwest Atlantic Marine Alliance
- Quitneset Associates, Inc.
- Wilderness Watch
- Woods Hole Sea Grant and Cape Cod Cooperative Extension

We have prepared a table which reflects the major issues identified during the comment period and indicates if and how our preferred alternative changed as a result of our review of the comments and information provided. This table is followed by a detailed summary of the comments and our responses.

Table K.1. Highlights of Proposals under Alternative B (Service-preferred alternative) in Draft and Final CCP/EIS by Major Issue

Major Issue	Proposal under Alternative B in Draft CCP/EIS	Proposal under Alternative B in Final CCP/EIS
Refuge’s eastern boundary – Nauset/South Beach	Refuge boundary would include 717 acres of Nauset/South Beach. The refuge would manage this area as part of the Monomoy Wilderness Area.	Change: Most of Nauset/South Beach would continue to be managed by the Town. The refuge and Town have signed a MOU (Final CCP/EIS appendix L) which administratively determined a management boundary line. The Service will manage lands west of this line, and the Town will manage lands east. None of the lands that will be managed by the Town are part of the Monomoy Wilderness.
Refuge jurisdiction over open waters and submerged lands within 1944 Declaration of Taking	Refuge’s western boundary extends beyond mean low water (MLW) out to the 1944 Declaration of Taking line.	No change: We still claim management authority over the submerged lands and open waters in the Declaration of Taking.
Fin fishing	Prohibit any fishing activity using techniques or gear that disturbs the bottom. Allow fishing in the open waters, above submerged lands, under State and Federal regulations.	Change: We determined that existing State and Federal fishing regulations adequately protect eelgrass beds so we do not propose to further regulate fin fishing at this time.
Fish Weirs	Prohibit fish weirs.	Change: We determined that existing State and Town regulations adequately regulate fish weirs so we do not propose to further regulate fish weirs at this time.
Shellfishing – Softshell clams, razor clams, and quahogs	Prohibit mechanized equipment for harvesting quahogs. Allow non-mechanized harvest of subterranean shellfish (softshell clams, razor clams, and quahogs).	Change: We determined that existing State and Town shellfishing regulations adequately protect eelgrass beds so we do not propose to further regulate shellfishing for these species below the MLW line at this time. Continue to allow only non-mechanized hand harvest of subterranean shellfish across the refuge above MLW.
Salting for razor clam and sea clam harvesting	Prohibit salting for shellfish harvesting.	No change: We still propose to prohibit salting above MLW based on the potential for negative impacts to non-target species and undersized razor clams.
Shellfishing – Scallop harvesting	Prohibit non-hand harvest of scallops.	Change: We now propose to allow scalloping according to Town regulations. We believe that existing regulations are sufficient to protect eelgrass beds at this time.

Major Issue	Proposal under Alternative B in Draft CCP/EIS	Proposal under Alternative B in Final CCP/EIS
Shellfishing – Sea clams	Sea clams were not addressed in the draft CCP/EIS as there is no current fishery on the refuge. However, several commenters included sea clams in their comments on the draft CCP/EIS.	Change: Currently, there is not a viable sea clam fishery on the refuge. However, if in the future there is, we propose to allow sea clamming in accordance with Town regulations except for salting above MLW, and will allow the hand harvest of sea clams on tidal flats.
Shellfishing – Wheeled carts in Monomoy Wilderness Area	Prohibit wheeled carts in Monomoy Wilderness Area.	No change: We still propose to prohibit wheeled carts in the wilderness area because they violate the Wilderness Act (16 U.S.C. 1131-1136) and Service wilderness policies (610 FW 1).
Mussel harvesting	Prohibit mussel harvesting.	No change: We still propose to prohibit mussel harvesting because mussels are an important food for federally threatened red knots, as well as common eiders, other sea ducks, and American oystercatchers.
Moorings	Prohibit moorings.	Change: We now propose to evaluate the installation of conservation boat moorings on a case-by-case basis, and allow if found appropriate and compatible.
Kiteboarding	Prohibit kiteboarding.	No change: We still propose to prohibit kiteboarding on the refuge due to concerns about impacts on nesting and staging birds, including common terns, least terns, federally endangered roseate terns, and federally threatened red knots and piping plovers.
Dog walking	Prohibit dog walking.	Change: We now propose to allow leashed dogs on Morris Island from September 16 to April 30. A seasonal closure from May 1 to September 15 is consistent with Town regulations and will minimize impacts to wildlife and conflicts between visitors. Dogs and other pets would not be allowed elsewhere on the refuge at any time. We would require that pets be on a 6-foot leash and that owners remove pet waste from the refuge.

In the discussions below, we address and respond to the substantive comments we received. Generally, a substantive comment meets at least one of the following criteria:

- It challenges the accuracy of information presented.
- It challenges the adequacy, methodology, or assumptions of our analysis and supporting rationale.
- It presents new information relevant to the analysis.
- It presents reasonable alternatives, including mitigation, other than those presented in the document.

In order to facilitate our responses, we grouped similar comments together and organized them by subject heading. Directly beneath each subject heading, you will also see a list of unique letter ID numbers. Table K.2 at the end of this appendix relates each letter ID number to the name of the individual, agency, or organization that submitted the comment.

In several instances, we refer to specific text in the draft CCP/EIS and indicate how the final CCP/EIS was changed in response to comments. The full versions of both the draft CCP/EIS and the final CCP/EIS are available online at: http://www.fws.gov/refuge/Monomoy/what_we_do/conservation.html (accessed October 2015). For a CD-ROM or a print copy, please contact staff at Monomoy NWR:

Monomoy National Wildlife Refuge
30 Wikis Way
Chatham, MA 02633
Phone: 508/945-0594

Service Responses to Comments by Subject

1. Refuge's Eastern Boundary

Boundary at Nauset/South Beach—Opposition to Refuge Addition

(ID# 51, 53, 56, 57, 63, 64, 65, 73, 75, 78, 79, 80, 85, 86, 90, 91, 94, 95, 97, 98, 99, 101, 102, 104, 106, 107, 108, 114, 119, 121, 122, 124, 125, 126, 127, 128, 129, 130, 132, 134, 136, 138, 139, 140, 142, 146, 148, 150, 153, 157, 164, 168, 176, 181, 182, 184, 187, 194, 195, 196, 197, 201, 202, 203, 204, 207, 209, 210, 213, 217, 220, 223, 229, 232, 237, 238, 240, 241, 245, 247, 248, 250, 252, 253, 254, 255, 256, 258, 261, 263, 265, 268, 269, 273, 275, 279, 281, 282, 284, 285, 286, 287, 291, 292, 293, 294, 296, 301)

Comment: The majority of comments on the draft CCP/EIS were focused on our interpretation of the refuge's boundary and the Service's jurisdiction, as detailed in the draft CCP/EIS (Chapter 2, Affected Environment). Many individuals, organizations, and towns expressed strong opposition to our assertion that the refuge's eastern boundary now includes 717 acres of Nauset/South Beach. The main reasons cited for this opposition were:

- There is no legal basis for a different boundary interpretation.
- The Town is already effectively managing the area and is a good environmental steward.
- The proposed restrictions on public use and recreation would “threaten Chatham’s very historical, cultural, and economic identity that has endured for centuries.”

Regarding concerns about the legal basis for the boundary interpretation, several provided case law to support their comments. The Town letter provided the widest range and greatest detail about the eastern boundary concerns. The Town indicated their rights to South Beach derive from the deed of Joshua Nickerson in 1951, which is also bounded by water—the Atlantic Ocean and Chatham Harbor. The Town does not believe the Service is “entitled to the unilateral application of the doctrine of accretion” while ignoring the Town’s right to apply that same doctrine. They go on to say, “Furthermore...even if the FWS is entitled to apply the doctrine of accretion, the amount of South Beach it claims to have obtained is grossly excessive. In making its claim, the FWS has failed to apply the principles that govern scenarios where competing land masses accrete into each other...the principle of equitable division.” They continue, “the Town contends that no reasonable person and no Court could sensibly conclude that the [boundary proposed in the draft CCP/EIS] is equitable in nature.” The three cases the Town cites are: *Siesta Properties, Inc. v. Hart*, 122 So.2d. 218, 221 (Fla. Dist. Ct. App. 1960), *Lorusso v. Acapesket Improvement Association* 408 Mass. 772, 781-782 (1990), and *Hartigan* 464 Mass 400 (2013) at 407. One commenter referred to Section 6 of the 1997 National Wildlife Refuge System (Refuge System) Improvement Act regarding expansion of the refuge.

Response: Between the southward-growing lands of Nauset/South Beach, belonging to the Town, and the lands of the United States, there formerly existed a narrow channel below MLW (the “Southway”) that has begun to fill in, and has entirely filled in at the southern end, filling the space between lands of the United States and of the Town. Until 2006, the two properties did not have any boundary in common, when a portion of the channel between them filled in to above MLW. There is a point, towards what was then the south-easternmost point of the Nauset/South Beach spit, at which the two landforms first touched. Land has subsequently been formed filling in between the two landforms, and the ownership of that land must be apportioned between the Town and the United States.

Because of the shifting landforms and the imprecise location of the boundary, we recognize that it may be costly and time-consuming for the Service and the Town to settle the boundary location. For this reason, we have entered into a Memorandum of Understanding (MOU) with the Town that established management boundary on Nauset/South Beach. The MOU is provided in appendix L of the draft CCP/EIS. Lands and waters that are located or accrete west of this management boundary will be managed by the Service as part of the Monomoy NWR; lands that are located or accrete to the east of this management boundary will be managed by the Town. The Service’s management extends to MLW.

The general principles in the MOU do not resolve for practical management purposes precisely where the “point of first contact” lies, and the precise boundary. We do want to clarify that we are not engaged in

“revising the boundary” in the sense of adding or subtracting legal parcels of land from the boundary. The boundary was established by the 1944 Declaration of Taking. The only issue the Service must wrestle with now is what present-day lands belong to the United States as a result of that Declaration of Taking. Natural processes of accretion, erosion, and avulsion may have changed the landforms, but the Service is not proposing to “add new lands to the project boundary” that would not belong to the United States by virtue of the Declaration of Taking. We intend to pursue discussions with the Town to precisely locate this boundary during the period of the agreement. A boundary line agreement or other vehicle may be necessary to clarify the boundary going forward.

Boundary at Nauset/South Beach—Support for Refuge Addition

(ID# 72, 96, 227, 244, 276, 289)

Comment: The National Wildlife Refuge Association, Cape Cod and Islands Group of the Sierra Club, and several individuals agreed with the Service that 717 acres of Nauset/South Beach are in the refuge’s boundary. The National Wildlife Refuge Association agrees that case law supports our position, noting that there are other refuges in the Refuge System that have both gained and lost acreage due to shifting sands. The Cape Cod and Islands Group of the Sierra Club provided an extensive timeline of the changing shoreline of Nauset Beach. One individual shared an 1890 map that they believe, “show[s] that South Beach has, in the past, been entirely attached to Monomoy and what is now the Monomoy NWR. This is the same stretch of beach (700 plus or minus acres) that the Town is claiming is “a taking.” This confirms the [refuge’s] statements that ownership of this stretch of barrier beach, because of shifting sands, breakthroughs, and connections, is reasonable and is best determined by the approach which you are taking.” Other commenters support the new boundary as it would protect habitats and wildlife and preserve wilderness characteristics.

Response: We thank these organizations and individuals for their support. It is true that Nauset/South Beach has likely repeatedly accreted and breached, leading to the establishment of Monomoy as either island or peninsula over the course of time. The Declaration of Taking set the ownership of what was then Monomoy Peninsula with an ambulatory eastern boundary set at MLW. Owners of lands with ambulatory boundaries recognize that boundaries may change due to the risk of erosion and the chance of accretion. As the “Southway” filled in, the area bounded by MLW changed, necessitating the equitable apportionment of the newly accreted land. Because of the uncertainty of how to determine the equitable apportionment, and for the other reasons identified above, we have agreed on a management boundary which will allow most of Nauset/South Beach to stay under the management of the Town until a final boundary is determined. Please see the discussion above for more information.

Memorandum of Understanding with Town and National Park Service

(ID# 64, 134, 153, 155, 241, 244)

Comment: The Town provided extensive comments on the 2007 MOU among the Town, National Park Service (NPS), and the Service. The MOU had established administrative boundaries for the three parties in the area of where the Cape Cod National Seashore jurisdiction overlaid the Nauset/South Beach connected with South Monomoy Island. The Town felt that the MOU was mischaracterized in the CCP as “temporary only for the purpose of resolving jurisdiction issues between FWS and NPS.” They indicated that the MOU helped the three parties “work cooperatively towards resolving this very complicated boundary issue.” The Town also noted that “the planning, community outreach, and cooperation envisioned by all three parties to the MOU did not materialize.” One commenter indicated that we failed to effectively collaborate and cooperate with the NPS including developing a plan for shared Federal resources. Several commenters called for the development of a new memorandum between the FWS and the Town that would reflect the concerns of both parties (protection of wildlife and the traditional and historic rights of citizens). Mass Audubon supported cooperation with the Town and the NPS and other stakeholders “to coordinate and optimize the outcomes for myriad public interests associated with the natural resources across all the public coastal lands and nearshore waters in the area in and around the refuge.” Cooperative management could help reduce disturbance to waterbirds from visitors and provide for more consistent and stronger protection for beach-nesting birds. The Cape and Islands Group of the Sierra Club suggested that we might want to address our jurisdictional boundaries in this area. Another commenter suggested that we obtain assistance from the Department of the Interior Office of Collaborative Action and Dispute Resolution to address issues resulting from poor communication with the Town.

Response: The FWS originally approached the NPS in 2005 to discuss Cape Cod National Seashore’s overlapping boundary over Monomoy NWR, where some land and waters were subject to regulations and policies of two different bureaus within the Department of the Interior. The original intent of the MOU is correctly stated in the draft CCP/EIS and is retained in the final CCP/EIS. In fact, the MOU stated “that a permanent resolution of the overlapping boundary issue must be attained in order to provide for adequate long-term management.”

As a result of initial discussions with the NPS, it was agreed that the Town needed to be part of the discussion as well. By January 2008, the FWS, NPS, and the Town had signed an MOU that established an “administrative boundary” which “serves as an interim tool to ensure that appropriate and complete resource protection, protection of public safety, and management of resource values is maintained during the interim planning process.” This language is drawn directly from the MOU, which also stated that “the administrative boundary does not supersede existing legislative boundary definitions or land ownership.”

The MOU called for all parties “to render all reasonable assistance to the other, consistent with their respective statutory authorities, whenever necessary to accomplish the goals” of the agreement. It is our opinion that this aspect of the MOU has been successfully implemented. We have maintained open communication with the Town regarding the management of Nauset/South Beach and South Monomoy Island. We conducted red knot surveys on South Beach and supported Mass Audubon’s Coastal Waterbird Program, which carries out piping plover management on South Beach and is partially funded by the Town. We also cooperated on northeast beach tiger beetle surveys and emergency response. We have a good relationship with Cape Cod National Seashore staff as well.

It is also clear that none of the parties, including the FWS, undertook the efforts necessary to engage in the long-term planning process to clarify jurisdictional overlap and boundary questions. Furthermore, new maps “depicting the location of the administrative boundary” were not “developed annually or as changing natural conditions warrant,” with the agreement of all parties. In fact, no discussion of changes to this boundary ever occurred, and no new maps were ever made. Also, the MOU had a 5-year term ending in January 2013.

On June 9, 2015, we entered into a new MOU with the Town that determines, for administrative purposes, the management authority over the area where Nauset/South Beach join to one another, without the need for a judicial determination of the boundary. The MOU is provided in appendix L of the final CCP/EIS. We will work together to define a permanent boundary before the MOU expires in 2030. We have also updated the Refuge Administration section of chapter 2 and the Actions Common to All Alternatives in chapter 3 of the CCP to further address the Monomoy/Cape Cod National Seashore jurisdictional overlap. The NPS is not a party to the 2015 MOU because their jurisdiction is not impacted by the management boundary.

We have a good relationship with both the Town and the NPS and will continue to work effectively together in the future.

Boundary at Nauset/South Beach—Request for Map (ID# 293)

Comment: One individual suggested that we should have included a map showing what the eastern boundary was prior to our determination that South Beach was part of the refuge, writing, “It is interesting that there is no map available that shows the eastern shore line boundary prior to this depiction. It is not right to base a boundary revision without prior delineation. Moreover, rapidly shifting sands over a period of 3 years should never lead the CCP to conclude a boundary revision of this magnitude. Is the refuge willing to revisit and perhaps revise the boundary every 3 years?”

Response: Given the establishment of a management boundary in the MOU with the Town (described above), we do not believe it is necessary to provide a map in the final CCP that depicts the eastern boundary prior to our determination that Nauset/South Beach is part of the refuge. The commenter is correct that changes in this dynamic environment will continue to reshape the landforms enclosed within the project boundary. We have updated the aerial photo upon which the new management boundary is overlaid, and will continue to do so over time to depict the management boundary, when there is a major change in the landform and clarity is needed on the location of the management boundary.

2. Refuge's Western Boundary

1944 Declaration of Taking—Disagreement with Service Interpretation

(ID# 53, 63, 64, 65, 73, 78, 85, 94, 95, 98, 99, 101, 102, 106, 107, 119, 124, 125, 126, 128, 129, 138, 139, 142, 146, 148, 150, 153, 168, 176, 181, 182, 184, 187, 188, 194, 196, 197, 199, 201, 202, 203, 204, 207, 209, 213, 217, 218, 220, 223, 233, 237, 238, 239, 240, 241, 245, 247, 248, 250, 253, 255, 258, 263, 268, 269, 281, 285, 286, 287, 290, 291, 301)

Comment: The Massachusetts Office of the Attorney General, the Town, several neighboring towns, and many individuals and organizations expressed strong opposition to our assertion the Service has jurisdiction in the submerged lands and waters within the 1944 Declaration of Taking. The main reasons cited for this opposition were:

- Disagreement that the Declaration of Taking language gives the Service absolute ownership over submerged lands and waters in the Declaration of Taking boundary. Most believe the Service only has jurisdiction above MLW, which was substantiated by subsequent case law.
- The proposed restrictions on certain types of shellfishing and fin fishing in the Declaration of Taking would have significant negative impacts on the local fishing industry and economy.
- The Service has never exerted jurisdiction over these lands and waters, and Town and State regulations already effectively manage and protect the resources.

Similar to the eastern boundary, the Town and Massachusetts Attorney General letters provided the widest range and greatest detail about the western boundary concerns and cited case law supporting their position. There was also concern expressed about the re-installation of buoys to mark the boundary.

One commenter from the Town indicated that he did not believe we have the legal authority to manage these waters and cited Service documents from 1941, 1945, 1955, and 1967 that indicated we would continue to allow commercial fishing within the waters of the refuge.

Response: We have carefully considered the question of Service jurisdiction over submerged lands and waters within the refuge's western boundary. We have concluded that the refuge is bounded by MLW on the eastern side, and by a fixed boundary that includes submerged lands and waters within a western boundary defined by the 1944 Declaration of Taking. This conclusion is driven by the text of the original acquisition documents. Some additional explanation is provided to help readers follow our reasoning.

Monomoy NWR was acquired by a Declaration of Taking approved by the U.S. District Court on February 10, 1944, and filed in Federal court with immediate effect on June 1, 1944. The Declaration of Taking includes a detailed written description of an extensive area containing upland, intertidal flats, and submerged ocean waters, as well as a map generally outlining those exterior limits and describing them as the "Limits of Area to be Taken." The Declaration of Taking states that "the above-described area ... is to be acquired." The Declaration of Taking contains five discrete descriptors of monuments and features to be acquired and a perimeter line described in the Declaration of Taking as the "exterior limits." We read this list as five discrete sentences, so that named geographic points, geomorphic features or habitats (islands, islets, sand bars, and tidal flats), and the MLW line, can all be identified within the exterior limits line. The exterior limits ran partially along the ambulatory MLW line along the eastern boundary, and by identified survey coordinates along the western boundary. Thus, we draw our conclusion that the proper boundary of Monomoy NWR is the area delimited as the "described exterior limits" in the text of the Declaration of Taking, which was generally configured as the "Limits of Area to be Taken" on the map accompanying the Declaration of Taking.

In making this determination, we examined historical documents describing the pre- and circa 1944 actions establishing the refuge. This includes the Service's 1938 "Chief's Approval" package (Salzer II 1938) recommending creation of the refuge, which includes a redlined map taken from the U.S. Coast & Geodetic Survey (USC & GS) chart which was initially used to develop the outline for the "Limits of Area to be Taken." The Chief's Approval also includes the biological justification for acquiring the land and waters within these exterior limits (Griffith 1938). The Chief's Approval package includes a key memorandum from the Chief of Wildlife Refuges, which was approved by the Chief of the Bureau of Biological Survey (predecessor title to the

Director of the FWS). The Chief's Approval explicitly approves acquisition of the water and shoal areas west of the upland spine of Monomoy Island to allow them to be closed as needed for wildlife. The proposed refuge boundary outlined by the redline tracing is quite similar to the one on the Declaration of Taking map. The package repeatedly highlights the presence of submerged aquatic vegetation (SAV) valuable as a food source for migratory waterfowl as one of the important resources of the proposed refuge. The species of SAV they describe (including eelgrass-*Zostera*, widgeongrass-*Ruppia*, and sea lettuce-*Ulva* and *Enteromorpha*) only grow in areas that are entirely covered by water during all portions of the tidal cycle. The resource values of the submerged habitats, observed by the Service's initial reconnaissance biologists and highlighted in the Chief's Approval package, remain critical to the mission and purposes of the refuge today. We believe that the Chief's Approval package gives us clear information about the intended boundary.

A second key reference document is the March 1941 "Development Plan for the Monomoy National Wildlife Refuge," (Salter II 1941) which also emphasizes the extensive eelgrass beds of *Zostera*. Monomoy NWR previously had one of the largest such stands on the Atlantic Coast and the Service intended to replant and re-establish these submerged plants, recognized as an 'essential' food source for wintering waterfowl. Thus, both the 1938 Chief's Approval letter and the 1941 development plan show that the Service intended to acquire and manage the submerged lands and waters west of the upland areas.

While some discrepancies exist amongst early maps, the essential intent of the Service regarding a management boundary can clearly be traced from the Chief's Approval in 1938, to the 1941 Development Plan, to the written text of the 1944 Declaration of Taking.

In addition to those early documents, the inclusive western boundary line is consistent with the official 1970 Wilderness Area map, which was provided to Congress and incorporated into that legislation, and represents the only congressionally approved map of the refuge. The boundary is also consistent with the litigation position of the United States and the map produced by the Service in 2002 in response to the *Associates of Cape Cod* Remand Order.

Deeds are to be interpreted consistently with the framer's intent, and cases involving Federal property are to be strictly interpreted to support the intent of the United States for its acquisition or reservation of Federal property. As such, after examining the intent of the Service in creating this refuge, and using supporting documentation from the 1970 Wilderness designation and Associates of Cape Cod opinion, we conclude that the refuge's correct western boundary is the area delimited as the "Limits of Area to be Taken" on the map accompanying the Declaration of Taking, and that the refuge's correct eastern boundary is defined by the MLW line.

We emphasize to commenters that we are not proposing to expand Service jurisdiction—our conclusion is that this analysis reflects the present state of Federal land ownership. For this reason, we do not propose management alternatives with different refuge boundaries—the Service is not proposing to alter the area of the refuge, but merely seeking to be clear about its current area.

Regarding the concern about impacts to commercial and recreational fishing within the waters of the Declaration of Taking, we have modified our Service-preferred alternative B in the final CCP/EIS to reflect that, with a few exceptions (re: table K.1), we have no compelling reason at this time to further regulate fishing and shellfishing in this area beyond existing Federal, State, and Town regulations.

Regarding the Town's concern with the placement of buoys along the western Declaration of Taking boundary, we will be happy to consult with Town officials to better understand their concerns.

1944 Declaration of Taking—Support for Service Interpretation (ID# 244)

Comment: The Cape Cod and Islands Group of the Sierra Club "is in general agreement with the Monomoy NWR boundaries presented by the USFWS."

Response: The comment is noted that there is support of the boundary depicted in the draft CCP/EIS. However, as noted in our response above, the final CCP/EIS includes the outcome of a 2015 MOU establishing a management agreement boundary along Nauset/South Beach.

Submerged Lands Act—Disagreement with Service Interpretation
(ID# 64, 241, 245, 258)

Comment: The Town, the Massachusetts Attorney General, and another commenter disagreed with our interpretation of the Submerged Lands Act (SLA). “The Town’s position is that the Supreme Court’s Supplemental Decree of 1996 definitively applies the SLA as affirmation for the Commonwealth’s title to all of Nantucket Sound within 3 miles of shore, including Monomoy islands. And, under the legal doctrine of collateral estoppel, the United States and the FWS are now precluded from arguing a contrary proposition.” All cited the case of *United States of America versus Winthrop E. Taylor* as support for their contention that the U.S. Government (i.e. Service) does not have authority to prohibit activities below MLW.

Response: Despite the urging of the Attorney General and others, we do not believe that the situation created by the Declaration of Taking was altered by the SLA, 43 USC §1301 *et seq.* The SLA was passed in 1953 and relinquished the rights of the United States in the submerged lands within the territorial sea to the coastal states after the U. S. Supreme Court ruled in 1947 that such submerged lands were not owned by the coastal states but subject to the paramount rights of the United States. The SLA did not relinquish submerged lands already reserved or acquired by the Federal Government, expressly including submerged lands acquired by condemnation. The Commonwealth of Massachusetts had been formally notified of the condemnation action of the Declaration of Taking on January 4, 1945. It did not file a claim and the Court defaulted all notified potential claimants who did not file claims. Therefore, the submerged lands encompassed by the Declaration of Taking were excepted from the SLA’s 1953 transfer of lands to the Commonwealth. Furthermore, in subsequent SLA litigation involving many of the coastal states to establish the location of the states’ internal waters and the baseline for measuring the 3-mile boundaries, Massachusetts claimed all of the waters of Nantucket Sound, which includes the waters west of Monomoy. The Supreme Court expressly held that the submerged lands west of Monomoy Point were not Massachusetts’ internal waters at the time of the formation of the Union. Therefore, the submerged lands within the exterior perimeter lines were already acquired as Federal land, excepted from the SLA, and subject to Federal jurisdiction and control when the State received any surrounding lands in 1953.

The Taylor decision is not the definitive finding on the Monomoy boundary. At the time of the Taylor incident, the property interests of the United States were not at issue in the matter, as the case was about unleashed dogs on the refuge. The judge provided a finding based on an incorrect understanding of the Service’s authority. New evidence has come to light since then concerning the background to the Declaration of Taking, as discussed above. The decision in Taylor is also inconsistent with the Court’s decision in *Associates of Cape Cod v. Babbitt*, (D. Mass. 2001), which enjoined FWS from prohibiting harvest of crabs outside the wilderness areas—as the only areas relevant that would be outside the wilderness areas would be those below MLW.

3. Fisheries

Fin Fisheries Jurisdiction in the 1944 Declaration of Taking

(ID# 63, 64, 65, 78, 91, 94, 95, 97, 98, 99, 101, 102, 104, 106, 107, 119, 124, 125, 126, 128, 129, 138, 139, 140, 142, 146, 148, 150, 157, 231, 235, 239, 240, 242, 243, 248, 252, 255, 259, 266, 299)

Comment: Many commenters expressed opposition to any efforts by the Service to manage fin fisheries within the Declaration of Taking. The Town, MA DMF, the Cape Cod Commercial Fisherman’s Alliance, and many others disagreed that the Service has jurisdiction over fin fishing in the open waters and submerged lands in the 1994 Declaration of Taking area. Rather, they felt that the State and Town have jurisdiction over all fisheries in this area. Some recognized that we were not proposing management actions for fishing that uses demersal longlines, hook, and line/rod and reel and they thanked us for that position. Other commenters are

opposed to commercial fishing in the waters off Monomoy. One person felt that commercial fishing would be a disaster. Another felt that Monomoy should be a sanctuary for fish so that fish populations can increase.

Response: We maintain our position that we have the authority to manage all fishing activities within the Declaration of Taking, as we describe above in section 2 of this appendix. We agree that all existing fin fisheries can be conducted within the waters of the refuge according to State and Federal regulations as we have no compelling biological or other management interest in these activities at this time. This represents a change from the draft CCP. We describe specific fin fisheries below in more detail.

Fin Fishing with Bottom-Disturbing Gear
(ID# 64, 210, 241, 242, 243, 257, 267, 291, 293)

Comment: The Town, the Cape Cod Fisherman's Alliance, the MA DMF, and many others disagreed with the proposal to ban fin fishing with bottom-tending gear (e.g., otter trawls) in the Declaration of Taking. They felt that the ban was based on inaccurate information because the draft CCP/EIS describes gear and techniques that are not used locally and that have far greater impacts on eelgrass beds and other benthic communities. They also stated that existing State and Town fishing regulations are adequate for protecting eelgrass beds and other marine communities.

For example, the Town wrote "The [draft] CCP/EIS states: 'In an effort to protect eelgrass beds and other sensitive bottom-dwelling communities, no fishing...activities that use bottom-disturbing gear and techniques will be allowed under any alternatives in the Declaration of Taking.' While this statement might seem instinctively true, it is not supported by any scientific studies conducted in the area or involving the size and type of bottom-tending gear utilized by local fishermen." They go on to say, "The Town does not believe that the methods and nature of Chatham's small boat inshore fisheries, as guided by the regulatory safeguards established by the Town and State, cause the level of impacts to benthic marine habitat assumed by the FWS." The Town provided additional information and scientific citations about the types of gear used locally to help support their comment.

Similarly, the MA DMF wrote, "The draft CCP/EIS does not contain sufficiently supported justification for the USFWS' determination that the long-standing fishing activities in the NWR adversely impact eelgrass beds."

The MA DMF and Cape Cod Commercial Fishermen's Alliance urged us to not issue a blanket ban on all types of bottom-tending fishing gear. The Alliance wrote "We recognize the need to protect seafloor habitats and that some of these gears may not be appropriate for all areas at all times, but we think an outright prohibition is the wrong approach. We ask that you consider these gears individually and recognize the significant differences among them."

Response: After compiling public comments, new information, and speaking with local experts, we have changed our position on fin fishing with the type of bottom-disturbing gear currently used in the waters off the Monomoy Islands and do not plan to regulate their use within refuge waters at this time. We agree that the information that we used in the draft was not as applicable to the current fisheries equipment being operated within the refuge boundary as we believed it to be. It is understood that the majority of the habitat in the submerged waters within the refuge's boundary is a high energy sandy substrate which is the most resilient and least vulnerable habitat to fishing (Northeast Fisheries Management Council (NEFMC), NEFMC 2011). Many of the benthic organisms that reside in this habitat are adapted to disturbed environments such as frequent storms, which may cause more disturbance than bottom-tending fin fishing gear.

The MA DMF currently has seasonal regulations in place to limit the impact of mobile bottom fin fishing gear on eelgrass. Per State guidelines, mobile bottom-fishing gear would not be allowed in inshore waters between May 1 and October 1 as to not impact eelgrass during its growing period. With this new information, we feel that the State and Town have appropriate regulations in place to minimize the impact to the subtidal community. Our decision to not impose additional restrictions on this fishery is consistent with the other open water fisheries where we believe there is no or little conflict with refuge wildlife resources and there is oversight by the State of the fishery.

We will request an annual meeting with the Town and the MA DMF to discuss both refuge and fishery management. Any changes in either refuge or fishing techniques or fishery management can be discussed at this annual meeting. This will assist us in minimizing impacts to both the refuge and the fishing community.

Fish Weirs

(ID# 63, 64, 89, 104, 140, 141, 145, 152, 153, 225, 241, 242, 243, 246, 248, 252, 273, 279)

Comment: The MA DMF, Town, and several individuals asked that the refuge rethink the proposed ban on fish weirs on the refuge. They commented that we incorrectly described the types of fish weirs used in near Monomoy NWR and inaccurately analyzed their impacts in the draft CCP/EIS. Some also felt we failed to consider benefits from fish weirs to marine wildlife (e.g., foraging locations for seabirds and other predators, mussels growing on anchor lines) and grossly overstated or mischaracterized negative impacts (e.g., to benthic communities, eelgrass, and sea turtles). Others stated that we did not provide adequate scientific basis in the draft CCP/EIS to support a ban. One wrote, “I find no science in the draft CCP which has analyzed the [impacts of placing weir poles in the bottom types that occur in the] waters adjacent to Monomoy, and any suggestion that the practice is, or has been responsible for the degradation, or loss of eelgrass habitat, or beds, is without merit.” Several commenters went on to provide additional information on fish weirs and encouraged the refuge to talk to the local fishing community to learn more about the types of fish weirs used locally.

Response: After compiling public comments, obtaining new information, and speaking with local experts, we have changed our position on fish weirs and do not plan to regulate the use of them within refuge waters at this time as they are adequately regulated by the MA DMF and the Town. We agree that the data we used in the draft to make our decision was not applicable to the current trap fishery being operated in Chatham. Fish weirs used in the Chatham area are very different from those used in the mid-Atlantic region where much of our research cited was based.

In response to comments raised that we inaccurately described the types of traps used locally, we have modified language describing fish weirs/traps within the CCP using information we received from commenters and additional research. Please refer to chapter 2 to see the updated descriptive text.

The potential damage caused by the physical placement of the weir poles is unclear. We remain concerned about potential damage to eelgrass beds, although we have been informed by the MA DMF that none of the four permitted weir locations within the Declaration of Taking are on eelgrass beds. We do not know whether or not it is possible to place weirs in areas with eelgrass, and if they can be, then what the impacts to the eelgrass beds may be. Due to the sandy dynamic nature of the Monomoy area and assuming that the eelgrass habitat is similar to that of Duck Harbor, which has been extensively monitored by NPS staff at the Cape Cod National Seashore (Neckles and Bayley 2014), it is possible that eelgrass is present in an area one year and then not present the next. Due to this variability, it is important to be careful where nets are placed. We would like to work with the MA DMF to develop a monitoring plan for eelgrass on the refuge to more fully understand the areas that are most important to protect, and then ensure that fish weir operations (as well as other activities) occur outside those areas or in a manner where there is no impact to the eelgrass. We believe an annual meeting with the Town, the MA DMF, and other relevant stakeholders to discuss fishing activities within the Declaration of Taking boundary will help us achieve this goal. This could include collaboration with the Town regarding the location of established trap grant areas to prevent potential damage to eelgrass.

Regarding the capture of target and non-target species, fish weir operators require a permit from the Town, the MA DMF, and the U.S. Army Corps of Engineers, and we feel that these agencies have and will continue to responsibly manage this fishery. We wish to explore the possibility of collaboration with fishermen, and other organizations like Mass Audubon, when sea turtles are caught in fish weirs. Turtles that are temporarily captured in the nets provide a unique opportunity for research, and while in the net can be tagged or sampled for other scientific purposes. The refuge may play a critical role in helping scientists access the captured turtle in the net as we generally have boats in the water when the nets are in operation and could respond quickly. We are also interested in discussing with fishermen the use of impact lessening devices like modified leaders to minimize sea turtle bycatch (Silva et al. 2011).

We have not been able to find literature to support comments that we received regarding the biological benefits of the weir (with the exception of seals feeding in them), but we would be interested in working with the fishermen to learn more about how the weir is benefiting refuge wildlife.

Shellfisheries Jurisdiction in the 1944 Declaration of Taking

(ID# 50, 51, 63, 64, 78, 121, 133, 136, 157, 164, 183, 198, 211, 229, 239, 240, 253, 255, 262, 266, 267, 273, 280, 284, 290, 291, 294, 300)

Comment: Several individuals and the Town expressed appreciation that clamming using traditional non-mechanical methods would be allowed to continue. One commenter requested that we delegate management authority for the subtidal bottom shellfishery to the Town. However, many individuals and many Cape Cod municipalities did not agree that the Service has jurisdiction over shellfishing in the open waters and submerged lands in the Declaration of Taking. They were concerned that Service jurisdiction over shellfishing would negatively impact the local economy and Town's culture. Several individuals and the Town commented that the Town has successfully managed these resources and should continue to have jurisdiction over shellfishing (e.g., harvest methods, seasons, aquaculture, etc.). The Town wrote: "by maintaining healthy, sustainable wild shellfish stocks outside Monomoy NWR, the Town has taken pressure off shellfish resources within the refuge and contributed to the overall abundance of shellfish stocks. Another individual wrote that "shell fishing and fin fishing are well regulated by the Town and the Commonwealth of Massachusetts. Both jurisdictions have gone above and beyond to make sure that shell fishing and fin fishing are done in ways to preserve and promote the growth of eelgrass and in ways that protect the resource."

Response: We maintain our position that we have the authority to manage all fishing activities within the Declaration of Taking, as we describe above in section 2 of this appendix. We agree that many existing shellfisheries can be conducted within the waters of the refuge according to State and Town regulations, with little impact to refuge resources, and have made some changes from the draft CCP/EIS to reflect this. However, we still have compelling biological interest in some shellfisheries at this time. We describe specific shellfisheries below in more detail.

Non-mechanized Hand-harvest of Subterranean Shellfish

(ID# 64, 86, 111, 157, 242, 243, 244, 250, 252, 256, 273, 296)

Comment: The Town, MA DMF, and a few other commenters were generally pleased with the proposal to continue to allow non-mechanized hand-harvest of subterranean shellfish (softshell clams, quahogs, and razor clams) because of its importance to the local economy and culture. However, they were disappointed in the ban of wheeled carts in the wilderness area because carts are an important way for shellfishermen to transport their harvest. They also had concerns about our proposed prohibition on salting as a harvest tool for razor clams. One commenter is concerned that we are reserving "the right at any time to change the rules regarding hand digging of shellfish from the tidal flats." He wants language put in place so that people from Chatham will always be able to dig clams and quahogs. Another wants no limitations to hand harvest of all shellfish at all. One commenter wanted clamming open to all U.S. citizens, not just Chatham residents.

Response: We appreciate the comments supporting the permitted use of non-mechanized hand-harvest of subterranean shellfish on the refuge. We are committed to working cooperatively with the Town and the State to have the most compatible access possible for clambers on the Monomoy tidal flats. For our response on wheeled carts, see the section "Wilderness Area Management" in this appendix. Our response on salting follows later in this section.

Shellfishing with Bottom-Disturbing Gear

(ID# 51, 63, 64, 86, 91, 134, 136, 140, 153, 164, 210, 229, 233, 234, 241, 242, 243, 244, 249, 250, 252, 256, 259, 261, 264, 267, 293, 297)

Comment: The Town and many organizations and individuals disagreed with the proposed ban on shellfishing using bottom-disturbing gear (e.g., scallop and mussel dredging and hydraulic quahogging). Reasons given for opposition include: potential negative impacts to the local economy from the ban, disagreement about the types and severity of impacts to benthic communities from shellfishing, and the belief that existing Town and State regulations already adequately protect eelgrass beds, migratory birds, and other marine species and communities. While the Town acknowledges that eelgrass beds are declining, they feel "there has been no indication or scientific evidence to suggest this decline is related to traditional fishing activities or methods." The Town and others provided additional information and scientific citations about the types of shellfishing

gear used in the area. Some commenters agreed that shellfishing is a traditional activity that has occurred for hundreds of years but should be limited to hand tools only.

Response: After compiling public comments, new information, and speaking with local experts, we have established our position on shellfishing for softshell clams, scallops, quahogs, and sea clams, and do not plan to further regulate the harvest of these species below the MLW line within the refuge boundary at this time. The existing State and Town regulations adequately protect eelgrass beds. We have not changed our position prohibiting the harvest of mussels. We have addressed the use of mechanized equipment for sea clams and scallops in more detailed responses below.

We have revised the final CCP/EIS to reflect this position. We will also request an annual meeting with the Town and the MA DMF to discuss proposed changes in both refuge and fishery management. This will assist us in minimizing impacts to both the refuge and the fishing community.

Please also see our more detailed responses about individual types of shellfishing below.

Non-hand Harvest of Scallops

(ID# 63, 64, 77, 86, 136, 157, 164, 210, 229, 241, 242, 243, 248, 250, 252, 256, 259, 261, 262, 264, 267)

Comment: One individual wrote in support of banning the non-hand harvest of scallops because they felt it negatively impacts the sea floor. However, many others, including the Town, MA DMF, and the Cape Cod Commercial Fisherman's Alliance, disagreed with the ban on non-hand harvest of scallops because they felt that the scallop harvesting techniques used in the area did not significantly impact eelgrass beds and other benthic communities and the ban would negatively impact local shellfishermen. They stated that we inaccurately described the scallop harvest methods used in the area and instead described methods that have far greater impacts on eelgrass beds, benthic communities, and shellfish. The Town and a few other commenters included scientific citations and other additional information on the scallop harvesting techniques used locally. They feel the methods actually used in the area have very little impact on these resources. Several also stated that existing Town shellfish regulations adequately protect eelgrass beds and shellfish, "For example, the Town has prohibited teeth or rakes on scallop...dredges to protect eelgrass and allows only seasonal harvesting of bay scallops during the eelgrass dormant period..." A local scallop harvester echoes this, writing, "Eelgrass...dies in the fall and early winter and grows back in the warm weather. We scallop in the late fall and winter, we use light dredges, and that don't disturb the bottom so much to dig up the eelgrass roots. We don't hurt the eelgrass."

Response: After reviewing comments, new information, and speaking with local experts, we have changed our position on the use of non-hand harvest equipment for scallop harvesting inside the refuge's boundary. During our review process for the draft CCP, we documented the impacts of large New Bedford style scallop dredges that are not used within the refuge's boundary. It was brought to our attention that Chatham inshore fisherman employ a lightweight dredge that is pulled at low speeds with small skiffs. Chatham shellfish regulations state the dredge frames may not measure more than 36 inches in width, must be of light construction type, and no "rakes" shall be attached to the dredge frame. The impacts to eelgrass from this size and type of dredge are considerably less than the much larger scallop dredges used offshore. It is also noted that the harvest of bay scallops in Chatham only occurs from November 1 to March 31, when eelgrass is predominantly dormant. This seasonal restriction is narrower than the State regulations, which allow the harvesting of bay scallops from October 1 to May 1. We have revised the final CCP/EIS to reflect that we have no compelling reason to further regulate scalloping at this time beyond Town regulations. We will also request an annual meeting with the Town and the MA DMF to discuss proposed changes in both refuge and fishery management. This will assist us in minimizing impacts to both the refuge and the fishing community.

Hydraulic Quahogging

(ID# 63, 64, 83, 157, 241, 242, 243, 259, 264, 267)

Comment: The Town and several commenters disagree with the proposed ban on hydraulic quahogging. Reasons given for opposition include: potential negative impacts to the local economy from the ban, disagreement about the types and severity of impacts to benthic communities from shellfishing, and the belief that existing Town and State regulations already adequately protect eelgrass beds, migratory birds, and other

marine species and communities. One commenter expressed concern about the destruction of benthic habitat caused by modern commercial harvesting techniques and other fisherman expressed support for a ban on the use of hydraulic pumps to harvest shellfish.

Response: After compiling public comments, new information, and speaking with local experts, we have changed our position on hydraulic quahogging and do not plan to regulate this use within refuge waters below MLW at this time. We feel that the current regulations that the State and Town have in place minimize disturbance to eelgrass beds. The Town has approved two hydraulic dredging areas, one which is partially inside the southwest corner of the refuge's boundary. This area will remain open to hydraulic dredging per State and Town regulations.

We have revised the final CCP/EIS to reflect this use below MLW according to State and Town regulations. Our decision to not impose additional restrictions on this fishery is consistent with our position on the other open water fisheries, where we believe there is currently no or little conflict with refuge wildlife resources, there is adequate oversight by the State and Town of the fishery, and therefore, there is no compelling reason for further regulation of this fishery by the Service at this time. We will also request an annual meeting with the Town and the MA DMF to discuss proposed changes in both refuge and fishery management. This will assist us in minimizing impacts to both the refuge and the fishing community over the long term.

Sea (Surf) Clamming

(ID# 51, 63, 64, 164, 229, 233, 241, 256, 264)

Comment: The Town and several other commenters requested that we not limit sea clamming on the refuge because the draft CCP/EIS does not provide adequate scientific justification for prohibiting it and a ban would have negative impacts on local fishermen. The Town writes, "It is...unclear how or if the FWS is proposing to regulate the State regulated sea clam fishery. While not currently occurring [in the Declaration of Taking], this can be a very important fishery to local fisherman. The Town would not support any limitations [on sea clam harvest] if the opportunity presents itself." One commenter stated that salting for sea clams should be allowed.

Response: Sea clams can occasionally be found on tidal flats (Duncanson 2015). There is currently occasional harvest of sea clams in some Town waters that can be harvested by hand tools. We noted in the draft CCP/EIS that the harvesting of sea (surf) clams is not occurring within the refuge boundary at this time. We acknowledge that this could change if the sea clam population were to increase. Therefore, we have amended the compatibility determination for the hand harvest of subterranean clams above MLW to include sea clams. Most often sea clams are found in deeper waters. The Town has two approved hydraulic dredging areas, one which is partially inside the refuge's boundary. This area will remain open to the use of inshore hydraulic clam dredges to harvest sea clams. If the sea clam population were to increase inside the refuge's boundary we will work with the Town Shellfish Office to identify new or additional areas that would need to be open to hydraulic dredging. Harvest of sea clams below MLW is outside the Monomoy Wilderness and need not be restricted to hand tools. The Service sees no compelling reason at this time to further regulate this use. We will also request an annual meeting with the Town and the MA DMF to discuss proposed changes in both refuge and fishery management. A change in the location of harvestable sea clams would be a topic of discussion that would assist us in minimizing impacts to both the refuge and the fishing community.

For our response on salting above MLW, see below.

Mussel Harvesting—Opposition to Ban

(ID# 51, 63, 64, 86, 136, 153, 157, 164, 210, 229, 233, 241, 242, 243, 248, 252, 256, 261, 264, 279, 293, 294, 297, 300)

Comment: Many commenters, including the Town and the MA DMF, disagreed with the ban on mussel harvesting. Reasons for opposition provided by commenters are summarized below:

- Mussel harvesting is a traditional use of the subtidal waters and mussels are an inexpensive food source. A prohibition will impact the livelihood and income of Chatham shellfishermen that rely on this cyclical and valuable resource.

- Mussel harvesting should be controlled by the Town. The existing mussel regulations in Chatham (e.g., no rakes or teeth on mussel dredges; minimum harvest size of 2 inches; must immediately return smaller mussels) provide adequate food resources for birds as well as shellfishermen.
- There is no scientific basis for the ban on mussel harvesting and there is no evidence to show that mussel harvesting has ever had negative impacts to eiders or other migratory birds, or small dredges or other low-tech methods of harvesting damage mussel beds or eelgrass beds. Specific related comments include:
 - ★ Mussels do not “set” in eelgrass.
 - ★ Mussels grow prolifically in the intertidal and sub-tidal zones around Monomoy NWR.
 - ★ The total area discussed in the CCP is small compared to the total coastal acreage available to eiders, and the blue mussel habitat is “smaller still,” so it is unreasonable to claim that mussel harvesting on this small area will impact eiders.
 - ★ References provided to support the ban are insufficient. The Town specifically wrote “...However, the four references that were cited in Appendix D and presented as supporting scientific literature fail to provide a cogent scientific basis for such a ban. Indeed, some of the statements in Appendix D have no supporting evidence to justify their conclusions, and the citations that are provided do not support the statements or have questionable conclusions. Overall, the review commissioned by the Town concluded that the information provided in the CCP/EIS fails to provide any scientific basis which would warrant a full ban on mussel harvesting.” They discuss their specific points of contention for the four references in a separate Appendix.
- There is no competition between birds and mussel harvesters.
 - ★ Mussels that are legal harvest size (2 inches) are too large for birds to consume. The Town writes, “The 2-inch limit debunks the contention that fishermen and shorebirds compete for the same mussels as small shorebirds forage for ‘spat’ or ‘seed mussel.’” Smaller mussels are returned to the water alive for birds (such as eiders and red knots) to consume, and are the size that eiders prefer.
 - ★ One commenter who opposed the ban submitted follow up comments and noted that although they discovered eiders will eat mussels larger than 2 inches, thinning of mussel beds is beneficial (see below).
 - ★ One commenter also noted that “Migrating sea ducks are able to feed on mussels in deeper water where it is difficult for harvesters to access.”
- Mussel harvesting benefits birds.
 - ★ One commenter noted “Smaller mussels are culled onboard the harvesting skiffs and returned alive to the water. Significantly, many of these returned mussels, which have been separated from the dense mat they grow in, tumble in the tide and can travel considerable distance before the energy of the current dissipates and they settle to the bottom where they can reattach and become the nucleus for a new mussel bed. This, in fact, is a direct benefit to Eider as it leads to a broader distribution of mussels and the development of new feed-plots for the birds.” This commenter also notes that “...Eider are big strong ducks and fly great distances on a daily basis as they trade back and forth along the coast from loafing areas to feeding spots...The dispersal of feeding locations over a broad area is positively impacted by the harvest of mussels (as discussed above), and it provides greater opportunity for unmolested feeding because it does not concentrate the feeding ducks over single large mussel beds.”
 - ★ One commenter noted that overcrowding of mussels (in aquaculture settings) is detrimental and can impact their access to food and water, interfere with waste removal, and encourage growth of harmful organisms. Aquaculturists go to great lengths to spread mussels out and “...it makes sense that it is beneficial for the mussels to be ‘thinned’ by harvesters when they are growing in the wild. The harvesters in this case would be both eider ducks and people, and their harvesting activities would be mutually beneficial.” This commenter also noted that oysters and scallops similarly grow better when they are not overcrowded.

Several commenters also noted that an outright prohibition was not appropriate. The MA DMF recommended that the Service work with them, other State regulatory agencies, and the Town to implement additional measures, such as seasonal restrictions, area management, gear restrictions, and quotas, to limit impacts and ensure that mussel harvesting could continue on the refuge. One commenter noted that hand harvesting of mussels should at least be allowed, and another noted that dredging gear “may not be appropriate for all areas at all times...”

Response: We recognize that Chatham fishermen and residents feel strongly about the ban on mussel harvesting and want to have continued access to this resource. While mussel harvesting is considered a traditional use of refuge waters, our position on the appropriateness and compatibility of any use of the refuge is based on the potential impacts of that activity to biological resources of concern. We can make decisions about uses of refuges and prohibit, restrict, and/or regulate activities even when there are economic impacts associated with our decisions, as long as these can be explained in our planning documents.

We also understand the sentiment that mussel harvesting has been occurring concurrent with bird use on Monomoy NWR for years with “no impact” and that the Service has no scientific basis for banning mussel harvesting. Although there are gaps in the available scientific information regarding mussel ecology in Massachusetts, and the relationships between mussel beds and bird use, we feel there is enough information to inform our decision-making process. We received many comments that dually note that we had no scientific basis for a ban on mussel harvesting and that mussel harvesting had no impacts on birds or the substrate, but no commenters provided any additional resources or references to support the latter claim. One new reference was cited by the Town relative to mussel spawning (Newell and Moran 1989; we believe this should be cited as Newell 1989). One new reference was also cited by the Town relative to American oystercatchers (Hand et al. 2010). The collective content of the comments we received showed that we failed to adequately present the entirety of our justification. We have reanalyzed the references we originally cited in the draft CCP, which the Town claims are insufficient, as well as numerous additional resources (including Newell 1989 and Hand et al. 2010), and provide a more thorough justification below.

In our final decision-making process, we considered all the comments we received as well as information on (1) the life cycle of blue mussels and the importance of maintaining mussel beds with highly reproductive size classes; (2) potential damage to eelgrass and mussel beds, and; (3) the importance of the refuge to avian resources and the importance of blue mussels to, and size selection by, those avian resources. We focus on common eiders, other seaducks (white-winged scoters, black scoters, long-tailed ducks), American oystercatchers, and red knots, but also acknowledge here that other species of birds feed on mussels. In the avian sections below, many of the prey sizes are given in millimeters, and we note that 50.8 mm = 2 inch (in).

Maintaining Reproducing Mussel Populations

We recognize that mussel populations on Monomoy NWR are cyclical and somewhat unpredictable given the highly dynamic system of wave and wind energy, and shifting sands. We cannot find evidence that mussels grow prolifically on the intertidal and subtidal zones of Monomoy NWR, as one commenter suggested, but would appreciate receiving additional information regarding this. In chapter 2, we note that mussel dragging occurred along the northwestern and eastern flats of North Monomoy Island from 2008 to 2011, but that harvesters redirected their efforts to mussel beds in Chatham Harbor in 2012. Refuge staff also documented mussel harvesting on the northeastern end of North Monomoy Island in 2006 (USFWS unpublished information 2006). Refuge staff have not systematically surveyed mussel bed locations or sizes, and we welcome additional information regarding past locations of mussel beds and mussel harvest activity on the refuge.

When mussel beds naturally form on Monomoy NWR, we feel it is important to maintain and protect a diversity of sizes and ages which are fed on by a variety of avian species (as discussed below). We believe protecting highly reproductive size classes of mussels will also provide a resource of smaller mussels. The Town noted that the 2-inch minimum size will “...ensure a sustainable fishery by allowing mussels to reach sexual maturity and provide a number of spawns before reaching legal size for the harvest” and they cite Newell and Moran (1989). Newell (1989) provides a very detailed species profile of blue mussel but we do not find information in this report to corroborate the statement that mussels at Monomoy NWR will provide a “number of spawns” before reaching legal size for harvest. Newell (1989) notes great variability with respect to growth rates, reproductive cycles, and spawning strategies, the difficulty in predicting these, and the importance of

environmental factors, including food supply (see also Newell et al. 1982 and Seed 1976 for further discussion and review of these factors). Newell (1989) notes that “Mussels generally produce gametes and are ready to spawn by the time they are one year old; however, when adverse environmental conditions (e.g., prolonged periods of exposure to air) cause a slow rate of growth, sexual maturity is sometimes not attained until the second year.” Seed (1976) provides a review of historic literature of spawning periods and settlement periods, including several sites on the North American east coast, which generally suggests spawning from April through August and settlement from June through September, depending on the location, but it is clear from this review that there is a tremendous amount of local variability, and generalizations to additional locales are not appropriate. This is further confounded by the fact that mussels have two settlement periods: (1) a primary settlement of early juveniles which attach to a filamentous substrate away from the mussel bed using byssus threads, and (2) secondary settlement of later plantigrades that release from their filamentous substrate when they are about 1.5 mm, and reestablish on existing mussel beds by producing new byssus threads (Seed 1976, Bayne 1976). Seed (1976) also provides a review and summary of growth rates of mussels from several different studies and localities, which shows tremendous variability ranging from one population attaining 100 mm shell length in 2 years to another population attaining only 10 mm shell length in 6 years (see Seed 1976 for graph and references to these other studies).

We are not aware of information for naturally occurring mussel beds that is specific to Monomoy NWR (or outer Cape Cod), and without information regarding how fast mussels grow, and when and how often they spawn, the number of spawning events that occur at Monomoy NWR mussel beds prior to reaching a 2-inch minimum size is simply unknown. Further, if our purpose is to maintain mussel beds with a diversity of ages and sizes, we need to consider that there is evidence of changes in the reproductive potential of mature mussels through time. In a study of blue mussels in Newfoundland, Thompson (1984) found that reproductive effort “was an increasing function of age” which reached a maximum in 12-year old mussels for this particular population. They conclude that gamete production increased throughout the mussel’s life span, even though they found somatic (non-reproducing parts) production gradually decreased in mussels older than 6 years. They also considered residual reproductive value, which is the future reproductive potential of an organism (and thus incorporates survival probabilities) and found that mussels of intermediate age possessed the greatest residual reproductive value. Although we cannot assume gamete production and residual reproductive values found in this study in Newfoundland are replicated at Monomoy NWR, this certainly suggests that harvest of mussels that have just reached the 2-inch size could result in harvest of mussels that have not yet reached their maximum reproduction potential, especially if mussels on and around Monomoy NWR grow quickly. This could in turn impact the longevity of localized mussel beds and the availability of a variety of size classes for avian resources.

Given the likely cyclical and ephemeral nature of blue mussels on Monomoy NWR, we are also concerned about other potential pressures on mussels. For example, blue mussel declines are now being reported in the Gulf of Maine, especially in Casco Bay. Potential causes include warming ocean temperatures, invasive predators, ocean acidification, disease, and over-harvesting (<http://www.theforecaster.net/news/print/2015/01/22/mussel-weakness-massive-decline-casco-bay-poses-qu/222678> ; last accessed February 2015).

In summary, we do not have enough information about blue mussel settlement and growth at Monomoy NWR to confirm that the 2-inch size limit is sufficient to sustain highly productive populations where they naturally occur. Further, there is evidence to suggest that allowing mussels to grow longer, may actually increase overall productivity, and thus provide longer-term benefits to the birds that utilize them. If studies about naturally occurring blue mussel beds at Monomoy NWR, or this general region of Cape Cod, become available, we hope they will be brought to our attention so we can further evaluate this issue.

Potential Damage to Eelgrass and Mussel Beds

Contrary to a comment that was submitted that “mussels do not set in eelgrass,” we find evidence in the literature that blue mussels do use eelgrass in the northeastern US (Bologna et al. 2005, Neckles et al. 2005, Disney et al. 2011). Several commenters cited lack of evidence of impacts of mussel harvesting on eelgrass and mussel beds. The Town specifically noted that Neckles (2005), which we believe is Neckles et al. (2005), does not provide justification for banning mussel harvesting. The Town’s mussel harvesting regulations prohibit hydraulic dredging for mussels, which may be an attempt to minimize disruption to the sediment and benthic communities. However, they do allow tooth dredges and we are concerned about disruption to entire mussel beds as a result of this harvesting technique. Although several commenters noted that undersized mussels are

returned to the area, we find no evidence or studies that show that these smaller mussels survive, and find no studies regarding the likelihood of these mussels reattaching at the original site.

Additionally, in the draft finding of appropriateness for mussel harvesting (appendix D), we noted that the most common harvest techniques for non-subterranean shellfish (such as dragging and mechanical dredging) are so efficient that mussel beds can be depleted very quickly. We acknowledge that this claim is not supported by the Town, and perhaps others. However, refuge staff have observed this exact occurrence on Monomoy NWR before. In July 2006, a mussel harvester was observed harvesting mussels on the northeastern end of North Monomoy Island. The majority of the mussel bed was harvested in a very short period of time, such that only a strip of mussels, which may have been mistakenly missed by the harvester, remained visible less than 2 weeks later (Figure K-1; USFWS unpublished data 2006).

Figure K-1. The remnants of a blue mussel bed on the northeastern end of North Monomoy Island on July 18, 2006, following harvesting activity. (Photo credits: Stephanie Koch, USFWS)



Common Eiders

In chapters 2 and 3, we briefly noted the importance of the waters on and around Monomoy NWR to common eiders, and referenced mid-winter waterfowl surveys conducted from 2005 to 2012 (Klimstra 2012, see table 2.6 in final CCP/EIS). We also pointed the reader to the Massachusetts Comprehensive Wildlife Conservation Plan (MA DFG 2006; <http://www.mass.gov/eea/docs/dfg/dfw/habitat/cwcs/mass-cwcs-final.pdf>; last accessed June 2015), which the Town noted was insufficient regarding the importance of mussels to common eiders in Massachusetts. Thus, we elaborate on common eiders in Massachusetts and provide

more detailed information about blue mussels as a food item here. Our management efforts are not directed to protecting common eiders so that they can be hunted. Our intention is to protect habitat to sustain healthy eider populations, although population levels are used to determine bag limits and hunting seasons. See our response to the larger question about our management efforts and waterfowl hunting in Section 6 of this appendix.

The Service conducted surveys of wintering sea ducks on more than 200 transects from 2008 to 2011 to characterize their winter distribution from Maine to Florida (Silverman et al. 2013; these surveys targeted more habitat than the mid-winter waterfowl surveys cited in chapter 2) and found that “Densities of the two species with the most northerly distribution, white-winged scoter and common eider, were highest near Cape Cod and Nantucket.” Beuth (2013) also documents the importance of southern New England to wintering common eiders. Although the population of common eiders appears to be stable, they are listed as High Relative Conservation Priority by the Sea Duck Joint Venture (2007), and we believe there is still reason to be concerned about this species and potential impacts from human activities, environmental changes, or disease. For example, cyclic common eider mortality events have been documented along the coast of Cape Cod for over 15 years, and researchers suspect a new orthomyxovirus (termed Wellfleet Bay virus) is the cause. “Between 1998 and 2013, 12 separate mortality events were documented in common eiders (*Somateria mollissima*) along the coast of Cape Cod, MA, USA. The number of sick or dead eiders observed during these outbreaks typically averaged between 200 and 600 birds; however, a mortality event involving approximately 3,000 eiders was documented from August to October 2007.” (Allison et al. 2015).

“Common Eiders are diurnal feeders and dive to pick mollusks and crustaceans from the sea bottom in water depths generally ranging from 10 to 20 meters” (Goudie et al. 2000). However, they will also feed in shallow areas “where wave action and tide result in relatively extensive intertidal zones” (Goudie et al. 2000). The importance of mussels as a prey to common eiders on the northeast U.S. coast and elsewhere, and the means by which eiders consume mussels (swallowed whole and ground by gizzard) has been well documented

(Cottam 1939, Madsen 1954, McGilvrey 1967, Guillemette et al. 1996, Goudie et al. 2000). For example, Cottam (1939) dissected 96 eider adults collected in January, February, July, November, and December, from Rhode Island, Massachusetts, Maine, and Nova Scotia northward to Labrador and Hudson Bay to determine food percentages. He found that mollusks comprised 82 percent of food items, and blue mussels specifically comprised 67 percent of food items. He writes “This bivalve enters into the diet of all species of coastal waterfowl, and no other marine or coastal animal species is so important as a food for American waterfowl, yet with no other bird is it of such great value as with our common east coast eider duck, comprising as it does more than two-thirds of its total food. In fact, no other duck subsists to such an extent upon any single food species.” Similarly, McGilvrey (1967) examined gizzards of 70 common eiders from Maine, New Hampshire, Massachusetts, Connecticut, and New York (including 45 collected from waters adjacent to Monomoy NWR) and reported that blue mussels were found in 87 percent and comprised 70 percent of the total volume.

Literature regarding prey size selection of blue mussels varies widely. We acknowledge that there is ample literature showing that common eiders prey on mussels smaller than 2 inches (Cottam 1939, Bustnes and Erikstad 1990, Guillemette et al. 1996, Higerloh and Pfeifer 2011). For example, Cottam (1939) notes in his analysis of 96 adult eiders that “Although mussels of nearly all sizes from tiny young to mature shells were consumed, it is apparent that shells up to three-fourths mature size were most frequently taken...” and “The gullet of another bird contained 11 entire mussels ranging from 1 1/8 by 5/8 inches to 1 9/16 by 3/4 inches; and the stomach or gizzard of the same bird, 6 entire mussels from 7/8 by 1/2 inch to 1 1/2 by 3/4 inches and remains of 7 more.” As another example, Guillemette et al. (1996) analyzed gizzards and esophagi of 234 eiders collected between mid-December and late April in Quebec, Canada, and found blue mussel “...ranged from 1 to 25 mm in shell length with a mode at 7-8 mm (n=5600)...”

Although published literature provides evidence for selection of smaller mussels by common eiders, there is also evidence of selection of mussels approaching the 2-inch length size, or even larger. In fact, blue mussels measuring 8 cm (over 3 inches) were documented in eider stomachs collected in Denmark primarily from October to February in 1941 (Madsen 1954). We acknowledge that ingestion of mussels greater than 3 inches may not be common, but it corroborates our assertion that eiders do not only eat small mussels. Hamilton et al. (1999) studied size selection of blue mussels by common eiders in New Brunswick, Canada, during all four seasons. Their study was a controlled study and only four length classes of mussels were made available to eiders (10 to 19 mm, 19 to 28 mm, 28 to 37 mm, and 37 to 50 mm). The authors found that larger mussels were selected specifically in the winter time. The authors note that at one of the study sites, ducks fed on the two smallest length classes, but not the largest length class, for most of the year. However, in the winter “The largest mussels (37 to 50 mm) were the most preferred, although others were also selected, probably after all large mussels had been removed...” The authors suggest that the preference for larger prey in the winter time may be related to “changes in the costs and benefits of feeding on prey of different lengths at different times of the year...” In the winter time, there is not much variation in shell mass relative to length, resulting in more mussel meat per shell in larger mussels in the winter time, compared to other times of year. “Ducks selected prey that allowed them to minimize shell ingestion when large differences between length classes were evident (most of the year). However, when shell mass was least variable among mussel length classes, common eiders appeared to switch tactics in an attempt to maximize short-term energy intake by taking large mussels.” It is possible that if mussels greater than 50 mm had been made available in this study, they would have also been selected by foraging common eiders. Importantly, these authors also note that their results emphasize the need to consider prey selection within the context of prey availability (including abundance of undesirable prey), seasonality, and local habitat conditions.

Although we are unable to find any published literature regarding mussel size selection by common eiders on Cape Cod, photo documentation of common eiders with large mussels in their mouth exists for Chatham. For example, on January 23, 2014, a male eider was observed in the waters off the Chatham Fish Pier, Chatham, MA consuming a very large blue mussel (Figure K-2). A female eider was similarly observed with a very large mussel that same day. Measurements from an adult male common eider specimen show that the length from the gape to the tip of the lower mandible is approximately 2.75 inches (Mark Faherty personal communication 2015, Mass Audubon Wellfleet, MA), providing evidence that common eiders can and do eat mussels greater than 2 inches in length. Similar photos of eiders with very large mussels in their mouths (from other locations) abound on the internet.

Figure K-2. A male common eider consumes a large blue mussel in the waters off the Chatham Fish Pier, Chatham, Massachusetts, on January 23, 2014. (Photo credit: Mark Faherty, Massachusetts Audubon Society)



In response to the comment regarding eiders being “big strong ducks” that “fly great distances on a daily basis as they trade back and forth along the coast from loafing areas to feeding spots,” and the additional comment that dispersal of foraging areas over a larger area “provides greater opportunity for unmolested feeding because it does not concentrate the feeding ducks over single large mussel beds,” we do not find scientific evidence to validate these claims. In fact, Guillemette (1998) states that “In winter, they forage non-stop from

one foraging cycle to the other with only a few roosting bouts breaking this pattern during the day.” This study, conducted on the northern Gulf of Saint Lawrence, Quebec, Canada, found that the percentage of time that common eiders feed is higher in mid-winter (56 percent of the day) versus spring (33 percent of day). The author also notes that “When facing reduced daylight eiders may first decrease the proportion of resting bouts within a foraging cycle.”

Finally, studies on the impacts of commercial bivalve harvesting on wintering birds have shown alarming consequences. For example, researchers in the Dutch Wadden Sea found that large scale blue mussel harvesting impacted wintering common eider populations. When comparing periods of high blue mussel biomass availability to low biomass availability, they found “blue mussels declined in the Eiders diet, numbers of Eiders with empty stomachs increased and the mean length of blue mussel taken by Eiders decreased (Laursen et al. 2009).” Although the overall blue mussel biomass and scale of harvesting in this study may be much greater than at Monomoy NWR, the study illustrates the impacts that overharvest can have on common eiders.

In summary, despite the lack of published scientific information that common eiders regularly eat mussels larger than 2 inches in length at Monomoy NWR, there is sufficient information proving that they can and do eat mussels greater than 2 inches. Although the frequency of this has not been studied, the occurrence is great enough for it to be photographed and documented in some literature. This evidence, combined with the importance of Cape Cod and Monomoy NWR to wintering common eiders, recent concerns regarding Wellfleet Bay virus on the wintering population, and evidence of blue mussel harvesting impacting common eiders elsewhere, provide sufficient justification for protecting blue mussels of all sizes for common eiders at Monomoy NWR.

Other Sea Ducks—White-winged Scoters, Black Scoters, and Long-tailed Ducks

Scoter species and long-tailed ducks were briefly mentioned in chapter 2 of the draft CCP/EIS, but the importance of Cape Cod and Nantucket (and southern New England in general) to wintering white-winged scoters, black scoters, and long-tailed ducks was not specifically discussed. As noted in the discussion of common eiders above, the Service conducted surveys of wintering sea ducks on more than 200 transects from 2008 to 2011 to characterize their winter distribution from Maine to Florida (Silverman et al. 2013) and found that “Densities of the two species with the most northerly distribution, white-winged scoter and common eider, were highest near Cape Cod and Nantucket.” Additionally, Silverman et al. (2013) found that wintering long-tailed ducks were “most abundant around Cape Cod, Nantucket Shoals, and in Chesapeake Bay.” Loring et al. (2014) also confirms the importance of southern New England to wintering black scoters. White-winged scoters, black scoters, and long-tailed ducks are all likely declining and the Atlantic wintering populations of all three of these species are listed as High Relative Conservation Priority by the Sea Duck Joint Venture (2007).

The importance of blue mussels to seaducks is also well established, especially for scoters. On wintering areas, mollusks (especially blue mussels) are an important food item for white-winged and black scoters (Cottam 1939, McGilvrey 1967, Bordage and Savard 1995, Brown and Fredrickson 1997). Cottam (1939) dissected 819 white-winged scoters collected in all months except June and September, from 16 States and 5 Canadian Provinces (though 83 percent were from the Massachusetts and Washington coasts). Mollusks comprised 75 percent of all food, and blue mussels (and other Mytilidae) comprised nearly 12 percent of all foods. Cottam (1939) also dissected 124 black scoters collected in all months except April and August from 9 states and 4 Canadian Provinces. Mollusks comprised 65 percent of all food, and blue mussels comprised 24 percent of all foods. Cottam (1939) notes that blue mussels "...entered into the diet of about half the birds, ranging from a trace to 100 percent of the meal, and one stomach contained 78 of these abundant mussels. Other bivalves were freely taken, however, often in large numbers, suggesting that availability rather than choice is the principal factor governing their consumption." McGilvrey (1967) examined gizzards of 124 white-winged scoters collected from Maine, New Hampshire, Massachusetts, Connecticut, and New York and reported that overall, blue mussels were found in 11 percent and comprised 8 percent of the total volume. However, among Massachusetts birds, blue mussels were found in 33 percent of the birds and comprised 34 percent of the total volume. Only 17 black scoter gizzards were analyzed in this study, but almost 50 percent contained blue mussels, and blue mussels comprised more than half of the total volume. Although mollusks, and blue mussels in particular, were found to be less prevalent in the diet of long-tailed ducks compared to white-winged and black scoters (Cottam 1939, McGilvrey 1967), they were still found to be a food item (Cottam 1939). Additionally, Madsen (1954) found that mollusks were the most frequently eaten food in a study of 113 long-tailed ducks collected from saltwater localities in Denmark. Further, 44 percent of these birds had been feeding on blue mussels.

In addition to information regarding the importance of this region to seaducks, and the importance of blue mussels as a prey item, there is literature to support the notion that some seaducks will prey on bivalves that are 2 inches or longer in length. We were not able to find information specific to Monomoy NWR or Chatham, but Anderson et al. (2008) synthesized past diet studies and collected additional specimens of white-winged scoters, and found that the overall mean length of bivalves eaten was approximately 25 to 30 mm, while the overall maximum length was approximately 55 mm. We acknowledge that blue mussels smaller than 2 inches are most prevalent seaduck diets, but for reasons discussed above, we believe protecting mussels of all size classes for white-winged scoters, black scoters, and long-tailed ducks (in addition to common eiders) is justified.

American Oystercatchers

We have already noted the importance of Monomoy NWR to nesting and post-breeding staging American oystercatchers in chapters 2 and 3. We also noted that mussels are a common food source for American oystercatchers and pointed the reader to the American Oystercatcher Working Group's webpage on the food habits of oystercatchers: <http://amoywg.org/american-oystercatcher/food-habits/>; (last accessed June 2015). The information on this page comes from the recently updated Birds of North America Species Account (Nol and Humphrey 2012), and provides numerous references regarding food habits of this species. Thus, we disagree with the Town's assertion that this is a "light review." Nol and Humphrey (2012) do include information (and citations, many of which are available at the American Oystercatcher Working Group website above) for food habits throughout the species range, not just in Massachusetts. Specifically, from Massachusetts to New Jersey, the webpage notes that prey includes (but is not limited to) bivalves such as blue mussels, ribbed mussels (*G. demissa*, *Modiolus plicatus*), soft-shell clams, surf clams (*Spisula solidissima*), stout razor clams (*Tagelus plebeius*), razor clams (*Ensis directus*), and hard clams (*Mercenaria mercenaria*). In more southerly areas (Virginia, North Carolina, South Carolina, Georgia, and Florida), they also feed on invertebrate species that have ranges overlapping in the south, as well as additional bivalves such as oysters (*Crassostrea virginica*); for a full review of prey items and associated references, see Nol and Humphrey 2012 or <http://amoywg.org/american-oystercatcher/food-habits/>. The Town's reference to Hand et al. (2010) and quoted text, "which states mussels comprise just 4% of total oystercatcher diet in South Carolina" as a means for suggesting that mussels are not an important part of oystercatchers' diet in Massachusetts is inappropriate and out of context. This study in South Carolina was conducted during the nonbreeding season when American oystercatchers are concentrated in areas with expansive oyster reefs (Hand 2008; Hand personal communication 2015, South Carolina Department of Natural Resources, Green Pond, SC).

American oystercatchers feed on bivalves in a different manner than eiders and scoters, and this is described in detail in Nol and Humphrey (1994). "When feeding on mussels or oysters, they locate food visually, wading through slightly submerged shellfish beds...When a bivalve with open valves is located, the oystercatcher

employs a technique known as ‘stabbing,’ whereby it quickly inserts its knife-like bill into the open valves, and with several quick thrusts severs the adductor chain that holds the two valves together. The bird then cleans out and consumes the soft parts.” American oystercatchers also feed by taking an individual mussel from a bed and using a “hammering” technique, which is also described by Nol and Humphrey (1994). “They orient it properly with their bill and begin hammering at the point where the adductor chain lies inside the shell. Once they have broken through the shell, they quickly sever the adductor chain, allowing the 2 halves of the bivalve to separate. The soft parts are then consumed completely.”

Although there are no scientific studies for Massachusetts that quantify the relative abundance of blue mussels in American oystercatchers’ diets, we know mussels are an important food source where they overlap the oystercatchers range (Newell 1989, and see Nol and Humphrey 1994 as discussed above). Additionally, documentation of American oystercatchers feeding on mussel beds in Massachusetts are easily found on the internet, including this video from Wellfleet, MA, <https://www.youtube.com/watch?v=Sg6taSYiLE> (last accessed February 2015).

Although we do not have scientific studies quantifying the sizes of blue mussels that are eaten by American oystercatchers, there is sufficient evidence to support the notion that they can and do eat blue mussels (and other mollusks) that are 2 inches or larger in length. For example, Figure K-3 shows a juvenile American oystercatcher feeding on a blue mussel at Tern Island, Chatham, MA, on August 27, 2012. This juvenile originally hatched from Kalmus Beach in Hyannis, Massachusetts, on approximately June 5, 2012, and would have had a bill length the size of an adult by the end of August (Shiloh Schulte personal communication 2015, Manomet Center for Conservation Sciences, Manomet, MA). Adult male and female American oystercatchers have an average exposed bill length of 83 mm and 92 mm, respectively (Nol and Humphrey 1994). From this photo the reader can see that the blue mussel is approximately 80 percent the length of the juvenile’s bill, so even if we assume that the bill is only 80 mm long, the blue mussel must be approximately 64 mm long, which is well over 2 inches.

Figure K-3. A juvenile American oystercatcher feeding on a blue mussel, Tern Island, Chatham, Massachusetts (Photo credit: Mark Faherty, Massachusetts Audubon Society)



Similarly, observations from field biologists at other sites provide evidence that American oystercatchers can and do eat mollusks larger than 2 inches in length. For example, biological staff in Virginia found ribbed mussels larger than 2 inches that have been cracked open by adults and fed to American oystercatcher chicks (Pamela Denmon personal communication 2015, Eastern Shore of Virginia/Fisherman Island NWR, Cape

Charles, Virginia). Among species of bivalves actually measured at American oystercatcher middens in Virginia from 1981 to 1983, northern horse mussels (*Modiolus modiolus*) averaged 85 mm in length and razor clams (*Ensis* species) averaged 125 mm in length (Nol 1984; Erica Nol personal communication 2015, Trent University, Peterborough, Ontario). Similarly, in southeastern North Carolina, biological staff monitoring 85 to 90 nesting pairs of American oystercatchers regularly find ribbed mussels at the nest sites where parents are feeding their chicks. Observed ribbed mussels are nearly all longer than 2 inches, and staff estimate an approximate average length of 3 inches or greater. Razor clams (*Tagelus* species) exceeding 2 inches in length

are also brought by adult American oystercatchers to these nest sites in North Carolina (Lindsay Addison personal communication 2015, Audubon North Carolina, Wilmington, NC).

Although we do not have published documentation that American oystercatchers eat blue mussels larger than 2 inches in length at Monomoy NWR, we feel there is sufficient documentation of American oystercatchers eating blue mussels and other mollusks greater than 2 inches in length throughout their range to reasonably conclude that this also occurs on Monomoy NWR. We feel this, combined with the overall importance of the refuge to American oystercatchers during the breeding season and post breeding staging period, warrants protection of mussel beds with a variety of size classes, including those larger than 2 inches in length.

Red Knots

We have already noted the importance of Monomoy NWR and this region of Cape Cod to migrating red knots in Chapters 2 and 3. We also note the importance of blue mussel spat to red knots migrating through the area and reference Harrington et al. (2010b). Although this paper does not contain scientific analysis of red knot gut contents, and was based on observations, we disagree with the Town's opinion, and feel that this reference is completely appropriate as supporting documentation for the importance of mussel spat (i.e. juvenile stages) to red knots migrating through Cape Cod. This reference has been published in a well-respected peer reviewed journal, and the lead author has decades of experience studying red knots in southeastern Massachusetts. Moreover, several hundreds of birds were frequently counted and observed during observation days in this study, so we disagree with the Town's comment that "The number of knots observed is very low."

On December 11, 2014 (after the draft CCP was released for public review), red knots were listed as a Federal threatened species under the Endangered Species Act (ESA). Given the importance of Monomoy NWR and Cape Cod to southward migrating red knots, we need to be even more cautious about protecting the habitats they rely on while foraging and resting here. The Final Rule published in the Federal Register for the listing of the red knot can be reviewed here: http://www.fws.gov/northeast/redknot/pdf/2014_28338_fedregisterfinalrule.pdf (accessed October 2015). A supplemental document to the listing was also made available (Rufa Red Knot Background Information and Threats Assessment) and can be found here: http://www.fws.gov/northeast/redknot/pdf/20141125_REKN_FL_supplemental_doc_FINAL.pdf (accessed October 2015).

The supplemental document (USFWS 2014) provides a very thorough account of peer reviewed literature regarding feeding ecology and food preferences, and we point the reader there for specific details and dozens of references. For example, on page 14 of the supplemental document, the authors note that red knots are "specialized molluscivores" that swallow mollusks whole and provide numerous references relevant to foraging ecology and food preferences. Specifically:

"Across all (six) subspecies, *Calidris canutus* is a specialized molluscivore, eating hard-shelled mollusks, sometimes supplemented with easily accessed softer invertebrate prey, such as shrimp- and crab-like organisms, marine worms, and horseshoe crab eggs (Piersma and van Gils 2011, p. 9; Harrington 2001, pp. 9–11). The mollusk prey is swallowed whole and crushed in the gizzard, which in *C. canutus* is the largest (relative to body size) among any shorebird species evaluated (Piersma and van Gils 2011, pp. 9–11). Large gizzards are among this species' adaptations to a mollusk diet, allowing *C. canutus* to grind the hard shells of its prey. *Calidris canutus* prefer thin-shelled to thick-shelled prey species because they are easier to digest and provide a more favorable meat to mass ratio (higher prey quality) (van Gils et al. 2005a, p. 2611; Harrington 2001, p. 11; Zwarts and Blomert 1992, p. 113). From studies of other subspecies, Zwarts and Blomert (1992, p. 113) concluded that *C. canutus* cannot ingest prey with a circumference greater than 1.2 in. (30 millimeters (mm)). For rufa red knots, prey lengths of 0.16 to 0.79 in. (4 to 20 mm) have been observed (Cohen et al. 2010b, pp. 359–360; González et al. 1996, p. 575). Foraging activity is largely dictated by tidal conditions, as *C. canutus* rarely wade in water more than 0.8 to 1.2 in. (2 to 3 cm) deep (Harrington 2001, p. 10). Due to bill morphology, *C. canutus* is limited to foraging on only shallow-buried prey, within the top 0.8 to 1.2 in. (2 to 3 cm) of sediment (Gerasimov 2009, p. 227; Zwarts and Blomert 1992, p. 113). Along the U.S. coast, *Donax* and *Mulinia* clams and blue mussel (*Mytilus edulis*) spat are key prey items. A prominent departure from typical prey items occurs each spring when red knots feed on the eggs of horseshoe crabs (*Limulus polyphemus*), particularly during the key migration

stopover within the Delaware Bay. Delaware Bay serves as the principal spring migration staging area for the red knot because of the abundance and availability of horseshoe crab eggs (Clark et al. 2009, p. 85; Harrington 2001, pp. 2,7; Harrington 1996, pp. 76–77; Morrison and Harrington 1992, pp. 76–77). In Delaware Bay, horseshoe crab eggs are a superabundant source of easily digestible food.”

On pages 70 and 71 of the supplemental document, the authors provide more information regarding prey and size selection, along with references. Specifically:

“*Calidris canutus* prefer thin-shelled to thick-shelled prey species because they are easier to digest and provide a more favorable meat to mass ratio (higher prey quality) (Harrington 2001, p. 11; Zwarts and Blomert 1992, p. 113). From studies of other subspecies, Zwarts and Blomert (1992, p. 113) concluded that *C. canutus* cannot ingest prey with a circumference greater than 1.2 in. (30 millimeters (mm)). Rufa red knots in San Antonio Oeste, Argentina, were found to select mussels between 0.20 and 0.79 in. (5 and 20 mm) long out of an available range of 0.04 to 1.10 in. (1 to 28 mm) (Cohen et al. 2010b, p. 360; González et al. 1996, p. 575). In Virginia, the length of *Donax* clams averaged 0.16 in. (4.12 mm) in red knot foraging habitat during the peak of spring migration, and red knot flock sizes were positively correlated with mean *Donax* length (Cohen et al. 2010b, pp. 359–360). Foraging activity is largely dictated by tidal conditions, as *C. canutus* rarely wade in water more than 0.8 to 1.2 in. (2 to 3 cm) deep (Harrington 2001, p. 10). Due to bill morphology, *C. canutus* is limited to foraging on only shallow-buried prey, within the top 0.8 to 1.2 in. (2 to 3 cm) of sediment (Gerasimov 2009, p. 227; Zwarts and Blomert 1992, p. 113). 71

Table 1 gives prey items that have been reported for rufa red knots in wintering and migration areas. Though eaten by *C. canutus* at one location in Cape Cod, Massachusetts (*rufa*) and one site in California (*roselaari*), the thick, hard-shelled gem clam is rarely eaten despite its abundance in other red knot nonbreeding areas, including western Cape Cod Bay (fall migration) and Delaware Bay (spring migration) (Harrington et al. 2010b, pp. 361–362; Harrington 2001, p. 11). During fall migration in Cape Cod, Massachusetts, Harrington et al. (2010b, p. 361) found prey differences between northern-wintering (gem clams) and southern-wintering (blue mussels, *Mytilus edulis*) red knots; see Migration—Differences in Migration Strategy by Wintering Area.

Red knots and other shorebirds that are long-distance migrants must take advantage of seasonally abundant food resources at migration stopovers to build up fat reserves for the next nonstop, long-distance flight (Clark et al. 1993, p. 694). During the migration period, although foraging red knots can be found widely distributed in small numbers within suitable habitats, birds tend to concentrate in those areas where abundant food resources are consistently available from year to year. The spatial distribution of red knots in Argentina, Georgia, South Carolina, Virginia, the Atlantic coast of New Jersey, and Delaware Bay stopover areas has been correlated with the distribution of the primary prey species (Georgia Department of Natural Resources 2013; Thibault and Levisen 2013, p. 6; South Carolina Department of Natural Resources 2013, p. 37; Musmeci et al. 2011; Fraser et al. 2010, p. 97; Cohen et al. 2010b, p. 355; Cohen et al. 2010a, pp. 659, 660–661; Niles et al. 2008, pp. 17, 19; Smith et al. 2008, p. 15; Karpanty et al. 2006, p. 1706; Botton et al. 1994, p. 605).”

The extensive literature review in this supplemental document presents the most recent, comprehensive compilation of information relative to red knot foraging ecology. The importance of Monomoy NWR to red knots is well established in the literature. The importance of mussels as a prey item is also well established in the literature. The small size classes of mussels that red knots depend upon only occur if healthy, productive mussel beds also occur. Red knot is a Federal listed species, and we believe protection of mussel beds on Monomoy NWR, through a ban on human harvest, is absolutely justified.

Summary

In conclusion, we have decided not to change our original proposal to ban mussel harvesting on Monomoy NWR. We believe mussel beds on Monomoy NWR are likely cyclical and ephemeral. We have not found

sufficient information regarding mussel growth, reproduction, and settlement to determine the impacts of harvesting 2-inch mussels on the longevity and persistence of mussel beds. We have found an abundance of literature to support our position that several species of conservation concern rely on mussel beds as a food source. We also acknowledge the lack of scientific information with respect to certain aspects of this decision making process, but contrary to commenters, we conclude that this uncertainty provides added justification for protecting these mussel beds until more information is presented and the uncertainty is reduced. We have updated text throughout the CCP to incorporate the additional justification presented in this response.

Mussel Harvesting—Support for Ban

(ID# 234)

Comment: One individual wrote in support of limits on mussel harvesting because of the importance of mussels to migrating red knots. “Protecting mussel populations in and around the refuge, so that a large set of mussel spat can occur annually is very important...Protecting food sources (mussel spat and horseshoe crab eggs) along the migratory track is essential.”

Response: We agree that protecting and maintaining productive mussel beds (where they naturally occur) is important. We have decided to maintain a ban on mussel harvesting on Monomoy NWR and have provided a detailed justification for this decision under the section “Mussel Harvesting—Opposition to Ban” in this appendix. We have also updated text in the final CCP/EIS to reflect the additional justification we provide in this appendix.

Salting—Opposition to Ban

(ID# 64, 91, 136, 164, 229, 250, 273, 294)

Comment: The Town and several other commenters did not support our proposal to ban the use of salt to harvest razor clams, and multiple commenters noted that salt should be allowed to harvest sea (surf) clams as well.

Reasons for opposing the ban on salt included:

- Razor clams are a valuable target species for commercial harvesters.
- There are no scientific studies showing salting is detrimental or that there are adverse effects on local habitat or refuge resources. One commenter also noted that very little information is available about razor clams. Additionally, the Town cited research conducted by Constantine et al. (2008) and Krzyewski et al. (2005) as evidence that there are “no effects to the benthic community” and that the “marine environments are adaptable to fluctuating salinity levels.”
- The ban on salting is not needed because the Town already has regulations in place that were based on science, and these regulations maintain and promote the species while protecting habitat. Specific regulations and restrictions noted by commenters included:
 - ◆ Harvesting of razor clams and sea clams by salting is only allowed where there are no other species (such as softshell clams or quahogs) present. Areas of mixed species are determined by the Shellfish Constable.
 - ◆ Salting has been defined by the Town as a “saline solution derived solely from table salt and water.”
 - ◆ Only a diluted saline solution is allowed; dry salting and broadcast salting (spreading dry salt) are not allowed.
- The MA DMF has no regulations about razor clams and most Towns do not even mention razor clams in their shellfish regulations.

Response: We understand and appreciate the desire for access to the razor clam fishery on the refuge. We also appreciate the proactive efforts of the Town and the Shellfish Advisory Committee to enact regulations for razor clam harvesting, and agree that these regulations may help protect this valuable shellfishery throughout

the Town. However, we have decided to maintain a ban on salting for all shellfish harvested above MLW on the refuge for several reasons, as explained below.

We agree that rigorous scientific studies evaluating the impacts of salting are currently lacking. There is a scarcity of information documenting potential negative impacts of salting on target species, non-target species, and the benthic environment. However, the same statement applies to information documenting no negative impacts. Constantino et al. (2009) studied the impacts of salting in a Before-After-Control-Impact study in southern Portugal and concluded no significant impact on the sediment and no effects on the benthic communities. However, there are several aspects of this study which may fall short of corroborating the opinion that salting for razor clams (and sea clams) has no impact to the resource or benthic communities at Monomoy NWR. For example, the study only utilized three control and three experimental plots, each of which was only 2 m by 3 m. This study was very small scale. The researchers also simulated salting by “covering the area with salt during low tide,” but note that “the simulation of harvesting with salt was exaggerated, since generally the fishermen only pour salt into the sediment gallery excavated by the razor clam, instead of covering all the area with salt.” We note that this simulation may also have minimized the possible impacts to the target species. While this study provides some evidence that could allow the reader to infer that salting at Monomoy NWR may not cause significant impact to the benthic community, it is not compelling enough and does not sufficiently allay our concerns.

In particular, the study conducted by Constantino et al. (2009) does not consider the impact to the target species. The Town shellfishing regulations specify a minimum harvest size of 4 ½ inches for razor clams (Town regulation Section 305 G). Our understanding is that a harvester cannot be certain of the size of the razor clam in a burrow, until it has been salted, and the clam has expelled itself and can be measured. Thus, we are additionally concerned about impacts of salting to undersized (and thus discarded) razor clams. Krzyewski et al. (2005) studied the impacts of salting on razor clams and clam tissue in Pleasant Bay and found that high concentrations of salt solution causes mortality to razor clams. Salt solutions of 100 parts per trillion (ppt) were found to affect the cilia and cell membranes. Additionally, the study notes that harvesters typically use a salt solution of 100 to 200 ppt. We do not know if this accurately describes methods used by Chatham harvesters, but we do know that despite the requirement that salt be diluted with water, there is no regulation on the exact concentration of salt that can be used in Chatham.

Town shellfish regulations note that salting for razor clams and sea clams is only “...allowable provided there are no other species (such as softshell clams or quahogs) within the inter-tidal zone of a given area. Areas of mixed species will be assessed and determined in the sole and unfettered discretion of the Shellfish Constable” (Town regulation Section 402 A). The Town noted in their comments on the draft CCP/EIS that this was a “precautionary approach” and we therefore presume this regulation addresses their concern about potential impacts to non-target species that are also valuable to harvesters. However, the regulations currently do not relieve our concerns about impacts of salting to other species sharing this ecosystem, or to undersized razor clams.

In addition to being a valued resource to people, razor clams are an important food source to several priority species utilizing Monomoy NWR, including horseshoe crabs (Botton 1984, Walls et al. 2002) and American oystercatchers (Nol and Humphrey 1994). The importance of the refuge to these species is described in great detail in chapters 2 and 3. Impacts to the razor clam population (either inadvertent or direct harvesting pressure) could impact these species as well. We are concerned that the efficiency of harvesting with salt could lead to increased pressure on this resource and this, combined with our understanding that there are no daily limits for commercial harvesters, could result in the depopulation of razor clam beds.

Finally, we recognize that, although not as efficient as salting, it is still possible to harvest razor clams with hand tools, and hand tools are adequate for harvesting the maximum allowable weekly recreational limit of one 12-quart pail. For example, in Oregon and Washington, razor clams (*Silqua patula*) are harvested with clam shovels or clam tubes (guns) (<http://www.dfw.state.or.us/resources/fishing/docs/ClammingFlyer.pdf>, http://wdfw.wa.gov/fishing/shellfish/razorclams/howto_dig.html). Although this is a different species from our razor clam, it is similarly a fast moving and deep digging clam. Clam tubes can be homemade or purchased through a variety of common retailers. Limiting the harvest of razor clams and sea clams on the mudflats to only hand tools is also consistent with our efforts to maintain the quality of our wilderness character.

We appreciate the comments regarding salting, and understand that we did not provide enough clear justification for our proposed ban in the draft CCP. We also were not aware that salting was a viable method for harvesting sea clams. We have made changes to the text of the final CCP/EIS in several places to clarify our position. The most significant additions are below:

- We have modified Objective B2.6 (Shellfishing) in chapter 3 to include sea clams.
- We have added a summary of the justification for the ban on salting above MLW in the Rationale section for this objective.
- We have modified the strategy under this objective to include sea clams.
- We have added sea clams to the compatibility determination “Non-mechanized harvesting of subterranean shellfish above MLW without the aid of artificial extraction methods.”
- We have added the detailed justification for the ban on salting to this same compatibility determination.

Salting and Other Artificial Means of Extraction—Support for Ban

(ID# 82, 267)

Comment: The Horseshoe Crab Conservation Association supported the proposed ban on salt and chlorine, and also suggested that we add vinegar to the list of example substances that are not allowed. They subsequently retracted that suggestion as they could not confirm the efficacy of vinegar from within the fishing community. Support for the ban was also expressed by a commercial shellfisherman.

Response: As stated in the draft CCP/EIS, we proposed to ban artificial methods of extracting razor clams, including salt and chlorine. In the final CCP/EIS, we have updated both objective B2.6 (Shellfishing) in chapter 3 and the compatibility determination for the non-mechanized harvesting of subterranean shellfish in appendix D to be explicit that this ban includes any and all artificial methods for all subterranean shellfish that are harvestable from the refuge above MLW. The hand harvest of razor clams would still be allowed.

Oyster Farming

(ID# 71)

Comment: A concern was expressed about oyster farming. The commenter stated, “Lastly, recognizing this is outside the present plan, we still wish to comment that we have reservations with oyster farming. These structures are being built on public ‘land’ displacing marine life and public recreation. While we understand these farms may have their place on Cape Cod, the recent expansion in the number of locations and expanse of individual structures is concerning.”

Response: No oyster farming has occurred or is planned on the refuge. Should a proposal be made, we would evaluate the appropriateness and compatibility of this use with refuge purposes, including the concern that the placement of an oyster farm may have the potential to displace marine life and public recreation. Within the final CCP/EIS, we address oyster farming in chapter 3 of the final CCP/EIS under aquaculture in objective B 1.11 (Nearshore Marine Open Water).

Lobster, Crab, and Whelk Harvesting

(ID# 234, 235, 242)

Comment: The Cape Cod Fisherman’s Alliance agreed with the proposal to continue to allow lobster, whelk, and crab harvesting. Other commenters oppose any commercial fishing or are concerned that it be regulated as there are potentially many possible impacts on the refuge.

Response: Similar to the draft CCP/EIS, the final plan includes the proposal to allow lobster, whelk, and crab harvesting under Federal and State regulations. We propose to work with the MA DMF and the Town on an annual basis to review all fishing occurring on the refuge to ensure that fishing does not interfere with refuge resources or management. We will recommend changes to any fishing practice if we feel it is necessary to do so.

Horseshoe Crab Harvesting—Support for Ban

(ID# 72, 82, 155, 235)

Comment: Mass Audubon, the Massachusetts Committee for the Preservation of Horseshoe Crabs, and the Horseshoe Crab Conservation Association wrote in support of the continued prohibition on horseshoe crab harvesting. Collectively, commenters noted that the following points which support continued protection: (1) this protected horseshoe crab population has rebounded and is increasing while other populations on Cape Cod are still low or declining; (2) the area is successfully serving as a nursery (based on “frequent observations of many thousands of juvenile crabs”); (3) the area in and around Monomoy is now a protected source population that is contributing to horseshoe crab harvest elsewhere in Town, and; (4) horseshoe crab eggs are important to migratory shorebirds.

Response: Similar to the draft CCP/EIS, our final plan maintains a ban on horseshoe crab harvesting. Appendix D includes a finding that horseshoe crab harvest is not appropriate on the refuge.

4. Wilderness Management

Wilderness Management

(ID# 153, 155)

Comment: The Association to Preserve Cape Cod criticized several aspects about our approach to wilderness management on the refuge. Specifically, they believe we failed to properly assess, inventory, and delineate uses established prior to adoption of the Wilderness Act designation. They indicated that the priorities in the Refuge System Improvement Act overlooks the unique characteristics and challenges of Monomoy NWR and that we are advocating for a hybrid of wilderness status and public recreation. They believe the focus on “high quality visitor services” is incompatible with a designated wilderness. They indicated that we acknowledge the wilderness designation but do not properly respect it. They further stated that wilderness area boundaries subject to erosion, accretion, and reliction should be adjusted. Mass Audubon indicated that the role of Monomoy NWR’s wilderness is “vitally significant and should play a central role in associated management plans and actions.”

Response: Our management of wilderness on Monomoy NWR has evolved as Service wilderness policy has been revised (610 FW 1 to 4). We have a strong dedication to protecting wilderness and believe we can make more visitors and local residents aware of the designation through outreach programs. We participated in a Monomoy Wilderness Character Monitoring Review in 2013 which was very helpful to us, and are continuing this monitoring to ensure that visitors to the wilderness area have a wilderness experience. This may in fact mean limiting group size and it certainly means restricting certain activities that otherwise might be found on a beach and elsewhere on the refuge as they are not consistent with wilderness character. This in turn has led to other criticism. The use of concessionaires is helpful to both limit group sizes in the wilderness and to ensure that visitors receive wilderness awareness information.

Our wilderness boundary, with the exception of the excluded areas and Morris Island, is MLW. The area encompassed by wilderness will expand or retract based on the acreage of the refuge that is located above MLW. And even though the excluded areas on South Monomoy Island are not officially wilderness, we manage them as if they are.

We recognize that there are some uses of the refuge that are generally excluded from wilderness that we allow. One is the use of motorboats. This is explained in the CCP as an authorized use. Another use we allow is the hand harvest of subterranean shellfish. We believe the harvest of subterranean shellfish using harvest methods that were in place when the wilderness was designated is a traditional use that is compatible with wilderness character and is compatible with the management of wildlife.

Because we are also a national wildlife refuge that supports several Federal listed endangered and threatened species, and we have other Federal laws that we must comply with, we have an affirmative responsibility to manage our wildlife populations and their habitat as well as respect and manage wilderness character. We realize at times that some may not agree that managing habitat is consistent with wilderness management. There is no consensus about the appropriate level of management that can or should occur within wilderness

areas. We have two co-equal missions—refuge management and wilderness management. Refuge management includes wildlife conservation and compatible public uses. We conduct our activities in a manner which preserves wilderness character. Our plan presents a way to achieve both.

Addition of Nauset/South Beach to Wilderness

(ID# 64, 90, 241, 264, 296)

Comment: The Town disagreed that Nauset/South Beach should be treated as federally designated wilderness simply because it joined to existing wilderness. They stated that designating additional wilderness on the refuge would require a public process, writing “The very open and public process of the initial Monomoy NWR wilderness designation and the boundary modification process required by the Wilderness Act of 1964 stand in stark contrast to how the FWS unilaterally claimed the 717-acre parcel of Nauset/South Beach as wilderness. The FWS should have initiated a public process and sought the views of the Town and our local community.” The Town expressed their opinion that the modification of the wilderness boundary needed to follow the process outlined in the Wilderness Act. Additionally, the Town was concerned that certain uses of Nauset/South Beach, such as beach sports, grilling, and kite flying” would no longer be allowed because of the wilderness designation.

Another individual wrote, “The ‘taking’ and or further restricting of the southern portion of South Beach, part of Morris Island and the ‘Southway’ and designating portions as wilderness under the control of the refuge is unreasonable and should be left to the citizens of Chatham to oversee with a designation less than wilderness through Town Meeting policy setting, consistent with Federal and State legislation and regulation.”

Response: Much of the opposition to the expansion of the Monomoy Wilderness Area onto Nauset/South Beach is no longer an issue, as the lands east of the management boundary established in the MOU between the Service and the Town will be managed by the Town and will not be designated as wilderness. All lands to MLW west of the management boundary are Federal wilderness, as this is the designation made by Congress. We are not seeking to designate a new wilderness area and therefore do not need to follow the process outlined in the Wilderness Act for designation of new areas or adding excluded lands to existing areas. Updating the description of lands designated as wilderness because the boundary has changed through accretion or erosion is not the same as adding new areas, such as the excluded areas from the original designation.

Generally, when an ambulatory boundary (here it is MLW) is established, the upland land owner gains with accretion and loses land with erosion. As coastal islands and landforms gain and lose land all the time, a contrary rule would be impossible to use—it might literally require re-surveying day-to-day. Whatever area was encompassed within the wilderness area in 1970 has been dramatically altered by the changes which have occurred since. However, only Federal lands may be designated wilderness. If the Federal land were joined to other land by accretion, the non-Federal land would not thereby become wilderness. This is our understanding of what has happened in the Nauset/South Beach area, as discussed above. The part of Nauset/South Beach that is owned by the Town is not within the wilderness boundary, and the lands to the north and east of the management boundary are not being designated as wilderness either.

Designation of Excluded Lands and Additional Waters as Wilderness

(ID# 63, 153, 244, 264)

Comment: The Cape Cod and the Islands Group Sierra Club felt that the refuge should expand the wilderness area to include the current exclusions and marine areas, writing, “In Plan B, the USFWS chooses to leave two sections on Monomoy out of Wilderness designation. These areas should be managed to become as much as possible under the designation. The USFWS should pursue marine wilderness designation within all of it’s western boundary, not just on land. Protection of the benthic environment, including submerged aquatic vegetation, such as eelgrass, should be a priority.” The Town through its Chairman indicated that maintaining Inward Point and Powder Hole as designated non-wilderness was an issue of potential concern. We read this comment to mean that designating these areas as wilderness would be a concern.

Response: We believe that the two exclusion parcels will be formally designated as wilderness in the future, when they fully meet the criteria established by Congress in the Wilderness Act. Until that time, we will treat them as if they are wilderness to the maximum extent possible. We do not agree that lands below the MLW line but within the Declaration of Taking should be included in the Monomoy Wilderness.

Predator Control Structures in Wilderness Area

(ID# 192)

Comment: Wilderness Watch was concerned that the installation of predator control structures (e.g., fencing, nesting platform, etc.) would violate the Wilderness Act. They wrote, “The final CCP and EIS must adequately address whether the structures proposed for predator control are “necessary to meet minimum requirements for the administration of the area for the purposes of [the Wilderness] Act.”

Response: We manage Monomoy NWR both for its wildlife and wilderness purposes. These are co-equal purposes which sometimes can be at odds with one another. Much of Monomoy NWR is not actively managed by refuge staff. Our passive management allows for natural processes to occur in the majority of the wilderness area, and for wildlife to interact with each other in the habitat. However, at certain times of year, and in certain parts of the refuge, we take specific actions to protect and conserve our most imperiled and important trust resources –federally and State-listed fauna and other wildlife of major conservation concern. Included in this is the need to protect piping plovers from predators and enhance nest success for roseate terns, both of which are threatened and endangered species. The temporary physical structures we use are relatively innocuous and are only in place for a few months. Tern shelters, which are small and unobtrusive, are only used on the part of the refuge which is seasonally closed to the public to protect the tern colony. We do acknowledge that the plover exclosures are more visible and more likely to be seen by refuge visitors. We include the use of these structures for the purpose of protecting and conserving these species in our Minimum Requirements Decision Guide. Please see Appendix E in the final CCP/EIS for more information.

Limit Commercial and Recreational Uses in Wilderness Area

(ID# 192, 276)

Comment: Wilderness Watch wrote, “Commercial activities, like commercial shell-fishing, are prohibited in the Monomoy Wilderness under the...Wilderness Act...The U.S. Fish and Wildlife Service must adequately examine this violation of the Wilderness Act...and block this illegal activity with the final CCP and EIS.” Another individual wrote, “I do think it is quite appropriate to significantly limit commercial and recreational human activities within this [federally designated wilderness] area.”

Response: We are committed to the preservation of wilderness character in Monomoy Wilderness. Not only have we have modified how we conduct refuge management activities, but we are proposing modifications to visitor use in an effort to ensure that wilderness values are considered and achieved to the greatest extent possible. Some traditional recreational beach uses are not allowed because they are not appropriate or compatible with the management of refuge resources. This prohibition also supports preservation of wilderness character. We propose to institute a concessionaire system which will help support compatible recreation on the refuge. The concessionaire will provide interpretation about Monomoy Wilderness and will help ensure that visitors who access the refuge through the concessionaire are distributed throughout the refuge in a manner to preserve wilderness character.

We believe we can permit shellfishing under the Wilderness Act as long as it is compatible with refuge purposes and can be conducted in a minimally intrusive manner using hand tools and without mechanical transport or motorized equipment, and in a manner which preserves wilderness character. The Wilderness Act states that “...each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and so shall administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in this chapter, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use” 16 U.S.C. 1133(b). An historical use occurring since well before designation may accordingly be within the purposes to which a wilderness area may be devoted. The Act goes on to state that “except as specifically provided for in this chapter...there shall be no commercial enterprise and no private road within any wilderness area...” 16 U.S.C. 1133(c). However, the purpose of historical use is specifically called out in §1133(b), leading to a question of when, if ever, a historical use that is commercial might be nonetheless allowable under the Act. “A wilderness area is an area of Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primeval and unconfined type of recreation...” 16 U.S.C. § 1131. We conclude that

a historical use that does not disturb the wilderness character of an area may be permitted, even if commercial in nature, as such historical uses are within the purposes of the Act.

Commercial harvest of soft-shell clams and quahogs by private individuals on the flats predates refuge establishment by more than a century and, at a low level, does not affect the primeval landscape or interfere with the opportunities for solitude. A use of the land that was historical, does not affect the natural condition of the land, leaves the “imprint of man’s work” substantially unnoticeable, and leaves unaffected opportunities for solitude or a primeval and unconfined type of recreation, should be held within the purposes to which a wilderness area may be devoted, and may be permitted despite being commercial. A person with a rake and a basket collecting clams has no different impact on the landscape if he or she eats them, or if they subsequently sell the clams, and the Service has no effective means of ensuring that clams collected are never sold. The Service has allowed clamming since refuge establishment and has determined that commercial clamming at the same scale and in the same manner that has occurred historically is compatible under the Refuge System Improvement Act (16 U.S.C. 1668dd). We have also reviewed applicable case law, and believe that commercial clamming is within the purposes of the Monomoy Wilderness, as it is an historical use, and may be permitted so long as the methods used are those historically employed, are the minimum necessary, and that the activity does not otherwise impact wilderness character.

Wheeled Carts in Wilderness—Opposition to Ban

(ID# 59, 64, 86, 164, 181, 242, 243, 256, 259, 261, 266, 267, 279, 294, 296)

Comment: The Town, the MA DMF, and several others were concerned with the proposed restriction on the use of wheeled carts in the Monomoy Wilderness. Most felt that the ban will have a significant negative impact on local shellfisherman and that there was insufficient discussion in the draft CCP/EIS of how the prohibition on the use of carts will affect shellfishermen and the local economy. Others disagreed with our interpretation of the Wilderness Act and its ban on mechanized transport. One commenter said that “Congress did not have in mind someone pulling a simple hand cart to transport shellfish” and that Congress did not define “mechanical transport.” This same individual cites 36 CFR Sec 293.6(a) which identifies mechanical transport as any contrivance which travels over ground, snow, or water on wheels...and is propelled by a nonliving power source.” He feels that the hand carts are not propelled by a non-living power source and therefore their continued use should be allowed. Others felt that wheeled carts do not cause damage to refuge’s biological resources and/or will not detract from wilderness character. One commenter writes, “Today’s hand cart incorporates inflatable tires which effectively distribute the weight without causing harm to the resource. With two flood tides per day, any evidence left by hand cart use, much like footprints, is nonexistent.” Some were concerned that alternative forms of transportation (e.g., using sleds, dragging bags) are more likely to detract from wilderness character and damage refuge resources. The Town writes, “Without hand trucks, shellfish fishermen would have to make many trips to their skiffs, thereby leaving a larger footprint on the tidal flats.”

Response: Congress did not merely mention “motorized transport” but added “other forms of mechanized transport” to the ban, thus implying that the ban should encompass transport that was “mechanized,” or mechanical, but not necessarily “motorized,” or dependent on some motor. See 16 U.S.C. § 1133(c). When Congress passes a law, regulations are often promulgated to implement that law if it needs further interpretation to be applied. Often, Federal agencies then develop policy to further explain how that agency will comply with the law and its regulations. The Federal regulation that is cited above applies to wilderness in national forests. It does not apply to wilderness area on national wildlife refuges. The FWS defines mechanical transport as “any device for moving people or material on, over, or through land, water, or air that has moving parts, provides a mechanical advantage to the user, and is powered by a living or nonliving power source. This includes, but is not limited to, sailboats, hang gliders, parachutes, bicycles, carts, and wagons.” It does not include sleds, travois, or similar devices (<http://www.fws.gov/policy/610fw1.html>, accessed March 2015). Our policy further explains that the Wilderness Act generally prohibits the use of motorized vehicles, motorized equipment (including motorized portable tools), and mechanical transport in wilderness, and therefore we also generally prohibit these uses for refuge management activities in wilderness unless we determine they are: (a) the minimum requirement for administering the area as wilderness and necessary to accomplish the purposes of the refuge, including Wilderness Act purposes, (b) an existing private right, (c) authorized by the designated legislation, or (d) required to respond to a human emergency, damage to property, violations of civil and criminal law, or other emergencies within the wilderness area. Our policy allows us to make exceptions to the generally prohibited uses for refuge management activities if the prohibited uses are the minimum requirement for administering the area as wilderness and are necessary to accomplish the purposes of the refuge, including Wilderness Act purposes (<http://www.fws.gov/policy/610fw2.html>, accessed March 2015). We cannot find that

the use of carts by shellfishermen in the Monomoy Wilderness is necessary to either administer the area as wilderness or to accomplish the purposes of the refuge. We do not agree that there will be impacts to refuge resources if sleds or travois or other non-mechanical means are used in the Monomoy Wilderness. Therefore, our position on the use of wheeled carts has not changed. For more information on wilderness, readers are referred to <http://www.wilderness.net> (accessed March 2015).

Wilderness Access Pass

(ID# 86, 131)

Comment: One individual wrote, “I am somewhat wary of the wilderness permit requirement. I had a permit for parking lot 7b and dinghy storage for about 25 years. That ended. I had special use permits for being allowed to access clam flats behind closed area signs. That ended. Now we will be required to get a wilderness permit to be present in the wilderness area. What is to stop that permit from ending like the others? I would like some kind of guarantee.”

Response: Our final CCP/EIS proposes that, over the next few years, we explore the feasibility of requiring a wilderness pass. That evaluation will include consideration of its purpose, what would be allowed under the pass, who it would apply to, when it would be needed, etc. We indicate in the final CCP/EIS that its purpose would be to help educate the public about the wilderness designation of the refuge, refuge wildlife and our management actions and to inform visitors about appropriate use while in the wilderness. If there is a need to limit the number of people in the wilderness at any one time in order to maintain the solitude character of Monomoy Wilderness, we can use the access pass to help us achieve that. Solitude is one of aspect of wilderness character which we are required by law to preserve.

We will be preparing a Wilderness Stewardship Plan (WSP) in the next few years, as required by Service wilderness policy (see www.fws.gov/policy/610fw3.html; accessed March 2015). The WSP, which is a step-down management plan, must identify the strategies and actions we will use to preserve the wilderness resource. It must also clarify the linkage between those strategies and actions and the wilderness goals and objectives identified in the CCP. Additionally, the WSP must contain indicators, standards, conditions, or thresholds that define adverse impacts on wilderness character and values that will trigger stewardship actions to reduce or prevent those impacts. If we believe it is necessary to use a wilderness access pass as a means to preserve wilderness character, we will propose a system that provides for maximum compatible public use while protecting wildlife resources and wilderness character. We can develop this pass with participation from the public. If we determine that we will charge a fee for this pass, there is an additional process that must be conducted. There will be many opportunities for public involvement should we decide that a wilderness access pass is necessary.

This is quite a bit different from the permit that we issued for years to private individuals to use the Stage Island lot for parking and dinghy storage. That was never a guaranteed use but was something that we allowed because it did not interfere with refuge operations. As our needs changed, we re-evaluated that use and determined that at times private use of the lot impeded refuge operations. While we never gave any permit holder the impression that they had a lifetime use of the lot, it is understandable that there would be concern when the use was no longer allowed, especially for those who had the privilege of using it for about 25 years. We are sure those who did have access to the lot are grateful for the opportunity and the benefit that we provided to them for all those years.

5. Biological Environment

Migratory Birds—Opposition to Closures for Shellfishing

(ID# 136, 162, 164, 256, 261, 267)

Comment: Several commenters expressed opposition to closures and restricted beach access, specific to shellfish harvesters. One commenter noted that “The south beach area has been an important fishery for local shell fishermen. It would be irresponsible for the management of this area to exclude the human factor.” Another commenter noted that the Town works with staff from several partner organizations and “shorebirds are well-protected by the Town and there is no need to change the existing system.” Two commenters also noted that shellfishing activity disturbs the substrate, thus providing a benefit to birds. Finally, one commenter

noted that shellfish harvesters should be exempt from the proposed expansion of the temporary seasonal closures to protect migratory shorebirds along the intertidal and saltmarsh interface. This commenter noted that “the USFWS recognizes that shellfishing is a passive activity that is not detrimental but beneficial to shorebirds. In fact, I have personally witnessed red knots feeding through the disturbed substrate where I have been raking for quahogs. So although the aim of the USFWS is to protect wildlife within these areas by banning access to the visiting public, it should welcome shellfishing and allow harvesters access during these seasonal closures.”

Response: We appreciate the comments relative to shellfishing access, but will continue to implement seasonal closures to benefit migrating shorebirds, and closures established for migrating shorebirds will apply to all pedestrians. We discussed the importance of Monomoy NWR to migrating shorebirds in chapter 2 and the importance of providing stopover sites that provide abundant food and a relatively disturbance-free environment for migrating shorebirds in chapter 3. Research we conducted on Monomoy NWR suggests that implementing a buffer of 61 to 97 meters at important foraging sites that are subject to frequent disturbance should benefit smaller shorebirds, but larger buffer distances (113 to 186 meters) should be implemented to benefit larger shorebirds including red knots and American oystercatchers (Koch and Paton 2014). We acknowledge that it is not currently practical, nor necessary, to close all of the intertidal foraging areas to pedestrian access. However, we will annually identify important areas that consistently support foraging and staging shorebirds and close areas that are subject to high levels of disturbance. The saltmarsh-intertidal interface on portions of Monomoy NWR is frequently an area of shorebird concentration, as shorebirds try to maximize their foraging time on the flats as they are becoming exposed with a receding tide (first foraging opportunities after high tide), or alternatively becoming covered by an incoming tide (last foraging opportunities before high tide). This interface is also often characterized by more disturbances because there is less habitat available to shorebirds during this time. Therefore, we may implement a small expansion to the closures around the saltmarsh, to provide a buffer to foraging shorebirds maximizing their foraging time, as well as to ensure an adequate buffer for shorebirds that roost in the saltmarsh during the high tide period. Additionally, we plan to initiate an outreach campaign to provide information to all visitors about the importance of minimizing disturbance to migrating shorebirds and hope to increase self compliance during lower tides when the majority of the intertidal flats are exposed.

We also acknowledge that our research did show that microhabitats with recent shellfishing activity had a positive influence on the density of two species (ruddy turnstone and American oystercatcher), while the presence of shellfishermen did not appear to affect the density of other species of shorebirds we monitored (Koch and Paton 2014). These conclusions are largely based on observation of shorebirds and shellfishermen located on the intertidal flats at lower tides, not at higher tides nearer the saltmarsh-intertidal interface. In addition, shellfishermen density was relatively low during the study. Therefore, although this supports our position of not needing to close the entire intertidal habitat area at this time, it does not provide support for allowing shellfishermen in closed areas where shorebirds may be more concentrated and more vulnerable.

Emphasis on Protection of Birds (ID# 54, 155, 234, 244, 272)

Comment: Mass Audubon, the MA DFW, and two individual commenters all expressed support for placing increased emphasis on protecting priority coastal bird species collectively noting piping plovers, roseate, common, and least terns, migratory shorebirds including red knots, migrating falcons, and, northern harriers. Mass Audubon stated that given the wilderness mandate, “...the USFWS’ charge to manage refuge lands for wildlife conservation, and the regional importance of the site to birds, Mass Audubon urges that the final CCP provide the greatest possible protection of coastal and migratory birds.” The MA DFW also stated that “Monomoy NWR is a site of Statewide and regional importance for State-and federally listed coastal waterbirds, including the Piping Plover, Roseate Tern, Common Tern, and Least Tern. Its size, location, and habitat quality provide the basic foundation to support these vulnerable species, yet the site must be thoughtfully, intensively, and consistently managed in order to provide the appropriate conditions to allow nesting birds to successfully raise young.” They further added that “Because the site is actively accreting, while many other coastal waterbird nesting sites are eroding, the refuge’s responsibility to protect and enhance beach nesting birds is likely to grow in the future.” Further supporting this statement, Mass Audubon noted that “Additional support and expanded scope (spatially and programmatically) should be placed on increased wildlife management and protection as the primary objective.” The MA DFW also noted the importance of

managing a network of important sites to safeguard against environmental disasters, predation, or unexpected events. Mass Audubon noted the importance of managing South Beach and South Monomoy Island as one unit, which will result “in more consistent and stronger protection for beach-nesting birds,” including implementation of predator removal (not currently allowed on town-owned land). The Cape Cod Group of the Massachusetts Chapter of the Sierra Club also commended our bird protection efforts.

Two of these commenters also submitted substantial support for protecting intertidal foraging areas and high-tide roost sites used by migrating shorebirds on Monomoy NWR. One commenter supported limiting shellfish harvesting to reduce human presence and loss of breeding-age shellfish, and the other commenter suggested that even though human disturbance may not be an issue presently in intertidal habitats, it could become so in the future. It was also noted by a commenter that the western refuge boundary excludes some key foraging habitat of red knots and other shorebirds on flats northwest of Minimoy Island.

Lastly, one commenter noted that the draft CCP did not adequately describe and address the importance of the refuge during higher tides as a resting site for migrating shorebirds, including red knots and whimbrels. Specifically, the commenter stated “...Monomoy NWR lands serve as high tide and nocturnal resting locations for migrant shorebirds, many of which travel far off refuge lands during their foraging periods.” The commenter further notes “...the major high tide resting locations of shorebirds on all of Cape Cod are within the boundaries of Monomoy NWR. Other suitable resting areas such as North Beach or North Beach Island have higher disturbance rates from humans; flight lines of shorebirds can be seen passing these locales enroute to Monomoy NWR.”

Response: We appreciate the support for our continued focus on the management and protection of coastal waterbird species, and also acknowledge the importance of collectively managing a network of sites with partners to benefit these species now and in the future. We are happy to share our expertise and assistance with partners to protect shorebirds in this area. Within this entire area, predator management is integral to successful management of coastal nesting birds. We discuss our commitment to this in detail in the final CCP/EIS appendix J.

While management for nesting northern harriers is not a top priority at Monomoy NWR, we believe protection of the coastal dune system, continued awareness by refuge staff that take care in minimizing their disturbance to nesting adults, and support for a thriving common tern colony (we do not manage harriers that are preying on terns), are all beneficial to northern harriers. We have also added a strategy in chapter 3, under Objective B1.1 (Dune Grasslands) to facilitate future survey efforts by the MA DFW. We also appreciate the support for the protection of migrating falcons. Although we do not actively manage to benefit falcons, we acknowledge that they utilize habitat in and around the refuge, and we participate in migration surveys when we can.

We also appreciate feedback regarding management of intertidal areas as it relates to migratory shorebird protection. With respect to limiting shellfish harvesting, we agree. Seasonal closures that incorporate intertidal and saltmarsh habitat for migratory shorebirds will certainly coincide with areas of shellfish populations. These closures will apply to all human access, including access by shellfishermen. Further, the refuge will not allow mussel harvesting anywhere on the refuge to protect this resource for red knots, common eiders, and other waterbirds.

With respect to minimizing human disturbance to migratory shorebirds, we also agree. We discuss the importance of the refuge to migratory shorebirds, with an emphasis on intertidal areas in chapter 2. We discuss this further in the context of management at Monomoy NWR in the rationale sections of Objectives A1.7 and B1.7. Specifically, we note “Given the levels of pedestrian traffic at Monomoy NWR in recent years, we think a small expansion of the current seasonal closures described in alternative A is sufficient to reduce most disturbance to migratory shorebirds using this stopover site. However, if the amount of pedestrian traffic were to increase substantially, we may need to adjust closures further during peak migration periods.” Thus, we agree that levels of human disturbance must be monitored, and we reserve the right to implement closures in the future if deemed necessary to provide relatively disturbance-free foraging and roosting areas for migrating shorebirds.

We also agree that we did not adequately describe and emphasize the importance of the high tide roosting habitat which Monomoy NWR provides to migrating shorebirds. We appreciate the references the commenter

submitted. We have updated the text in chapter 2 (Birds Section, Migratory Birds Subsection) to address these omissions. We have also updated the strategies in Objectives B1.7 (Intertidal) and B1.9 (Salt Marsh) to better incorporate shorebirds.

Predator Control—Opposition to Lethal Control
(ID# 59, 132, 164, 238, 244, 261, 264, 267, 273)

Comment: A number of individuals opposed lethal predator control and stated disagreement with the methods that the refuge is currently proposing or has used in the past. The Cape Cod and Islands Group of the Sierra Club and several individuals requested that we find a non-lethal means of controlling predators. The Sierra Club specifically stated that they oppose “the use of non-selective and often mis-used predator control techniques such as poisons, bounties, and aerial shooting” and “predator control aimed at creating artificial surpluses of other wildlife species.” One individual writes, “...I disapprove of the practice of lethal predator management. I understand the need to protect nesting birds, but there must be a way to defend the sites without fatally targeting predatory species. I do not think it is morally right to kill one species to promote another.” One commenter stated that, “If you are not one of the few species [the refuge is] protecting, the wildlife is shot or killed.”

Response: We tried to make clear the importance of predator control in appendix J, knowing that many individuals and some organizations are opposed to any form of lethal control. We share a dislike for lethal control, but believe it is sometimes necessary. As we stated in appendix J, “Throughout North America, the presence of a **single** (emphasis added) mammalian predator (e.g., coyote, skunk, and raccoon) or avian predator (e.g., great horned owl, black-crowned night-heron) at a nesting site can result in adult bird mortality, decrease or prevent reproductive success of nesting birds, or cause birds to abandon a nesting site entirely (Butchko and Small 1992, Kress and Hall 2004, Hall and Kress 2008, Nisbet and Welton 1984, U.S. Department of Agriculture (USDA) 2011). Depredation events and competition with other species for nesting space in 1 year can also limit the distribution and abundance of breeding birds in following years (USDA 2011, USFWS 1998-2009). Predator and competitor management on Monomoy NWR is essential to promoting and protecting rare and endangered beach nesting birds at this site, and has been incorporated into annual management plans for several decades.”

We employ many different predator management techniques on the refuge, most of which have been outlined in the draft CCP. Non-lethal measures consist of maintaining a staffed field camp or human presence, using triangular signs, habitat management, placement of chick shelters, use of electric and non-electric net fencing, and use of piping plover nest exclosures. These techniques will continue to be deployed as often as possible as a first attempt to control predator populations through non-lethal means.

As described in the final CCP/EIS, appendix J, native species are only targeted when they are actively depredate resources of concern including federally listed species. Non-native species, including eastern coyotes, are controlled lethally when present on the refuge during the nesting season (between April and September). We reject accusations that the Service kills any species that is not one of the few we protect. In fact, it is quite the opposite. The refuge has a specific list of species that are considered predators (see appendix J in the final CCP/EIS) and what behaviors they must be exhibiting to fall into this category. We do not kill any species without proof of direct impacts to focal species. We protect all other species on the refuge regardless of whether we have specific management objectives that apply to them or not.

We understand that many commenters still disagree with the management of gulls that took place on the refuge in the 1980s and 1990s involving the toxicant DRC1339. Those comments were addressed in the April 1996 environmental assessment. We learned from our past successes and challenges in gull management, and have adapted our predator management program as a result.

We recognize that there is a certain amount of complete opposition to lethal control and we do the minimum necessary to protect our trust resources including federally listed species. All lethal techniques used are selective and are performed by trained personnel, and target species are removed in a way that is as humane as possible. We are not currently using non-selective means and we do not have goals of creating artificial surpluses of any wildlife species, including federally protected species.

Predator Control—Support for Selective Predator Management

(ID# 155, 227)

Comment: One commenter stated specifically that they support our program to selectively control predator populations for the protection of beach nesting bird species. Additionally, Mass Audubon provided support for the expansion of predator management onto South Beach to benefit nesting species.

Response: Predator management has become a necessary part of our management efforts for native species and we believe that it is an important tool. We are willing to share our expertise with the Town so that predator control efforts could be employed on South Beach to protect nesting species. We have made some minimal changes to the predator management appendix; please refer to appendix J.

Predator Control—Impacts to Non-target Species

(ID# 261, 264)

Comment: Two individual commenters questioned the decline in the refuge deer population and whether or not this was related to predator control on the refuge or toxicants used to kill gulls in the nineties.

Response: No culling of deer or any management actions to either promote deer populations or remove deer from the islands has taken place. We do not intend to manage deer in the future. There have been deer on the islands in recent years, though numbers are down. There have been no poisons or avicides used on the refuge since 1996. We believe that the recent decline in deer numbers is not related to toxicants of any kind.

Northeastern Beach Tiger Beetle

(ID# 84, 244)

Comment: The Cape Cod Group of the Massachusetts Chapter of the Sierra Club “applaud(ed) the success of our Northeastern Beach Tiger Beetle program.”

Response: We are excited about the results associated with our beach tiger beetle program. Objective B1.5 in the final CCP/EIS includes details of our proposal to maintain the program.

Gray Seals

(ID# 90, 162, 210, 251, 260, 268, 269)

Comment: Several individuals felt that the draft CCP/EIS did not adequately address the issue of gray seals. In particular, individuals were concerned that the growing gray seal population would negatively impact other marine resources, fisherman, nesting, and migrating bird species, as well as limit other public uses (e.g., closing of beaches due to increase in great white sharks, which are seal predators). Comments also questioned data presented in the report, stating that the seal numbers are in the millions and are out of control. Some commenters suggested that the refuge attempt to control the seal population.

Response: We do not have any information to date that suggests the number of seals using the refuge is negatively impacting marine resources, fisherman, or nesting, migrating, and wintering bird species but we welcome the sharing of reports or data that address these concerns. Increasing seal numbers on the refuge are not necessarily indicative of an increasing population of seals in the Northeast, as local seal haul-out sites can change seasonally and between years. The National Oceanic and Atmospheric Administration (NOAA) conducts aerial flights that are used to track seal numbers and distribution, and these surveys provide a sense of overall importance of Monomoy NWR compared to other sites in Massachusetts. Currently, there is not an accurate estimate of the total population. As stated in the CCP, the most recent count was 10,600 individuals hauled out on the refuge in March 2011.

We are not proposing lethal control of the seal population on the refuge. Gray seals are federally protected by the Marine Mammal Protection Act (MMPA) and management of seals lies primarily with NOAA. The FWS has an affirmative responsibility to protect wildlife and comply with Federal laws on the refuge. When seals are present on refuge lands above mean low tide, they fall under the jurisdiction of the Service but are

still protected under the MMPA. We are currently managing seals in a manner that is consistent the MMPA, specifically to educate visitors and boaters to maintain a 150-foot minimum distance from seals.

The increase in seal numbers on the refuge and the increase in great white shark numbers in the area may not be related (Bradford 2013). The Woods Hole-based Northwest Atlantic Seal Research Consortium, which included many partners along with refuge staff, is a good resource for people interested in this relationship. Visit <http://nasrc.who.edu/research/sharks> for more information on the relationship between sharks and seals (accessed 30 January 2015).

In 2009, Kristen Ampela completed a Master's thesis at the City University of New York that studied the diet of Gray Seals by analyzing scat samples collected on Monomoy NWR (The Diet and Foraging Ecology of Gray Seals (*Halichoerus grypus*) in United States Waters). The intention of the research was not to quantify interactions between gray seals and commercial fisheries, but it provided information on exactly what the seals in the area surrounding the refuge are eating. This may be helpful to commenters interested in the diet of gray seals. Sand lance, a main prey item of common and roseate terns, was also shown to be an important part of the gray seal diet (Ampela 2009). Impacts to this fishery would be of high importance to the refuge, but currently based on number and productivity of terns in recent years, there does not seem to be a negative impact from seals on the sand lance population (Iaquinto 2015, personal communication). The refuge would be interested in future research on this topic. Seals may have an impact on other fisheries (the winter flounder fishery was mentioned in the thesis as possibly being impacted by seals), but the extent is unknown (Ampela, 2009).

Commenters may be interested to know that a group of scientists and fishermen have been collaborating to identify the impacts that seals have on commercial fisheries. During a meeting in 2009 and 2011, some of the needs of these parties were identified and compiled in a report titled, "Gulf of Maine Seal—Fisheries Interactions and Integrated Research" (Nichols et al. 2011). This document provides information that will be helpful to commenters concerned about the impact of seals and can be accessed online at the following website (<http://www.who.edu/fileserver.do?id=129565&pt=2&p=41026>; accessed 2 February 2015). Staff from the refuge participated in this meeting and look forward to being part of a dialogue with fishermen and other local stakeholders in the future on this issue.

Regarding comments that stated seals cause water pollution, we have provided the most current research in chapter 2 of the CCP regarding the presence and absence of enterococci bacteria on beaches near haulouts used by seals. This is the most recent local research available. Commenters are encouraged to submit research that states otherwise.

State-listed Species

(ID# 155, 272)

Comment: The MA DFW and Mass Audubon both submitted comments noting the importance of Monomoy NWR to State listed species. The NHESP comments noted that Monomoy NWR is mapped as Priority and Estimated Habitat in the 13th edition of the Massachusetts Natural Heritage Atlas for seven species of birds, two species of plants, and one species of invertebrate. Mass Audubon also noted that although the CCP emphasizes federally listed species, the refuge is also important for State listed species, and these "should be explicitly acknowledged and protected as well."

Response: We appreciate the comments reiterating the importance of the refuge to State-listed species, and the additional information regarding State-listed species for which Monomoy NWR is designated Priority and Estimated Habitat. "Priority Habitat is based on the known geographical extent of habitat for all State-listed rare species, both plants and animals, and is codified under the Massachusetts ESA. Habitat alteration within Priority Habitats may result in a take of a State-listed species, and is subject to regulatory review by the NHESP. Estimated Habitats are a sub-set of the Priority Habitats, and are based on the geographical extent of habitat of State-listed rare wetlands wildlife and is codified under the Wetlands Protection Act, which does not protect plants. State-listed wetland wildlife species are protected under the Massachusetts ESA as well as the Wetlands Protection Act." (<http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/regulatory-maps-priority-and-estimated-habitats/>; accessed February 2015).

Several State-listed species for which the refuge is designated Priority and Estimated Habitat (common terns, roseate terns, least terns, piping plovers, and northeastern beach tiger beetle) are already incorporated into the biological objectives of our preferred alternative because of their federally listed status and/or the regional importance of Monomoy NWR to these species. Other species (arctic tern, northern harrier, pied-billed grebe) are noted in the draft CCP but not explicitly incorporated into biological objectives because we felt the biological contribution of the refuge to these species was less important than to other species. Finally, the two State-listed plant species (oysterleaf and American sea-blite) were inadvertently not discussed in the draft CCP. In addition to State-listed species for which the refuge is Priority and Estimated Habitat, additional State-listed species utilize Monomoy NWR regularly. We acknowledge that we did not include a section on State-listed Species in chapter 2, Affected Environment where the importance of the refuge could be highlighted to all State-listed species. Therefore, we have added a section in chapter 2, following the “Federally Listed Endangered or Threatened Species,” and address all state listed species in this new section. We have also added several new strategies under the appropriate habitat-based objectives in chapter 3 to facilitate future survey efforts of these priority State-listed species.

Fowler’s Toads (ID# 54)

Comment: One commenter brought to our attention research that was conducted in the 1960s on Fowler’s toads on Monomoy NWR. The commenter suggested that the researcher, W. Tordoff, who was a student at University of Massachusetts at the time, may have shown that the Fowler’s toads on the refuge represented a unique subspecies.

Response: We always appreciate receiving information about work that was conducted on the refuge, especially in years that predate the current staff’s time. We have located a report which is an Honors Thesis titled “Some aspects of the biology of Fowler’s toad, *Bufo woodhousei fowleri*, Hinckley, on Monomoy Island, Chatham, Massachusetts” (Tordoff 1965). This study focused on documenting the breeding behavior, phenology, growth, and breeding pond habitat variables (such as salinity and temperature) of Fowler’s toads on the south end of South Monomoy Island. However, we do not find any indication in this report that suggests Fowler’s toads on Monomoy NWR represent a unique subspecies.

We also inquired with the NHESP to determine if they had information regarding the Fowler’s toads. Following is their response: “The taxonomic history of Fowlers Toad is confused because naturalist S.P.Fowler reported on the discovery of a new species of toad from Danvers, MA, at a meeting of the Essex Institute in 1858, and F.W. Putnam referred to it as *Bufo fowleri* in the Proceedings of the Essex Institute, but without any description. Putnam intended to publish a description but never did. At least two other naturalists did publish brief descriptions that were intended to describe how to distinguish this species from the American Toad. However, a description of the tadpoles of frogs and toads from Milton, MA (the Blue Hills), published in 1882 by M.H. Hinkley, is now considered the original description of the Fowlers Toad. The Fowlers Toad was soon considered a subspecies of the Woodhouse Toad from farther west. It was known as *Bufo woodhousii fowleri* until they were separated into different species in 2002. No subspecies of Fowlers Toad were ever described. So, the Fowlers Toads of Monomoy are *Anaxyrus fowleri* with no subspecific recognition.” (French, personal communication 2015). We have updated the scientific name of Fowler’s toad to *Anaxyrus fowleri* in Appendix A, Table A.3. We have not made any further additions to the text at this time, but we welcome any additional information regarding the potential unique subspecies on Monomoy NWR in the future.

Invasive Species (ID# 225, 244)

Comment: The Cape Cod and Island Group of the Sierra Club and one individual encouraged the refuge to work to eradicate and control invasive species. The Sierra Club urged, “the USFWS to manage invasive species vegetation with a strong lean toward elimination. A plan to gradually reduce non-natives, such as Rosa Rugosa, Japanese Black Pine, Scotch pine and Red Pine, should be developed and native species be encouraged or, in some places, planted.”

Response: We agree that invasive plant control and removal are very important and reflect that in our final CCP/EIS. We propose to have a greater focus in the future on invasive species control. In Objectives 1.9 through B1.11, invasive species is a main focus, including encouraging native species and maintaining less than 10 percent invasive species. Unfortunately, successfully achieving these objectives will only be possible if we are able to hire additional staff in the future.

Prescribed Burning

(ID# 90, 261)

Comment: One commenter stated that burning the beach grass on the refuge destroys the plant itself which is critical to maintaining the island and preventing erosion. At the public hearing, the same commenter stated that the refuge staff is trampling beach grass to enter the dunes every day and that the Town has managed South Beach the right way since they have not burned habitat amongst other things. Another commenter indicated a control burn is still a burn but used to beneficial effect.

Response: We reject the implication that we are destroying the dune habitat by trampling and burning beach grass. The refuge staff makes every effort possible to minimize impacts to beach grass. For example, we use two main paths of entry to access the tern colony from the beach and one trail to access the colony from our field camp. This minimizes disturbance to nesting terns. In addition, we travel by beach when at all possible to get from place to place on the refuge. We specifically stick to established trails so that habitat is not trampled. Bird disturbance in the tern colony is limited to that is necessary for data collection. Blinds are used for most observations and birds are only disturbed while staff is entering and exiting the colony.

Prescribed burning can be used very successfully to maintain early successional habitat (i.e. grasslands) and prevent the encroachment of woody vegetation. In particular, the refuge has utilized prescribed fire to maintain nesting habitat for common and roseate terns. Our management efforts have focused on reducing the abundance and height of woody species such as the non-native rugosa rose and bayberry. Prescribed burns are conducted in the fall, after the departure of nesting seabirds and the plants have gone dormant for the winter.

The commenter stated that burning beach grass destroys the root system of that plant. This is incorrect. It is not true that burning beach grass kills it and prevents it from protecting the island from erosion. Beach grass is known for having particularly strong underground stems called rhizomes that spread beneath the sand and give rise to new plants (Miller and Peterson 2006). These rhizomes can survive deep under the sand and continue to sprout new growths despite being buried (Miller and Peterson 2006). Rhizomes under the sand are able to survive even severe burns during the dormant season and will regenerate rapidly once the growing season resumes (Brown et al. 2000).

Climate Change

(ID# 136, 208, 235, 244, 252)

Comment: A few individuals expressed concerns about climate change and its potential impact on the refuge and its wildlife. One said that they are heartened to see that the Service has been reviewing this subject, and urge increased focus on the issues. One noted that global warming with its attendant rise in sea level and an increasing intensity of storms poses a danger of increased washovers on Monomoy which would prove to be tremendously disruptive to the migrating and nesting birds. Another thought that, “with the corrosive effects of climate change and sea level rise inevitable, don’t add to them with plans for increasing human impact.” The need for more research on ocean acidification, warming seawater and other environmental factors was noted.

Lastly, one commenter expressed concern that nowhere in the CCP/EIS does it discuss the alternative of governmental actions to reduce significantly the rate of sea level rise. This commenter specifically mentioned the use of solar radiation management to reduce sea level rise. He further stated that we need to address this in the final CCP/EIS in order to comply with the National Environmental Policy Act (NEPA), as “The case of *NRDC v. Morton*, 458 F.2d 827 (D.C. Cir. 1972), holds that an EIS must discuss all reasonably available alternatives, whether or not their implementation is within the jurisdiction of the agency proposing the action that is the subject of the EIS.”

Response: Identifying the impacts of climate change and how to address these impacts through mitigation or adaptation can be an overwhelming task. We support the President’s Climate Action Plan and the Department of the Interior’s climate change efforts. The FWS has established a Climate Adaptation Network which we can tap into to learn more about ways to address climate change in our work and on our lands. Executive Order 13653 defines adaptation as an adjustment in natural or human systems in anticipation of, or response to, a changing environment in a way that effectively uses beneficial opportunities or reduces negative effects. For the Service, adaptation to climate change involves planned, science-based management actions that we take to prepare for and reduce the negative impacts of climate change on fish, wildlife, plants, and their habitats (056 FW 1), as well as ecosystems, cultural resources, and facilities.

At Monomoy NWR, climate change including warming water temperatures has been identified by the Service as a serious management concern, as detailed in chapter 2. Sea level rise is also a concern, but less so as models show we are likely to gain salt marsh as a result of sea level rise. We are currently researching salt marsh elevations on the refuge as part of a regional coastal resiliency effort. We have spent less time discussing ocean acidification but agree that it merits additional thought, and would happily participate in regional research as resources allow. The ability of the waters on and adjacent to the refuge to continue to support the marine life that sustains the seabirds, shorebirds, and seals on the refuge is of paramount importance to refuge staff.

Chatham and the Monomoy Islands in particular have been constantly changing in form and structure in a cyclical timeframe and the islands change every year. Whether the intensity of the storms affecting Monomoy NWR is increasing due to climate change is beyond our capability to address. However, we are concerned about the impacts that major storms have on habitat for nesting and staging birds. The tern nesting area has remained fairly stable overtime so that it is available for the terns to nest. Certainly, if a washover occurred during the nesting season in the tern nesting area, we could lose a significant number of nests for that year. For other migrating birds, the impact of a washover would be less because of the large undisturbed beach and inland areas on North and South Monomoy for the birds to use. There can also be benefits to washovers as they can alter habitat making it more attractive to certain species of birds.

The Monomoy Islands are fragile, are routinely impacted by storm events, and may be imperceptibly stressed by climate change in ways we have not yet quantified. However, in addition to protecting nesting birds and endangered species, another part of our mission is to provide appropriate and compatible opportunities for wildlife-dependent public use. We will continue to manage these uses and allow them to continue as long as they do not detract from the primary purposes of migratory bird conservation and preservation of wilderness character.

We recognize that there are several technologies that could be available in the future to offset global warming. Solar radiation management, the act of introducing particles to the atmosphere to reflect sunlight or solar energy back into space, is one of them. This implementation of this technology is beyond the scope of this EIS so we did not address this issue. For further detail please view chapter 2, where we discuss global climate change and sea level rise, water quality, and other environmental factors. In chapter 4, we describe the direct, indirect, short-term, and cumulative effects likely to occur in regard to climate change, water quality, and other environmental factors if the refuge management alternatives are implemented. Controlling sea level rise by introducing small particles into the stratosphere to reduce solar radiation and the Earth’s temperature is beyond the scope of this EIS so we did not address this issue. We also do not agree that NEPA requires us to address solar radiation management in this CCP/EIS.

6. Priority Public Uses

Brochures and “Rack Cards”

(ID# 58, 90)

Comment: One individual requested that we put a Quick Response (QR) code on rack cards and place these cards in the Chamber of Commerce booth, and make information available to the public regarding access. Another commenter said that “brochures are so last millennium” and suggested that videos from refuge users, including some that we propose to prohibit.

Response: The Service has been utilizing QR codes in some instances at multiple refuges. We have been selected as a pilot site and have been using them for several trail guides at other refuges within the Complex. We will be requesting to use these types of tools as part of our outreach at Monomoy. We agree that videos can be an effective way to reach new audiences and have and will continue to use them on our refuges.

Recreational Fishing

(ID# 47, 236, 280, 284, 291)

Comment: Several individuals commented that they would like the refuge to continue to allow recreational fishing, with no additional restrictions or regulations. Also, one individual was concerned about proposed fishing hours, saying, “Hours of permitted use, 1/2 hour before sunrise to 1/2 hour after sunset! Mass State Regulation, which ‘Refuge’ pledges to abide by, does not set limited hours on salt water fishing.”

Response: The State’s regulations provide a framework that we work within, and we are pleased to continue to provide access to saltwater fishing 24 hours a day on Morris Island. Given the remoteness of the refuge lands (excluding Morris Island), we believe it is necessary to close North and South Monomoy and Minimoy Islands at night for resource protection and visitor safety, including for fishing. This closure has been in place for years on the refuge and does not constitute a change in public access. Some of these areas are also closed to public use seasonally to protect nesting or staging migratory birds. We do have the authority to set restrictions on refuge property for management reasons, and have done so and propose to continue so, for the reasons cited above.

Environmental Education and Interpretation

(ID# 59, 96,155, 210, 234, 235, 244, 270, 275)

Comment: Two commenters wrote, “...we find it commendable that the U.S. Fish and Wildlife Service wishes to upgrade their educational component and bring information about the area into schools. If funding is provided, more guided programs and informational self-guided tours would be wonderful.” Some commenters liked these programs and believe they are great for visitors; others are concerned that they might come at the cost of our wildlife management programs or that that there could be unintended consequences of using the refuge to death. One commenter liked curriculum-based school programs and teacher workshops, but expressed concerns about geocaching. Another thought more programs seemed at odds with wildlife and habitat conservation. This commenter suggested more virtual tours, and that markers be erected at historic locations on the refuge. Mass Audubon stated their understanding that public visitation and use can advance conservation objectives, but cautioned that these uses be managed to cause no adverse impacts to wildlife. Others just expressed general support for more interpretative programs. The National Wildlife Refuge Association strongly supported actions which emphasize wilderness stewardship.

Response: We appreciate the support from some for an increase in our educational programs. We also appreciate the thoughtful insight from a few commenters about expanding our visitor services program, including environmental education and interpretation.

We have found virtual geocaching and letterboxing to be an appropriate use on the refuge. The opposition to utilizing geocaching is understood, however, we are proposing non-traditional geocaching where no items will be buried or kept in certain spots to find. Virtual geocaching can be enjoyed without a physical cache. All geocaching activities will be conducted only in areas that are open to the public, including the Morris Island Trail system, and designated areas on Monomoy NWR. Geocaching activities would also avoid sensitive areas prone to disturbance (e.g., sensitive vegetation areas) or degradation (e.g., soil compaction), and would be designed to minimize impacts to endangered species, nesting birds, or other breeding, feeding, or resting wildlife. We also have concerns about digging on the refuge or people going into environmentally sensitive areas that are not open to the public, and a virtual geocaching program addresses those concerns. We do not anticipate any additional impact to refuge resources from this use.

We appreciate the suggestion to erect markers to denote historic locations on the refuge. While we will not erect markers on the islands, because most of these locations are now in the Monomoy Wilderness, we will explore ways to share information about these sites to preserve them “virtually.” This idea is consistent with one of our interpretation strategies in B2.2.

We are sensitive to concerns that our visitor opportunities might be over promoting Monomoy. There is often a fine line between protecting wildlife and providing access and programs for the public so that people can learn about the refuge and what we do. It is in our mission to provide opportunities for the American people to connect with our lands. Part of the refuge's outreach goal is to make a broader audience aware that the refuge exists and ensure citizens recognize they are welcomed to visit. And while we do not promote the refuge for economic purposes, we are pleased that there is an economic benefit to our host town as a result of our location in Chatham.

Photography

(ID# 236)

Comment: One individual supported limited photography on the beach or on trails, with no offtrail access into the brush.

Response: Wildlife photography is a priority public use which we accommodate in areas that are open to the public. Commercial photographers routinely request permission to access the refuge. Agency policies require a special use permit, and restrictions about the use of motorized equipment or mechanical transport in wilderness, as well as seasonal restrictions and closed areas to minimize disturbance to wildlife, will be stipulated in any permit issued for commercial purposes. Additionally, any commercial photography conducted in the wilderness area is not generally permitted by policy. It must be directly connected to and support the wilderness purpose of the refuge in order for a special use permit to be issued.

Waterfowl Hunting

(ID# 60, 63, 110, 153, 164, 231, 234, 235, 241, 243, 244, 265, 295)

Comment: Several commenters were concerned about or opposed the proposal to open the refuge to waterfowl hunting. Reasons cited included: concern over firearms and visitor public safety, concern that other wildlife (particularly shorebirds and raptors) might be disturbed by hunting, and the feeling that hunting “does not promote sound ecological management” and does not “fall within the guidelines of protecting the wilderness resources.” One commenter was concerned that some waterfowl might be non-lethally injured by hunters and that harvested waterfowl might not always be retrieved. Another commenter requested that the proposal to allow waterfowl hunting receive further review and discussion. Similarly, the Association for the Protection of Cape Cod wrote, “The plan outlines efforts to enhance certain waterfowl populations for the apparent sole purpose of enhancing hunting targets. Hunting for waterfowl essentially for sport does not promote sound ecological management” and “that this seems to be a contradiction of the basic premise of the Migratory Bird Conservation Act...There appears to be no means of actively monitoring and managing the impacts of hunting on the protected resources...such monitoring should be integral to the overall management plan.” The Cape Cod Group of the Massachusetts Chapter of the Sierra Club acknowledged that hunting can occur on refuges and requested that future planning receive further review and discussion. Others, including the MA DFG, supported waterfowl hunting. One commenter pointed out that, “Any provision to allow hunting must also contemplate and permit the presence and use of dogs on [Monomoy Refuge] during waterfowl season.”

Response: Waterfowl hunting is a long-established recreational use on Cape Cod. The Refuge System Improvement Act of 1997 requires us to provide wildlife orientated recreation opportunities, which include consumptive uses such as hunting and fishing, when compatible with the purpose of the refuge. The Migratory Bird Treaty Act does not prohibit hunting, but in keeping with the Act, only 40 percent of the refuge is open to waterfowl hunting, thereby providing sanctuary areas on the refuge where waterfowl and other species can rest and feed relatively undisturbed.

Hunting on the refuge will be monitored to determine any adverse impacts to refuge resources, and we will adjust the hunt program if necessary to address any identified impacts. Federal and State waterfowl biologists monitor waterfowl populations and use national flyway data to help states set hunting season dates and limits on specific species to ensure a sustainable activity. Additionally, the Wilderness Act does not prohibit hunting, and offering a waterfowl hunt program will not diminish Monomoy NWR's wilderness character. We are aware that some disturbance to other wildlife by this activity will occur from time to time, however we believe that disturbance is very minimal and at an acceptable level to find this activity compatible with the purpose of the refuge. All waterfowl hunters, by law, must make a reasonable effort to retrieve all taken waterfowl. We

encourage the use of retrieval aids such as watercraft and trained dogs as these greatly increase the hunter's ability to retrieve downed birds.

Before a waterfowl hunt program is established, we will complete an Environmental Assessment (EA) and develop a detailed hunt management plan. The hunt management plan will define areas, discuss methods, and propose refuge specific regulations that will ensure a safe environment for hunters and non-hunters and provide for a quality hunt. We expect every hunter to make a reasonable effort to retrieve downed game as required by law and encourage the use of trained retrieval dogs and watercraft to ensure all harvested birds are retrieved. Hunters are required to register with the State's Harvest Information Program (HIP) and obtain an individual HIP number which surveys hunters on season harvest numbers. We will require that all commercial guides obtain a special use permit from the refuge. Federal and State law enforcement officers will monitor and check hunters for compliance with Federal and State hunting laws. We are confident that we can offer a quality waterfowl hunting opportunity on the refuge that will be enjoyed by hunters without interfering with or impacting other uses of the refuge.

Firearms for Waterfowl Hunting (ID# 86, 229)

Comment: Quitnesset Associates, Inc. wrote, "While we do not oppose [the] plan to officially open [the] refuge to waterfowl hunting, we note that...firearms are prohibited on Morris Island, as stated on the sign on Tisquantum Road. We will not tolerate the transport of firearms and ammunition over our property. Before any portion of the refuge is opened up for waterfowl hunting, [the refuge] must ensure that hunters with firearms approach the opened areas by means other than travel on Morris Island roads." Another commenter questioned whether guns are mechanical contraptions, and wondered why they could be used in wilderness when wheeled carts are not.

Response: The waterfowl hunting area on the Monomoy NWR is accessible by boat only. There are no authorized boat launches on Morris Island that hunters can use to access these areas. The hunt management plan that will be written before any establishment of a hunt program will further evaluate access including the role, if any, of guided waterfowl hunting under the auspices of a refuge-based concessionaire. It is only in this case where there is a possibility of hunters travelling to refuge headquarters with firearms. If so, then all hunters must have their firearms unloaded and properly cased for transport in compliance with State law.

The Service's policy on Wilderness Administration and Resource Stewardship (<http://www.fws.gov/policy/610fw2.html>, accessed August 2015), is clear that hunting is allowed in national wilderness areas. The policy is silent on the use of firearms, but since firearms are the main tools used by hunters to harvest game, it is clear that refuge hunters may use firearms when waterfowl hunting on the refuge.

7. Non-priority Public Uses

General Beach Activities

(ID# 62, 64, 84, 91, 94, 95, 98, 99, 101, 102, 119, 124, 125, 126, 128, 129, 138, 139, 142, 146, 148, 150, 155, 164, 168, 176, 181, 182, 184, 187, 194, 195, 197, 201, 203, 204, 207, 209, 210, 213, 217, 220, 223, 237, 239, 240, 258, 264, 273, 291)

Comment: Most of the comments we received on the issue of beach use stemmed from the changes that would take place on Nauset/South Beach. The Town and numerous individuals assert that general beach uses—such as sunbathing, swimming, beach sports, games, grilling, and kite flying—should continue in designated areas and times, as they are currently regulated by the Town's Beach and Park Rules and Regulations. While many people support wildlife conservation, they do not agree that their activities impact wildlife. Some specifically questioned the lack of scientific studies documenting impacts, especially has many of these activities have taken place for decades. One commenter specifically indicated that low to no impact activities such as family reunions, football on the beach, barbecues, paddle ball, frisbees, bocce ball on sand flats, etc., are being banned for no supported reason. This individual believes that piping plovers have co-existed with boating and recreational activities on beaches for centuries and that there is no peer-reviewed science suggesting anything other than human users seem to further the preservation goals to protect critical habitat.

Another commenter indicated his strong belief that the Service should not have the authority to determine where people go or what they do, and that visitors should be able to have the freedom to continue enjoying the refuge without further unnecessary restrictions.

Additionally, some commenters are concerned about the impact of visitors and beach use on wildlife and wildlife habitat. For example, Mass Audubon said “public visitation and use can in fact advance conservation objectives, through enhanced understanding and appreciation...it is important that uses be managed to cause no adverse impacts to wildlife” and that “on South Beach, our biggest concern (aside from predators) is disturbance by often well-meaning but nonetheless damaging intrusions by public visitors. Because the habitat is so vast, it’s difficult to adequately install symbolic fencing around all occupied habitat. Repeatedly, beachgoers, kayakers, and others have inadvertently disturbed nesting birds or disregarded signage and fencing.”

Response: There is often a difficult balance between wildlife conservation and public use, and the direct and indirect impacts that occur even from refuge users who are sensitive to the concern about disturbance to wildlife. With the establishment of a new management boundary on Nauset/South Beach, as depicted in the new MOU between the Service and the Town, the concerns that commenters had about changes to most of South Beach should be satisfied. We have agreed that the Town will manage land to the east of the management boundary, which encompasses most of Nauset/South Beach. The changes to non-priority public uses that we proposed in the draft CCP will now only apply to Service lands west of the management boundary.

We understand the frustration one commenter feels that the Service should not have the authority to determine where people go or what they do, and that visitors should be able to have the freedom to continue enjoying the refuge without further unnecessary restrictions. However, this position is not supported by Federal law. The Improvement Act of 1997, which was passed by Congress with only one opposing vote, very clearly states the mission of the Refuge System and gives the employees of the Service not only the authority but the obligation to conserve a diversity of fish, wildlife, and plants and their habitats for the benefit of current and future generations. We also are required to provide wildlife-dependent public uses on our refuges and to examine every use that is occurring on a national wildlife refuge and authorize only those uses deemed compatible. Since there are other locations in the Chatham area recreationists can enjoy these uses, and knowing the impact these uses can have on shorebirds and listed species we are mandated to protect, they are not appropriate on Monomoy NWR. For more information, readers are referred to 601FW 1, the National Wildlife Refuge System Mission, Goals, and Refuge Purposes, found at <http://www.fws.gov/policy/601fw1.html> (accessed February 2015).

Below, we provide a response about individual beach uses in an effort to further explain the justification for the actions being proposed by the Service.

Beach sports: Beach sports include, but are not limited to, volleyball, football, soccer, frisbee, baseball, surfing, skim boarding, and kite flying. These uses are more appropriate in a park setting and would, if allowed, detract from the purpose of the refuge which is to protect migratory birds and provide opportunities for recreational wildlife-dependent public use. When conducted in designated wilderness, all these activities detract from the wilderness character of the refuge. Activities which are generally done in groups, such as beach sports, can also negatively impact the quality of solitude which is to be preserved in wilderness.

While one comment was made that low to no impact occurs by these activities and there is no supported reason for banning them, no data or research was provided to support this statement. On the contrary, extensive research has been conducted on disturbance to shorebirds from beach recreationists. Given that shorebird populations are in an overall decline, and that disturbance increases as group size increases, thereby necessitating a larger buffer distance (Martin et al. 2015) it is imperative that the refuge continue to manage its lands for migratory bird protection while balancing recreational uses. We fully understand that these types of activities are enjoyed by people who are on family vacations, participating in a family reunion, or just general outdoor enthusiasts, and that there is a sentiment that these uses and conservation have co-existed. It has been documented that outdoor recreational activities has increased in recent years (Knight and Gutziller 1995) and most species of shorebirds are in decline all around the world as a result of both loss of coastal wetlands and in connection with these recreational activities (Martin et al. 2015).

In addition to their impact on tern colonies on the refuge, research on the effects of human disturbance at Cape Cod National Seashore found that plovers responded more strongly to kite-flying than other forms of human disturbance (Hoopes 1993). Kite flying is restricted on Cape Cod National Seashore, and is prohibited within 656 feet (200 meters) of shorebird nesting areas, as identified in the May 15, 2015 Superintendent's Compendium to 36 CFR 1. Kite surfing is prohibited from March 15 to October 15. By removing beach activities that do not in and of themselves support a better understanding of wildlife and which may have direct or indirect impacts on wildlife, we are increasing the likelihood that refuge habitats will be less disturbed and wildlife will be able to use refuge resources to maximize productivity, sustenance, and survival.

Shade tents: Shade tents will be allowed only on Morris Island, and will be prohibited within a 100 meters of closed areas designed to protect nesting birds. Shade tents will not be allowed on the island, primarily because these areas are mostly designated wilderness. Shade tents will detract from the experience of visitors seeking wilderness.

Swimming and sunbathing: These uses are being proposed as allowed uses on the refuge with the exception of seasonally closed areas, in order to minimize disturbance to wildlife.

Jogging, dog walking, boating, and organized picnicking have been addressed separately. Please see our response to the comments about these uses in this section.

Please see the findings of appropriateness and compatibility determinations in the final CCP/EIS, appendix D, for more information on these specific uses.

Boating

(ID# 96, 192, 254, 275, 291, 294, 299)

Comment: Several individuals and the Cape Cod Marine Trades Association were concerned that the refuge might ban motorized boat use. They felt that it is an appropriate, compatible, and a traditional use that was important to local residents and visitors that had little impact on refuge wildlife and habitats. Two commenters, the National Wildlife Refuge Association and Wilderness Watch, expressed concern or outright opposition to the use of motorboats by visitors and staff. Wilderness Watch wrote, "allowing extensive administrative motorboat use will make it impossible to preserve that wilderness character" while the Refuge Association said the "use of motorized boats in Wilderness areas could be inconsistent with the objectives of the Wilderness Act."

Response: The majority of the refuge's lands and waters are only accessible by boat. Motorboats have traditionally been used to access the refuge by both staff and visitors. As the channels fill in and alter due to shifting sands and storms, it is getting more difficult to access the northernmost parts of the refuge by boat, and kayaking is occurring more frequently. Nevertheless, motorboats are the only safe way to access most of the refuge. It is our intention to continue to allow access to the refuge via motorboat in order to ensure the safety of refuge visitors and staff.

The concern about motorized boats in the Monomoy Wilderness is an understandable one. Motorboats can be loud and can disrupt the sense of wildness many refuge visitors seek. We will do more to try to promote non-motorized access to the refuge when and where it can be conducted safely. Refuge staff paddle to Minimoy Island from South Monomoy on a regular basis to conduct wildlife surveys, and we have strategies in our plan that would further reduce recreational motorized visitor use. However, we do not believe that a total ban on staff or visitor use of motorboats is safe or practical, nor is it inconsistent with the Wilderness Act. Section 4(d) of the Wilderness Act expressly permitted motorboat use to continue in areas where the use had already become established. The Act gave the Secretary of the Interior the authority to allow motorboat use to continue, and to impose restrictions if desirable to control that use. Furthermore, Section 5 of the legislation establishing the Monomoy Wilderness specifically referred back to Section 4(d) of the Wilderness Act, thereby specifically granting us the authority to continue to allow this use.

Our recommended boat landing areas provide the safest places to anchor a boat to get onto the refuge's beaches or to walk to the Monomoy lighthouse and elsewhere on the islands. However, boaters may anchor anywhere and access any area that is not seasonally closed for migratory bird protection. It is possible that some

commenters thought our original proposal to ban mooring included anchoring. That is not the case. Mooring is covered in a separate section of the document and does not include anchoring; for more details please reference that specific portion of the Response to Comments and the Finding of Appropriateness and Compatibility Determination.

Bicycling

(ID# 64, 241)

Comment: One individual and the Town disagree with our finding that bicycles are not appropriate on the refuge. The Town writes, “The Town does not agree with the premise that bicycling would cause significant disruption within the Refuge and would compromise refuge goals or priority wildlife-dependent recreation. We ask the FWS to consider permitting this low impact and popular use in designated areas and at designated times within the Refuge.”

Response: The Service is maintaining its position that bicycling is not an appropriate use on Monomoy NWR. Bicycles are a form of mechanized transport and have wheels, which are not allowed in the Monomoy Wilderness. We have concerns about the use of bicycles on Morris Island Trail, which is outside the wilderness area. Bicycle use is likely to create erosion on fragile beach grass habitat and conflict with other users participating in wildlife-dependent recreation on the narrow Morris Island Trail.

The finding of appropriateness in appendix D of the draft and final CCP/EIS stipulates that bicycling to access the refuge office/visitor facilities parking lot may continue. Bicycling would not be allowed elsewhere on the refuge, including the Morris Island Trail. For visitors who participate in other activities while at the refuge, bicycles can be locked in the bike rack at the visitor contact station. Bicycling is not a priority public use, and is not necessary to facilitate wildlife observation by refuge visitors. Therefore, bicycles will be limited to the refuge parking lot.

There are many alternate locations residents and visitors alike can bicycle on Cape Cod to enjoy the outdoors. The refuge staff will have information available in the office for refuge visitors who are looking for places to bicycle.

Kiteboarding—Support for Ban

(ID# 96, 109, 155, 228, 234)

Comment: Mass Audubon and several individuals support the proposal in the draft CCP/EIS to prohibit kiteboarding at Monomoy Refuge. One individual writes, “As an enthusiastic birder, I strongly support the proposed ban on kiteboarding on Monomoy Island and nearby South Beach. I have visited South Beach and seen first-hand how easy it is to disturb nesting shore birds. The habitat for Piping Plovers decreases each year and quality locations like Monomoy Island need stronger protection.” Mass Audubon writes, “Mass Audubon’s Coastal Waterbird Program field crews observed at least five instances of kiteboarding near coastal waterbird nesting beaches in Massachusetts in 2014. Distances varied. In one instance, a colony of Least Terns was disturbed by deployed kiteboards, while in another case gear placed on a beach was problematic. We also know of at least two additional instances, at South Beach, of kiteboard disturbance of large numbers of roosting migratory shorebirds and terns, including Red Knots and Roseate Terns (one observation by Mass Audubon staff and the other by USFWS staff). While these observations are anecdotal, even infrequent disturbances of nesting birds can impact breeding success and survival, depending on the timing and duration of the disturbance and in relation to all the other stresses the birds must endure.”

Response: After review of all the comments, we have affirmed our decision to ban kiteboarding within refuge waters as it is an inappropriate activity that detracts from the purposes of the refuge. For your reference we have included additional information in our Finding Of Appropriateness which can be found in appendix D of the final CCP/EIS. The Town has also recognized the increase in kiteboarding activity and modified their Waterways Bylaw in 2015 to prohibit the use of kiteboards and other similar watersport craft in order to minimize conflicts with boaters and other beach and water-based activities.

Kiteboarding—Opposition to Ban

(ID# 46, 69, 70, 74, 115, 120, 123, 135, 137, 143, 147, 149, 151, 156, 161, 167, 171, 186, 205, 206, 212, 214, 216, 219, 226, 240, 274)

Comment: Numerous individuals commented that kiteboarding should continue at Monomoy Refuge. Reasons cited included:

- There was inadequate scientific evidence and justification in the draft CCP/EIS for banning kiteboarding, including the use of research that was 20 years old about the impact of kites on birds.
- Kiteboarding is an environmentally friendly, low-impact sport because it does not use motorized equipment and creates no noise or emissions. Many compared kiteboarding to kayaking or sailing.
- Kiteboarders passionately love nature, are dedicated stewards of the wildlife and habitats at Monomoy, and use the sport to connect with nature.
- Kiteboarding and piping plovers coexist at other locations in Massachusetts (e.g., West Dennis and Revere Beach).

Many of the commenters were very open to sensible restrictions on the use if it was allowed to continue (e.g., time of year restrictions, requiring permits for access, requiring education regarding sensitive species, designating certain areas as open and closing sensitive areas, establishing minimum distances from nesting/resting birds, and banning launching and landing near sensitive habitats).

Response: We appreciate the time and effort that was put forth by the kiteboarding community in providing comments on this topic. We understand that kiteboarders are both passionate about their sport and the environment and are willing to make concessions should we allow the sport to continue within the refuge boundary. After very thoughtful consideration, we have decided to maintain our original position that kiteboarding is not an appropriate activity within the boundary of Monomoy NWR.

We have used the best available science and our professional judgment to make this determination, which we believe is best for wildlife. There are very few studies that have looked at the impact of kiteboarders on nesting, foraging, and staging birds. This may be due to the fact that the activity is fairly new, or it may be due to the fact that the activity varies widely depending on the conditions at each individual site. In reality, the impacts are probably very different from site to site based on the use of that site by kiteboarders (wind direction, proximity of shallow water to nesting birds, boat traffic and channels, etc.). We did, however, speak with biologists from the NPS, Mass Audubon, and other refuges within the FWS and they concurred that the activity was disruptive to birds as they had witnessed it in the field. Kite boarding (kite surfing) is prohibited at the Cape Cod National Seashore on all ocean and bayside open waters from March 15 to October 15 for the protection of shorebirds (NPS, Cape Cod National Seashore Superintendent's Compendium, 36 CFR 1, 2015).

As a response to several comments, we have added or removed language within the chapters and we have made some significant changes to the FOA. Currently kiteboarding is not allowed within the boundary of any national wildlife refuge in Region 5. In reevaluating our FOA, we have determined the following:

1. Kiteboarding is not consistent with public safety.
2. Kiteboarding is not consistent with goals and objectives in this CCP/EIS or another document guiding refuge management.
3. Kiteboarding is not manageable within available budget and staff now or into the future.
4. Kiteboarding cannot be accommodated without impairing existing wildlife-dependent, recreational uses or reducing the potential to provide quality, compatible, wildlife-dependent recreation into the future.

Please see the updated finding of appropriateness in appendix D of the final CCP/EIS for more information on the above items.

Many commenters suggested that the refuge implement seasonal closures to kiteboarding or buffer distances around important bird areas. Our best professional judgment indicates that kiteboarding has the potential to disturb birds in a variety of ways including while they are on the shore or on the water. Closures cannot be used to create buffers since they are temporary and do not provide protection to non-nesting birds. Closures are not used for non-nesting birds because the areas that they inhabit change regularly depending on the conditions and the behaviors of the birds in question. Regulating uses is the most effective way to prevent disturbance to birds when closures are not possible. During the nesting season, terns nest in specific areas which we close for their protection, but they forage on the open water for sand lance; shallow areas that could easily be used by kiteboarders. These areas could be offshore or close to shore and vary based on weather and currents. In the fall, migratory shorebirds use many areas of the refuge that are not marked with closures for feeding and roosting. In the winter, the refuge provides important feeding and resting habitat for seaducks that rarely use the refuge lands, spending most of their time on the open water. It would be impossible to both allow kiteboarding within the boundary and to prevent disturbance to these important avian resources. While boaters also have the potential to disturb birds using these areas, the time that they spend in one area is usually very short, passing through and the moving on, while kiteboarders occupy one area for a period of time while the winds are good, leading to concentrated disturbance in the area of use (Kate Iaquinto, personal communication 2015).

Several commenters noted that we cited a thesis by E. Hoopes that was completed at the University of Massachusetts in 1993. This thesis includes information on the relationship between the success of nesting piping plover and human disturbance on Cape Cod National Seashore. While the thesis was not peer reviewed or published, it has been cited widely when discussing plover disturbance, most notably in the piping plover recovery plan (USFWS 1996a). We have not been able to find or cite research that is more current or appropriate but we would encourage commenters to submit such data. We would support research in the future regarding the possible avian disturbances related to kiteboarding. In the Finding of Appropriateness we present anecdotal evidence that we have used to determine that kiteboarding does in fact disturb birds at the refuge and in similar areas. We have changed some of the language in the FOA regarding the Hoopes thesis as its inclusion has been controversial with commenters.

Many commenters stated that because kiteboarding has little to no environmental impact based on the fact that it produces no emissions and little to no noise pollution, that it should be encouraged on the refuge. They also compared it to sailing. While it is similar to sailing in some respects, wind driven and quiet, it is not similar in that the kite travels high above the ground and kiteboards can be used in very shallow water. The problem with kiteboards is the sometimes erratic movement of the kite, the shadow cast by it, and the fact that the boarders themselves can come very close to shore in shallow water on flats, travelling at high speeds, where shorebirds may be feeding or resting. While kayakers and people using stand up paddle boards can also go in shallow water, they are usually moving at a slower rate and have a much lower profile to birds on the shore. We do appreciate however that the sport is relatively environmentally friendly from an air pollution perspective.

We also appreciate the fact that many kiteboarders are nature lovers and use their kiteboards to experience the refuge. However, kiteboards can disrupt other people's ability to observe wildlife on the refuge and surrounding beaches. Large flocks of staging terns can be observed on the refuge, but if they are flushed by a kiteboarder, they may leave the site to stage elsewhere. Currently, there is a graduate student from the State University of New York, College of Environmental Science and Forestry that is studying disturbance to staging terns on the outer cape, mostly within the boundary of the National Seashore. Results from that study will inform future management.

We received several comments that mentioned how kiteboarders are collaborating with beach managers at West Dennis Beach and Revere Beach to lessen the impact to nesting birds. We believe the comparison to West Dennis and Revere Beach, while understandable, is not appropriate. These beaches are heavily used by the public with thousands of visitors annually, and the plovers nesting there are exposed to constant disturbance by humans and the activities that they bring to the beach with them including kiteboards, radios, pets, umbrellas, Frisbees, and other forms of recreation. From a biological perspective, the amount of disturbance that these birds tolerate is very different than the birds nesting at Monomoy who see humans once a week. Most of the human interaction with nesting birds on the refuge is with our staff who are very careful to minimize disturbance to the plovers as they perform their nest checks. Nesting piping plovers, as well as other birds using the refuge to forage, roost, or stage, have a much lower tolerance to human disturbance (Kate Iaquinto 2015, personal communication). In fact, the low levels of public disturbance may be one of the reasons that the refuge is so heavily used by such a variety of bird species.

Dog walking—Opposition to Proposed Ban

(ID# 60, 62, 64, 75, 164, 241, 256, 291)

Comment: The Town and several individuals requested that we continue to allow dog walking on the refuge, particularly on South Beach. The Town suggested that we allow dog walking seasonally, similar to their Town Beach regulations. The Town letter states, “[We have] fully addressed this issue in the Town’s Beach and Parks Rules and Regulations: dogs, cats, horses, and all other pets and animals are prohibited on Town beaches and beach areas from May 1–September 15 to avoid conflicts with humans and wildlife. However dog walking is an important activity for many local residents, particularly during the offseason. The Town disagrees with the FWS conclusion regarding the presence of dogs and asks it to consider allowing dog walking in designated areas at designated times, requiring, and enforcing that they are restrained by a leash.” Another commenter asked that dogs be allowed on a 30-foot leash and off leash below low tide. Another commenter found it odd that we use dogs for predator control, but do not allow dogs (or people) all over the refuge.

Response: The Service has re-examined its position on dog walking. Instead of a permanent closure to dogs and other pets, we will continue to allow dogs on leash on Morris Island but only from September 16 to April 30. This is consistent with Town regulations and is a time period when less wildlife is found on the Morris Island part of the refuge. We will not allow dogs on any other sections of the refuge at any time of the year. Since the Town will be managing most of the lands on Nauset/South Beach, our policies limiting dogs to Morris Island should not be a concern to the commenters who were thinking of South Beach when they identified this activity as a concern.

While we understand the desire for visitors to have their dog with them on a hike or trip to the beach, the refuge was established for migratory bird protection, and the presence of dogs, even leashed, impacts wildlife. The impact of dogs on wildlife has been described in many scientific literature reports. In particular, we are concerned about the impact of dogs on staging, nesting, and/or foraging migratory birds, including but not limited to piping plovers, common terns, roseate terns, red knots, and American oystercatchers, as well as other wildlife such as seals that use refuge beaches for hauling out. It is precisely because dogs are good at finding wildlife that we use them selectively for coyote management. These dogs are under the control of a trained wildlife professional. There is no correlation between when and how we use dogs for predator management and access on the refuge by people with or without their dogs.

Dogs must be on a 6-foot leash and waste is to be picked up by dog walker and taken off refuge property as we are a “carry in, carry out” location. Refuge staff considered a request to allow unleashed dogs below low tide and to allow a longer 30-foot leash. This request will not be accommodated, as the mere presence of a dog can impact bird behavior. It is also difficult to control a dog on a 30-foot leash. If piping plovers or other birds attempt to nest on the refuge before May 1, a temporary closure will be established around the nest site to minimize disturbance and increase the chance of nesting success.

Many refuge visitors now routinely fail to keep their dog leashed when on Morris Island, and dogs are occasionally found on South Monomoy Island. We will continue to monitor compliance and will revoke the seasonal dog walking privilege if there is significant non-compliance and/or a change in biological resources. For additional information about this use, please see the Compatibility Determination in appendix D.

Dog walking—Support for Ban

(ID# 77, 244)

Comment: The Cape Cod and Islands Group of the Sierra Club agreed that dog walking should not occur on the refuge because they feel it can interfere with wildlife and “creates an unpleasant experience for other users.” One individual wrote, “I like the idea that you will manage much more of the land including the low tide water areas as we all know that this is some of the more important habitat for all wildlife...Please keep dogs out of this area as much as possible.”

Response: The refuge staff believes that keeping dogs on a 6-foot leash on Morris Island during the off season will minimize impacts on wildlife. We will also establish temporary closures around potential nest sites if nesting behavior is observed. If it is determined that the impacts are more significant to wildlife, if new wildlife

uses occur which are impacted by dogs, or if there is significant non-compliance with refuge policies, then we will reassess this activity. A re-assessment could lead to a permanent closure of Morris Island to all dogs at all times.

Jogging

(ID# 64, 84, 91, 94, 95, 98, 99, 101, 102, 119, 124, 125, 126, 128, 129, 138, 139, 142, 146, 148, 150, 168, 176, 181, 182, 184, 187, 194, 195, 197, 201, 203, 204, 207, 209, 213, 217, 220, 223, 234, 237, 244)

Comment: The Cape Cod and Islands Group of the Sierra Club expressed their opinion that the jogging should not occur on Morris Island lowlands. The Town indicated that jogging is low impact and should not be constricted or prohibited. Numerous individuals stated that jogging has been enjoyed by the public on Nauset/South Beach for years and should not be prohibited there now as proposed in the draft CCP/EIS or is an unnecessary thing to consider.

Response: Jogging will be restricted to the portions of Morris Island that are open to the public. This area is more heavily used by refuge visitors and is less used by sensitive wildlife (perhaps because it is so heavily used by people). Because it is connected to private and Town land, it would be very challenging to stop visitors who are jogging on abutting properties and crossing onto the refuge, especially since other non-wildlife-dependent uses are also occurring on the Morris Island Trail.

We have not changed our position about jogging on North Monomoy, South Monomoy, and Minimoy Islands. These areas are sensitive nesting and staging areas for wildlife. In addition to disturbance to birds, jogging on South Monomoy Island could potentially impact the larval stage of the threatened northeastern beach tiger beetle. Larval burrows are especially susceptible to trampling, which results in excess energy expenditure and reduced hunting time for the inhabiting individual. Joggers exert more ground pressure with each step than the average walker. Pedestrian use also has the potential to disturb loafing seals. We realize that some people will be disappointed that they will no longer be able to jog on the refuge outside of Morris Island, but we believe the impacts to refuge wildlife and habitat are too great to allow it elsewhere on the refuge.

Individuals interested in jogging have numerous opportunities outside the refuge, including on adjacent Chatham town beaches and the Cape Cod National Seashore. Given the likely impacts on wildlife and wildlife-dependent recreation, and the numerous opportunities available to support jogging and walking off the refuge, this use is determined to be not appropriate on Monomoy NWR other than on the Morris Island Trail. Please see the Finding of Appropriateness and Compatibility Determination in appendix D for more information and cited literature.

Organized Picnicking

(ID# 64, 84, 91, 94, 95, 98, 99, 101, 102, 119, 124, 125, 126, 128, 129, 138, 139, 142, 146, 148, 150, 168, 176, 181, 182, 184, 187, 194, 195, 197, 201, 203, 204, 207, 209, 213, 217, 220, 223, 237, 258, 264)

Comment: The Town and numerous individuals disagreed with our finding that organized picnicking is not an appropriate use of the refuge. The Town wrote, “The [draft] CCP/EIS identifies potential concerns with organized picnicking and does not find it to be an appropriate activity for the refuge. Concerns include an increase in pests and scavengers and a need for increased monitoring and refuge resources. The Town could not disagree more strongly with this conclusion. Picnicking has been found to be an appropriate refuge activity in the past and has been allowed in the refuge for many decades. The Town contends that this activity should be allowed to continue with the stipulation outlined in the CCP/EIS: “leave-no-trace, carry-in/carry-out all food containers, bottles, and other waste and refuse must be taken out.” The Town further asserts that it would be more reasonable to limit the activity to designated areas and times as is specified in the Town’s Beach and Park Rules and Regulations.” Many other individuals said that a ban on picnicking would prohibit them from enjoying South Beach as they had in the past.

Response: The refuge staff understands the interest by the community and visitors to be able to have a place to picnic and congregate on the beach. Town regulations will apply to Nauset/South Beach east of the management boundary established by the MOU, so picnicking will be able to continue there.

Our primary concern with large amounts of food on the refuge is the attraction it poses for gulls. Gulls are considered predators within the common tern colony and other nesting areas on the refuge in most years

(Kate Iaquinto, personal communication 2015). We work very hard on the refuge to manage gull populations and behavior to reduce the impact of gulls as predators (see Appendix J). The attraction of gulls to large picnic areas to scavenge on food left at the site (or the intentional feeding of wildlife) is likely to perpetuate the very issues refuge staff are trying to combat. Gulls are opportunistic and once they detect a new food source, they will continue to loaf in that area, possibly in large concentrations. Gulls readily adapt to the presence of recreationists and over time may even see humans as a food source when they are picnicking (Laux 2014). Another important concern we have is that large groups picnicking on the refuge, especially when grills are being used, diminishes wilderness character and negatively impacts visitors to the Monomoy Wilderness who are looking for solitude and naturalness. For these reasons, organized picnicking (which includes the use of grills) has been found to be an inappropriate use and will not be permitted on the refuge.

Our previous approval of picnicking on the refuge is not the same as the organized picnicking that we are discussing in this plan. We have previously found picnicking that occurs as a secondary use to another refuge purpose, such as wildlife observation which is often a multi-hour to all-day visit, to be a compatible use. We are not banning all food and drink on the refuge, as we understand that those who are visiting the refuge to participate in wildlife-dependent uses, such as fishing, birding, and photography, will bring a small amount of food and drink for personal consumption. Organized picnicking, where the primary purpose of the refuge visit is to gather with friends and family with a focus on food and drink, has not been an approved use in the past. We currently contend with litter and debris on the refuge quite often despite being a leave-no-trace, carry-in-carry-out facility. If large-scale picnicking was allowed, it is reasonable to assume that littering would only become more severe and occur more regularly.

Please refer to the Finding of Appropriateness in appendix D of the final CCP/EIS for more information.

Camping (ID# 64)

Comment: The Town agreed with our finding that camping is not appropriate at Monomoy NWR. This is consistent with their town beach regulations which prohibit camping.

Response: Thank you for your comment. Our justification for this prohibition can be found in the Finding of Appropriateness in appendix D of the final CCP/EIS.

Jetskiing (ID# 64, 155, 234)

Comment: The Town and Mass Audubon agreed with our finding that jetskiing is not appropriate at Monomoy NWR. This is consistent with Town bylaws which prohibit jetskiing. Another commenter said that jet skis have a negative impact on loafing birds and vegetation.

Response: Thank you for your comment. Our justification for this prohibition can be found in the Finding of Appropriateness in appendix D of the final CCP/EIS.

Over-sand Vehicles (ID# 64)

Comment: The Town agreed with our finding that over-sand vehicles are not appropriate at Monomoy NWR. This is consistent with their town beach regulations which prohibit over sand vehicles.

Response: Thank you for your comment. Our justification for this prohibition can be found in the Finding of Appropriateness in appendix D of the final CCP/EIS.

Fires and Fireworks (ID# 64, 236)

Comment: The Town and one individual agreed with our finding that fires and fireworks are not appropriate at Monomoy NWR. This is consistent with Town beach regulations which prohibit open fires and fireworks. It is also illegal to possess or use fireworks under Massachusetts State law.

Response: Thank you for your comment. Our justification for this prohibition can be found in the Finding of Appropriateness in appendix D of the final CCP/EIS.

Commercial Fishing Guide Permits

(ID# 64, 235, 243)

Comment: The MA DMF suggested that the refuge should only require a commercial fishing guide permit for those for-hire guide services that come ashore with a vessel or use the upland habitat. They feel it is “impractical and unenforceable” to require the permit for all commercial fishing guides. Another commenter believes that commercial fishing guides increase traffic in the wilderness with inevitable adverse effects. The Town indicated this is an issue worthy of future discussion and review.

Response: We believe our proposal, which is limited to commercial guides who take anglers onto refuge lands and into intertidal waters for recreational fishing activities such as surf fishing, is consistent with this suggestion. It is our intention that these guides would be working through a future concessionaire. We do not intend to regulate guided fishing tours that are operating in the submerged waters within the refuge boundary. We have had a number of instances of commercial guides bringing anglers into closed areas. It is possible that these individuals are not aware of seasonal refuge closures. Teaching people how to surf fish, facilitating that use by providing equipment, or helping recreational anglers find great fishing spots in the refuge’s wilderness increases the recreational fishing opportunities for many. This is consistent with the mandate of the Improvement Act of 1997 and is consistent with provisions of the Wilderness Act. Requiring the guides to have permits will ensure that they understand the refuge’s wildlife and wilderness purposes and will result in less inadvertent impact on these resources. It will also help us better understand how many people are fishing on the refuge and where, so we can better adjust our management actions to allow this use as much as possible while protecting nesting and staging grounds for migratory birds.

Commercial Tours, Ferries, Guided Trips, and Outfitting

(ID# 64, 71,155, 234, 235, 236, 273)

Comment: The comments on tours ranged from no tours at all, to no expansion of tours (people can use their own boat to get to the islands), to a request from the Town that multiple service providers be allowed. There is a concern that commercial tours increase traffic in wilderness areas and adverse effects will occur. One person wanted to ensure that kayak tours are located and regulated so that breeding and loafing birds are not impacted. Mass Audubon expressed concern that new or expanded recreational opportunities be carefully managed so that staff and funding resources be adequate to manage the increased recreation without detracting from efforts to protect wildlife. Two commenters had questions about Rip Ryder, the current permittee operating out of refuge headquarters on Morris Island. One of the questions asked if Rip Ryder is “presently compensating the USFWS for the use of public land to operate his business and provide parking for his customers? If not, why is this an appropriate subsidy to this individual business?” Another individual suggested that if Rip Ryder is allowed to continue operating from the refuge, then this business should find a satellite location to pick up and drop off its customers as one means of reducing parking congestion.

Response: We believe guided tours operated through a concessionaire are an appropriate way to increase visitation, awareness, and appreciation of the refuge and its resources while minimizing, and possibly reducing, the impact of visitors on the refuge wildlife. We propose to conduct an open bidding and solicitation process to attract multiple vendors to bid on a concessionaire contract that provides interpretation, outfitting, and transportation. The selected concessionaire would likely coordinate with local individual businesses for each particular service which would result in multiple service providers at the refuge. This process will address several issues including better opportunity for potential vendors to compete for a contract, better messaging to visitors about the refuge and our resource management and wilderness protection mandates, and more opportunity for visitors to get onto the refuge to fish, observe wildlife, or take wildlife photos. We do believe that having a concessionaire provides for wildlife-dependent recreational opportunities under the overall guidance of refuge staff and will enhance rather than detract from our mission.

The Improvement Act requires us to provide wildlife-dependent public uses on refuges, when compatible with the refuge purpose. Monomoy NWR is difficult to access without a boat, and we believe limiting access to only those that have a private boat or the ability to charter one individually is a failure to public service and would create a disconnect from the general public to the refuge. Because of this, in the late 1990’s, special use permits were issued to three companies to bring visitors to the Monomoy Islands while certain non-profit groups

were allowed to conduct guided tours for birding and natural history. Monomoy Island Ferry (Rip Ryder) and Outermost Harbor Marine both still have special use permits to provide ferry services to refuge visitors. Both pay an annual fee to the FWS for the permit. Monomoy Island Ferry has approval to operate out of the refuge headquarters but did not do so in 2015 due to the shallow waters off the refuge.

Once a competitive, multi-year concession is implemented, the existing special use permits will terminate. Current permit holders can compete for the concession contract along with other potential vendors, or could possibly work through the concessionaire to provide specific services. We do anticipate allowing the concessionaire to operate from refuge headquarters, should the water conditions allow, but we will require that visitors be shuttled from an off-refuge parking site to Morris Island. Use of shuttle vans will reduce vehicular traffic to Morris Island and reduce parking congestion. We believe in the long run that refuge visitors, neighbors, and wildlife resources will all benefit by a comprehensive, well managed concession program.

Commercial Photography

(ID# 64)

Comment: The Town commented that regulating commercial photography under the proposed permitting structure is over-burdensome and too general to be effective.

Response: Public Law 106-206 governs the use of commercial photography and filming on national wildlife refuges. We must comply with Federal law and regulations and ensure we operate under the guidance of Service policy in the administration of this use. We provide more information about this policy and how we will administer this program in the compatibility determination located in the final CCP/EIS, appendix D.

8. Other Water-based Activities

Dredging

(ID# 63, 64, 153, 244)

Comment: The Town commented that “the CCP is unclear as to whether it is the intention of the FWS to now claim sole authority over public dredging projects, including those where permits have already been approved. The Town would strongly oppose such an effort by FWS if that is the intent. With respect to the placement of dredged materials, the Town would welcome the opportunity to discuss placement within the refuge from Town sponsored dredging projects. This material could be used for erosion protection, habitat enhancement or other similar purposes.” The Cape Cod Group of the Massachusetts Chapter of the Sierra Club urged us to be involved with dredging discussions in Outermost Harbor as well as any future revetment installations in order to protect the Service’s long term interests. The Association to Preserve Cape Cod criticized us for failure to engage the harbormaster concerning navigational maintenance dredging.

Response: We maintain our jurisdiction regarding dredging projects within the waters of the Declaration of Taking. We have, and will continue to, work closely with the Town and the U.S. Army Corps of Engineers on the review and approval of dredging projects and the deposition of dredge materials. We understand and support the need to keep the navigable waterway open to the entrance to Stage Harbor, which bisects the Northwest corner of the refuge’s boundary. The right to maintain that channel has been established for Stage Harbor and we support the maintenance dredging which occurs within the refuge boundary. We do have concerns about dredging the Morris Island Cut but realize it is now a permitted project. Therefore, we will seek to use the dredged material from this or other permitted projects in a beneficial manner on refuge lands on Morris Island. We will continue to participate in reviews and discussions with the U.S. Army Corps of Engineers, the Town, and other stakeholders on future dredging projects within the refuge’s boundary. Our interests will focus on minimizing impact on submerged aquatic vegetation and benthic communities, the impact of dredging on the geomorphology of Morris Island and the Monomoy Islands, as well as the possible use of dredge material for habitat enhancement and erosion protection.

Moorings

(ID# 63, 64)

Comment: The Town wrote that they do not support the proposed outright prohibition of mooring placement within the Declaration of Taking’s open water. There are currently no permits for moorings in these waters,

but they felt they should have jurisdiction over any future requests. They stated that “new technologies [can] minimize or eliminate the likelihood of mooring tackle impacting eelgrass meadows and benthic communities.”

Response: During our initial review process we documented the impacts of conventional mooring systems on the benthic community and eelgrass beds. It was brought to our attention that there is a new mooring technology that is being developed and deployed in sensitive marine environments which are referred to as “conservation moorings.” Conservation moorings are designed to minimize habitat impacts between the mooring components and the seafloor (Urban Harbors Institute, 2013). It is our understanding that there is research being conducted in several harbors on Cape Cod that are assessing the impacts of conservation moorings on submerged aquatic vegetation. There could be some potential environmental impacts caused by conservation moorings but at this time the results have not been published. The results of this study, and the recommendation it provides, will guide us in our review of mooring placement within the refuge’s boundary.

In our revised alternative B in the final CCP/EIS, we will evaluate the placement of moorings within the refuge boundary on a case-by-case basis. We will work with the Town Harbormaster’s office and conduct a finding of appropriateness and, if found appropriate, write a compatibility determination which must undergo public review, before making a final decision about the placement of any moorings in Monomoy NWR waters.

9. Refuge Administration and Infrastructure

Staffing

(ID# 63, 64, 90, 103, 155, 202, 231, 234, 268, 272)

Comment: Three individuals commented that additional staff will be needed to enforce new regulations, given the regional importance of the refuge to the recovery of endangered species. Another individual commented that the staff should not be focusing on visitor services, but instead on nesting and staging areas for migratory birds; and a minimum of four full-time staff is required. On the other hand, another individual suggested that we add a Visitor Services Specialist position to the current approved staff for outreach to schools, scouts, seniors, and the community as well as on the refuge. The Town indicated that additional staffing for the refuge, and accommodations for increased staff levels, was worthy of future discussion and review. One person felt the lack of a Federal commitment for staffing was restrictive. Another commenter opposed any additional staffing at the refuge.

Response: Additional staff will be needed to completely accomplish the additional workload associated with the expanded objectives under the Service-preferred alternative. Within the next 15 years, if funding is available, we would like to fill two Park Ranger (Law Enforcement) positions to enforce refuge regulations, with a primary emphasis on resource protection and visitor safety. Until then, we will continue to recruit and employ seasonal and term biological, visitor services, wilderness staff, interns, and volunteers to assist in all refuge activities including the protection of endangered species.

We understand the tension between visitor services and resource protection, particularly as it relates to determining the most needed positions to fill. Some activities, such as wildlife observation or fishing, are considered priority public uses because they are wildlife-dependent. According to our guiding legislation, the Improvement Act of 1997, we are to facilitate these uses when compatible. As shown on the staffing charts in appendix G, we currently have no visitor services staff. So, in the coming years, we hope to recruit new visitor services staff in addition to more biologists. A strong visitor services program will educate visitors and schoolchildren, build understanding and support for the refuge, and provide a meaningful connection to nature. We think both biology and public use is important and will strive to maintain a good balance between these programs on the refuge.

Budget and Costs

(ID# 112, 261)

Comment: One individual asked how the refuge’s “overall budget can be increased to include 7 additional full-time employees” during a time of government budget cutbacks? They further noted that there is no need for 10 year-round full-time positions, but rather that these positions should be seasonal. A second commenter asked how much Monomoy NWR has spent writing the plan over the past 9 or 15 years.

Response: The President and Congress establish spending priorities for the Federal Government. Whether and/or when our budget would result in the employment of additional permanent staff remains uncertain. In this plan, we identify our need for additional staffing based on the workload we feel is necessary and appropriate for sound management of the refuge. Our desired staffing level is consistent with a 2008 national staffing model for the Refuge System which indicated that Monomoy NWR, due to its location, size, number of visitors, and complexity of its biological program, should have a permanent staff of nine full-time employees. It is unlikely that we will be able to hire all the staff we need, but it is important to identify the full-time workload need should Federal priorities change in the future. In the meantime, we will continue to recruit seasonal and term staff, interns, and build up our volunteer program.

The cost to operate the refuge includes annual salaries for the full-time employees which were approximately \$180,000 and approximately \$40,000 for the seasonal workers in 2013. Additional support came from the refuge complex headquarters in Sudbury. It is difficult to quantify the support costs specific to Monomoy NWR, as the refuge complex includes eight refuges. It is difficult to determine how much it has cost us to write the comprehensive plan, as both staff and contractors have contributed to it over the years. Writing plans is part of the work we do when managing all our refuges, including Monomoy NWR. Specifically, in fiscal year 2013, the refuge spent approximately \$70,000 on materials and services to operate the refuge. Many of these expenses were direct expenditures in Chatham and surrounding towns, including boat and vehicle fuel, boat, and vehicle maintenance, contractors, maintenance, and office supplies.

The refuge contributes locally as visitors seek lodging, dining, shopping, and other tourist related spending opportunities. Many visiting anglers hire fishing guides and take seal tours. This also contributes financially to the Town. The Town also receives approximately \$22,500 annually in Refuge Revenue Sharing payments. We estimate, based on studies of refuge visitors and national information, the total direct expenditures associated with refuge visits in 2012 was more than \$1 million. Over 95 percent of these expenditures were from non-residents.

While it does cost the government, and therefore the taxpayers, money to operate Monomoy refuge, there is also a significant local economic contribution as a result of the work we do and the public use opportunities that we provide.

Proposed Downtown Visitor Contact Station

(ID# 59, 64, 234, 244, 261)

Comment: Three individuals made comments that a satellite visitor contact station/information booth would be a great resource. The Town indicated that the visitor contact station was worthy of further discussion and review. One commenter noted that the current office is small and cramped. One questioned where the funding would come from to build a visitor center.

Response: We believe a downtown visitor contact station would be an asset to the Town for several reasons. It would be a draw for visitors and would help bring people to downtown where they might also shop and eat. Parking at the visitor center could reduce traffic congestion if a shuttle brought people to the refuge from the visitor contact station. Programs held at the visitor contact station could also be of interest to Chatham and other Cape community residents, as well as visitors. We recognize the importance of being a part of the community. A future location to interact with people off-site will ensure we are conducting broader outreach to residents and visitors about the refuge. We hope to gain the support of the Town for this facility, and look forward to seeking funding in order to make it a reality. While would prefer to locate a visitor contact station in Town, we will also consider locations in the Town of Harwich if we can gain the support of that town, and a good location can be found there.

Roads and Right-of-Ways

(ID# 52, 63, 64, 81, 85, 100, 229, 244, 250, 286)

Comment: Concerns about both the Morris Island causeway and the right-of-way over Tisquantum Road and Wikis Way were expressed by several commenters, including the Quitneset Associates and the Town. Comments on the causeway focused on an opposition to the widening of Morris Island or causeway roads. Built on dredge spoils over 50 years ago, the Cape Cod Group of the Massachusetts Chapter of the Sierra Club

indicated that the causeway has naturalized and become a unique dwarf-shrubland coastal dune community and should not be altered. At least one commenter does not believe a wider causeway is safe as it will increase the speed of vehicles where pedestrians are present. This individual is willing to yield to oncoming vehicles which slow passage on the road. This is a sentiment held by some residents of Morris and Stage Islands. It is believed that additional traffic to the refuge, either due to a shuttle service or private automobiles, presents an extreme over-burdening on the private roads that are owned by Morris Island residents. Residents are concerned about the issue of road maintenance paid for by the residents, liability and other insurance issues, and finally, for all residents having to deal with the increase in traffic coming on and off the island. Quitneset Associates believe that traffic congestion on Morris Island is not a function of inadequate parking space but rather of inadequate notification of refuge visitors when the parking lot is full. Another comment suggested that the reason we support widening the causeway was to accommodate a shuttle. One commenter indicated the private roads are not designed for people walking or for cars passing, and were never intended for the public.

The Town commented that “the legal implications regarding liability over FWS’s right-of-way into the refuge headquarters on Morris Island is an ongoing and unresolved issue that should be determined before implementation.” Quitneset Associates and another individual indicated that they do not believe the refuge has a properly vested right-of-way to authorize public access to its headquarters over Morris Island roads.

However, another individual commented that the “United States of America, acting through the FWS, is the sole holder of an easement from the dike to the refuge because the Town failed to set out its right-of-way during the late 1950s. This easement is 33 feet in width though Wikis Way is now restricted to roughly 20-21 feet, fence to fence. The FWS deserves the thanks of all who use the refuge for defending the public’s historic right-of-way. The FWS should make clear to all parties that the public’s ROW as agreed to in the 1980 relocation agreement with Quitneset Associates, Inc. and Edward Noyes, Jr. will not be relinquished or degraded.”

Response: It is acknowledged by all that the Morris Island Causeway holds approximately 80 to 85 cars and can reach up to 85 percent capacity during the summer months. The Causeway has no shoulder, requiring vehicles to park partially in the travel lane, which effectively reduces the roadway to 1.5 lanes. According to Service staff, emergency responders have reported problems responding to residential and refuge needs when the causeway parking is filled. One of the alternatives in the Volpe Transportation Study, which was commissioned by the Service, is to relocate and reinstall the existing fencing to provide more space for parked cars. Although the area would not be paved, it would allow more space for cars to pull out of the travel lane when parking. This would improve causeway safety and allow more space for emergency vehicles to travel across the Causeway, even when vehicles are parked there. In addition, it would also be safer for people unloading and loading kayaks, shellfishermen, and refuge visitors. We do not agree that pedestrians are more at risk walking in a narrow road with passing vehicles and parked vehicles than a wider road. Concerns about speeding can be addressed through posting of a slow speed limit and municipal enforcement. Seasonal speed bumps could also be used to slow traffic. The benefits of a wider causeway are completely independent from shuttle service, and neither is contingent upon the other.

We signed a grant agreement on November 17, 2012, with the Town that provides up to \$150,000 in grant funds to the Chatham Department of Public Works (DPW) to improve the parallel roadside parking situation along the east shoulder of the Morris Island causeway. The Town is still working on the design and the acquisition of permits for this project.

We do agree that signage needs to be improved along the right-of-way, both so that visitors know that they are on the correct route to the Visitor Center, and also to protect the privacy of Morris and Stage Island residents. We are confident that we can design and install some signage that will help achieve both of these outcomes, and look forward to working with Quitneset Associates on this issue.

When the refuge was established, there were no homes on Morris Island. All the homes have been built since the establishment of the refuge, including a home directly next to the office. Everyone who purchased or built a home on Morris Island knew the refuge office is there and that we have visitors who will be travelling on the private roads to get to the beach, trails, and office. The Service’s legal 33-foot right-of-way over Tisquantum Road and Wikis Way to access the refuge headquarters on Morris Island is defined in the Agreement to Relocate Rights-of Way on Morris Island between Quitneset Associates, Inc. and the Service dated February

11, 1980. It is the responsibility of the Service to maintain the legal bounds of this right-of-way so that it is safe for both vehicles and pedestrians. We have twice asked Quitneset Associates to provide the documentation to uphold their claim that our right-of-way is not properly vested. We do not agree with them and will continue to use the right-of-way and keep it accessible for refuge operations and visitors alike.

We do understand that refuge operations and visitors cause wear on the roads, and we have offered twice in the past to pursue how we may contribute to the maintenance of these roads. The Refuge Roads Program within the Service offers funding opportunities to maintain roads that lead to a national wildlife refuge. If Quitneset Associates confirms that they would accept some assistance, we will be happy to investigate how these funds might be used for road maintenance on Morris Island and Stage Island.

Proposed Shuttle Service

(ID# 63, 81, 229, 234, 235, 236, 244, 250, 261, 286)

Comment: Several individuals expressed concern about and opposition to the proposed shuttle service, suggesting it would be an additional burden on private roads, it is unnecessary given the number of visitors, and the real issue is not lack of parking on the causeway, but the problem is traffic congestion. One individual suggested that the refuge find suitable satellite parking and utilize narrow vans, rather than wide busses. At least one felt that busses from Chatham would encourage more visitors, and having more visitors on the refuge seems to be at odds with the outstanding plans proposed for wildlife and habitat conservation in the draft plan. Another commenter thought a shuttle might be a “bit much” but thought a schedule of hourly trips using the Cape transport system would be a good option.

Quitneset Associates opposes a seasonal visitor shuttle traversing privately owned residential roads. They said a shuttle every 20 minutes, 10 hours per day would impose an unconscionable additional burden on the already overburdened right-of-way easement, and that it is “unnecessary because the data relied upon in the Volpe proposal does not support the need for shuttle service.” Quitneset Associates also stated that the Volpe study predicts that the shuttle will only transport 132 passengers per day. “Under these circumstances, it is plain to see that the proposed shuttle system is unnecessary, for it is not backed by cogent evidence of a parking problem that needs to be alleviated by frequent bus trips carrying few passengers and would merely compound existing traffic congestion on Morris Island and its approaches.”

One individual asked about the status of the grant given to Chatham and the refuge to establish and operate “peak season” shuttle service.

Response: In response to concerns expressed in large part by Quitneset Associates, we contracted with the U.S. Department of Transportation’s Volpe: The National Transportation System Center in 2007 to look at ways we could reduce the amount of cars coming to the refuge headquarters and visitor contact station. The Volpe report, known as the “Alternative Transportation Study: Monomoy National Wildlife Refuge” (U.S. Department of Transportation 2010), recommended a multilayered or interconnected approach to accomplish this. This includes relieving traffic congestion in downtown Chatham and the Morris Island area; alleviating capacity issues at existing Town parking lots; expanding transportation options such as the shuttle; and reducing or eliminating confusion/unawareness of travel options by using variable message signs.

Volpe specifically recommended a shuttle system be implemented in order to reduce congestion at the refuge and along the Morris Island causeway. Use of a shuttle by refuge visitors would also reduce the number of vehicles travelling on Tisquantum Road and Wikis Way. A seasonal shuttle service was deemed possible because in part of the location of several potential satellite parking areas outside of downtown Chatham which would allow visitors to leave vehicles and utilize the shuttle to get to the refuge. The transportation experts at Volpe estimated a shuttle which ran every 20 minutes is the level of service required to encourage visitors to choose the shuttle instead of driving to the refuge. This study also identified several different types of vehicles, ranging from vans to 16-passenger mini-busses, capable of safely traversing the narrow roads of Chatham.

We followed up on the Volpe recommendation and secured funding for a shuttle, in partnership with the Town, to address parking and traffic congestion in Town as well as on the refuge. The Town has decided to develop their shuttle independently, so we will separately pursue the purchase of a shuttle to be operated by refuge staff, volunteers, a concessionaire or a contractor.

We believe that the Volpe staff better understand how to estimate and predict transportation needs and impacts than refuge managers or the general public. When we get our shuttle system operating, we can explore the optimal times for shuttle service and the frequency of shuttle operations. It is possible that we will run the shuttle less frequently if it is not part of a Town shuttle. We will certainly adapt our shuttle management to reflect demand and our ability to meet that demand.

Entrance Fees

(ID# 85, 249)

Comment: One commenter opposed an entrance fee, and another asked if an entrance fee is established, would the FWS “consider a seasonal pass as provided at the Cape Cod National Seashore?”

Response: A parking fee is not the same as an entrance fee. It is not our preferred option to establish an entrance fee for the refuge. However, if we did, we would strongly consider the suggestion for a seasonal pass as we move forward with the development of the refuge’s recreational fee program. At Great Meadows NWR, which is a part of the same complex as Monomoy NWR, there is an annual pass that is available to visitors who visit refuge trails in Concord. We will explore a similar option for Monomoy NWR if we decide to move forward with an entrance fee. Also, if we establish an entrance fee, holders of a current Federal Duck Stamp, or the Interagency America the Beautiful National Parks and Federal Recreational Lands Pass (Annual Pass, Annual-Military Pass, Annual Volunteer Pass, or lifetime Senior Pass or Access Pass) would not have to pay an additional fee to visit the refuge.

Parking Fees

(ID# 48, 55, 57, 59, 60, 63, 64, 71, 131, 234, 236,241, 279, 288)

Comment: Several individuals made comments about the proposed parking fee. Most were opposed and felt that parking should remain free or that we accepted voluntary donations. For example, one wrote, “I suggest parking...be free as it is now [but] be limited to 2 hours...Free parking would be appreciated...and would encourage use that otherwise might not happen.” One specifically felt it would undermine public relations in the community, but acknowledged that the NPS charges for the use of national seashore facilities. Some, including a number of recreational fishermen from England, said they might go elsewhere if they had to pay a parking fee. The Town indicated that this was an issue worthy of further discussion and review. Others expressed support for the proposal or made suggestions that parking should be limited to non-resident visitors, or that the FWS should work with the Town regarding its Resident Beach Parking sticker. One commenter thought it was fine as he assumes the annual parks pass can be used to pay the parking fee. Another wanted clarification on how the fee would work for recreational anglers coming to the refuge early or late in the day.

Response: We understand that instituting a parking fee, however minor it would be, is opposed by some. It may not have been clear to many commenters that paid parking would be limited both seasonally and temporally. June 1 to September 15 is our peak visitation. During that time period, a parking fee would be required from 9 a.m. to 6 p.m. daily and there would be a 4-hour time limit during. Parking would be free at other times, and the parking lot would remain open 24 hours daily for Morris Island anglers, who are the only users who are permitted on Morris Island before sunrise and after sunset. These seasonal and daily time restraints will not impact the anglers who come to the refuge in the spring or fall seasons. However, all visitors who come to the refuge during the dates and times that a parking fee is in place will need to pay, regardless of whether or not they have an Interagency Pass, Senior Pass, Access Pass, or Duck Stamp. This is not an entrance fee, it is a parking fee. People who walk in or bicycle to the refuge will not have to pay the parking fee.

The main reason we feel a parking fee is necessary is to provide access to more visitors during the peak season. Even though we are pursuing a shuttle that would reduce the reliance on private vehicular access, we understand that many people want the flexibility that comes with their own vehicle. We have some vehicles parked all day in our lot during the height of the season, and we have observed people using the refuge and then being picked up by boats to go off refuge. This reduces easy access to the refuge for visitors and increases congestion on the Morris Island causeway. The suggestion of a time limit is appreciated although a 2-hour limit may not be sufficient for visitors who want to fish or take a nice, slow walk on the Morris Island trail or walk on the beach. Because it requires additional staff time and resources to provide peak-season parking and facility

access at the refuge, we believe a nominal fee will assist in covering these costs. We will be happy to talk with the Town and see if they have some other suggestions we could consider to help us achieve our goal of increased access to refuge visitors during the peak season.

Aircraft Ceiling

(ID# 63)

Comment: One commenter representing the Town indicated that our intention to work with the Federal Aviation Administration to increase pilot awareness of a 2,000-foot ceiling restriction for aircraft was an area of potential concern.

Response: Maintaining a 2,000-foot ceiling over national wildlife refuges is commonly taken to protect wildlife from the noise of aircraft and from the visual disturbance that low flying aircraft can inadvertently cause. Refuge visitors engaged in wildlife observation and other activities benefit from the absence of low-flying aircraft. At Monomoy NWR, the sensitivity of the migratory bird populations throughout the year, whether during migration, breeding or wintering periods, as well as the wilderness designation of much of the refuge, strongly warrant the designation of this advisory ceiling and Service efforts to achieve compliance.

Wind Turbine

(ID# 63, 64, 100, 229, 231)

Comment: We received two letters expressing opposition to the possibility of installing a wind turbine on Morris Island. Both comments were from Morris Island residents. These comments stated that the installation of wind turbines or other “green energy” measures to increase the proportion of Monomoy NWR electricity consumption derived from clean, renewable sources should not come at the expense of the very birds and bats the refuge was created to protect. Opposition to a wind turbine at Morris Island headquarters was also based on the presence of several private homes adjacent to the refuge headquarters, and dangers relating to noise and light emissions, ice dispersal, hurricane breakage, and avian harm. The Town indicated that a proposed wind turbine at refuge headquarters was an issue worthy of future discussion and review. One commenter said that it was a bad idea to put up a wind turbine in a Wilderness Area on a flyway that endangered birds utilize for breeding and migration.

Response: The draft CCP/EIS stated that we had looked at two possible locations for wind turbines to produce clean electricity on the refuge—the Morris Island Headquarters and Monomoy Point Light Station on South Monomoy Island. We clearly eliminated a possible wind turbine at the Monomoy Point Light Station after conducting bird and bat surveys. This site is not part of the Monomoy Wilderness, and we would not have considered erecting a wind turbine in wilderness, but would have considered the impacts on nearby wilderness if we had decided to further pursue that project.

We already have solar panels at our Morris Island headquarters, but will now consider the feasibility of utilizing more solar and possibly geothermal in addition to wind. We will evaluate improvements in technology over the next 15 years to ensure that we select efficient, cost-effective methods that do not adversely affect birds and bats. We will conduct additional NEPA analysis as appropriate. We have modified the final CCP to reflect this change.

Operations and Maintenance

(ID# 64, 90)

Comment: One individual commented that the “Service’s lack of a Federal commitment for staffing, upgrades, operations, and maintenance is restrictive. Your infrastructure is already deteriorating. This D-EIS proposes no floodgates, better drains or coastal defense to respond and recover from multi-hazard threats. The CCP is without prevention and post disaster reconstruction.” The Town identified many changes in refuge infrastructure and operations worthy of future discussion and review.

Response: The Town’s comments have been addressed elsewhere in this section, as has staffing. The Service has upgraded our facilities at Monomoy NWR and is committed to further upgrades and maintenance. We understand, because we are bounded by Nantucket Sound and the Atlantic Ocean, that the refuge is susceptible

to potential multi-hazard threats. In order to prepare for potential hazards at the refuge, we annually update our Hurricane Action Plan and Continuity of Operations Plan, and we take steps to protect our equipment and facilities during weather-related events. In the event that post-disaster reconstruction is necessary, we will rely on our Regional Office staff to provide a multitude of support functions to help us get back into full operation as quickly as possible.

Monomoy Point Light Station

(ID# 231, 236)

Comment: One individual commented that the Monomoy Lighthouse and associated buildings are on the National Historic Register and as proposed in Alternative C, to “detail its history and then let it continue to deteriorate is against all standards established in the Historic Sites, Buildings, and Antiquities Act.”

Another commenter said, “Let’s talk about money. We have a lighthouse down there that was restored. You guys could make money by having tourists down there.” Support for turning the lighthouse into a staffed visitor center was expressed.

Response: The Service will preserve the Monomoy Point Light Station as much as feasible, both for its cultural value, its use as a base for our seasonal biological staff, and its potential contribution to our visitor services program. It is our intention to maintain the National Register light station structures in place in perpetuity, which requires annual maintenance and periodic major repairs and refurbishments. In order to help protect the buildings, we feel it is necessary to have access to electricity in the lighthouse keeper’s house, which is why the final CCP/EIS contains strategies to look at the possible role of solar power. We understand that the natural processes of erosion and decay may, over time, result in the destruction of the light station structures at the site. The NHPA provides for mitigation of these foreseeable adverse effects on National Historical Register sites. The mitigation program would be developed in consultation with the SHPO and in accordance with the cultural resource provisions of the NHPA and the Wilderness Act. If necessary, we will document the lighthouse and the keeper’s house following NHPA standards and then let the buildings decay. However, that is not in alternative B, our preferred alternative, and is not the path we wish to take.

A tour of the lighthouse and keeper’s house could be part of a new interpretive opportunity provided by a concessionaire. We have no plans to staff the lighthouse as a visitor center due to its remoteness and difficulty of access.

Trash and Debris Management

(ID# 75, 100, 210, 259, 261, 275)

Comment: Comments were received about trash, marine debris, and materials such as sign posts used in refuge operations. One complained about beer cans on the refuge. Another that huge bags of plaster were left in the dunes for weeks waiting for pick up during the renovation of the lighthouse. Some of their contents had been strewn across the beach. Another commenter expressed concern about missing sign posts.

Response: The refuge is a leave-no-trace, carry in-carry-out facility, and we find the amount of trash at our Morris Island headquarters has decreased with the implementation of this policy. We encourage all refuge visitors to pack in and pack out all food containers, bottles, wrappers, trash, and other waste and refuse. Unfortunately, it is impossible to gain 100 percent compliance, as some people are inconsiderate of the impact that debris has on refuge wildlife, visitors, staff, and occasionally neighbors. This is true of all places where the public is allowed, including shopping centers and parking lots.

We acknowledge that the lighthouse renovation produced a lot of trash and debris. During the season following the renovation, we attempted to remove all the trash. Because Monomoy is a wilderness, everything has to be taken by hand across the island to the boat landing. This is very labor intensive and is totally dependent on the weather for us to get a crew there. We have removed all the surface debris from the lighthouse renovation project but recognize that shifting sands continuously expose debris, so we will continue to cleanup this site as necessary. Every spring and fall, we work with refuge volunteers to conduct a beach clean-up and would like to expand this effort with the help of additional volunteers. These clean-ups focus on offshore marine debris which floats onto the beach.

In response to the comment about refuge signs, we do recognize that we lose some signs every year. The loss of some signs cannot be avoided—this is a marine environment that sometimes experiences high winds and surf.

We try our hardest to recover signs and remove them from the island, but as mentioned before, everything needs to be done by hand as this is a wilderness area, and we need sufficient staff, volunteers, and boat support within good weather windows in order to successfully remove all signs.

Stage Island Lot and Parking

(ID# 63, 64, 86, 97, 64)

Comment: Commenters expressed concern that refuge staff no longer issue and renew permits for parking and storage of dinghies on the Service owned Lot 7B on Stage Island. Other commenters expressed concern about the storage of equipment on the site, its general unkempt appearance, and that a building might be constructed on the lot. The Town indicated that acquisition of the lot adjacent to Lot 7B for Service use only was worthy of future discussion and review.

Response: Since the 1980s we have allowed a small number of private individuals who have no specific connection to the refuge to park their vehicles and store dinghies on Service land on Stage Island. We stopped issuing permits to new individuals many years ago, and beginning in the mid-2000s, we only renewed permits for individuals who had obtained one the previous year. This approach led to a gradual reduction in the number of permits issued to private individuals. In 2012, we notified all remaining permit holders that we would be ending use of the lot by non-refuge personnel, and in 2013, we notified the remaining 12 permit holders that their permit would not be renewed in 2014. Only 9 of the 12 individuals chose to renew their permits that year. No parking permits were issued in 2014 or 2015.

We recognize that failure to allow private parking on this lot is at best inconvenient to the former permit holders, and that finding another good site to park, store, and launch dinghies is not easy. We realize that our decision may adversely affect some individuals. However, for many years the permit holders benefitted from the use of Federal lands for a nominal fee. As this is no longer in the best interests of the refuge, we are upholding our decision to no longer allow non-Service related use of the Stage Island lot.

Our need for unencumbered refuge access to the waterfront and our entire Stage Harbor lot for daily operational refuge management purposes is the primary reason for this change. Non-Service parking and dinghy storage was occasionally interfering with refuge operations (although it may not have been obvious to permit holders), as our use of this lot has changed in the past few years. Having privately owned parked vehicles and dinghies stored on this small parcel resulted in occasional congestion and potential safety conflicts between refuge vehicles, boats, equipment, and personnel and private vehicles, and waterfront storage space. This conflict has been eliminated by terminating all private use of this refuge parcel.

While we do not use the Stage Island lot daily at this time, we envision a time when the lot will be more frequently used. Even now, as sand slowly moves into the Morris Island channel, it is expected that all of the refuge's day to day boating operations will move to the Stage Island lot once the tide and sand bars restrict us from using the Morris Island channel. We have also increased its use for storage as we now attempt to remove all non-permanent structures from the Monomoy Wilderness annually. This includes closed area signs, predator control structures, and tern chick shelters to name a few. This was being done with respect to the wilderness character of Monomoy. This material is moved to and from the island via the Stage Island lot, and some materials may be temporarily stored on the lot for several weeks to months at a time.

We have a need for more storage on the refuge, and hope to build an attractive storage building either on our existing Stage Island lot, on the adjacent lot (should we be able to purchase it), or at another location in Chatham. Purchase of another site might also allow us to provide housing for full-time staff, as the high cost of housing in Chatham and on the Cape sometimes impacts our ability to attract or retain talented staff. We understand the Town would like to discuss the potential acquisition of the Stage Island lot with us, and that most Stage Island residents would probably be opposed to our acquisition of this additional lot. It is our responsibility, however, to ensure our ability to access refuge lands and waters via boat and increase operational efficiency, while minimizing disturbance to refuge neighbors. At this time, we have no funds to acquire the adjacent lot and recognize that we may never be able to do so. Furthermore, should we be able to acquire dock, parking, and storage at a different, but convenient location in Chatham, we would consider an exchange or sale of the Stage Island lot.

10. Planning Process

Compliance with National Environmental Policy Act

(ID# 64, 180, 241)

Comment: The Town and a few individuals commented that the draft CCP/EIS failed to provide adequate NEPA analysis regarding the Eastern boundary. Another commented that the USFWS failed to include anyone who is experienced or familiar with shallow water New England fisheries during the preparation of the draft plan and cited NEPA language encouraging harmony between man and the environment and the value of fish, shellfish, and wildlife resources.

Response: We developed the best assessment we could with the information available to us at the time, but acknowledge that we were missing some local data, particularly regarding fishing. We did consult with the MA DMF in the development of the draft plan, and had them on our planning team, but their involvement did not guarantee that we would anticipate all the concerns of local shellfishermen. As a result of the public comment process, we have learned more about the fishing techniques and equipment used by local fishermen, as well as other concerns by residents, local officials, and organizations. We are making some changes in our Service-preferred alternative B, and have modified the final CCP/EIS better reflect the impact of our alternatives.

We acknowledge the value of our nation's fish and wildlife resources, and are pleased that we provide opportunities for public access to these resources while meeting our legal responsibilities under the Improvement Act of 1997 to manage the lands and waters of Monomoy NWR for wildlife and wildlife-dependent public use as part of the Refuge System.

The effect of the ambulatory eastern boundary has been considered and incorporated in the analysis of all the environmental consequences. We believe that the impacts of our alternatives are appropriately addressed in Chapter 4 of the CCP/EIS. The determination of where the refuge boundary lies is not an "action" subject to NEPA but rather a matter of law. The boundary lies where it lies, and while currently there may be uncertainty or disagreement about precisely where that is, different legal interpretations are not different actions or alternatives within Service management direction. They are in fact different understandings of the background facts against which we must make decisions about how to manage the refuge. In this vein, the MOU between the Service and the Town established a management boundary in the Nauset/South Beach area, and therefore reduced the area where active management will be taken by the Service. We have modified chapter 4 in the final CCP/EIS as necessary to reflect the establishment of the MOU.

The EPA, which is charged with reviewing draft impact statements to determine compliance with the NEPA, had no objections to the plan and rated it as "LO-1" which stands for "Lack of Objections –Adequate."

Step-down Management Plans

(ID# 64)

Comment: The Town suggested that the FWS is relying too much on step-down plans and, as such, did not adequately describe the management alternatives, which prevents a full analysis of the cumulative impacts of management actions. They acknowledge that the Service has authority to employ step-down management planning, but does not want this process to avoid complying with the Administrative Procedure Act (APA) or NEPA. They contend the CCP/EIS does not provide the level of detail required to obtain public input and analyze issues to be addressed in the many purportedly forthcoming step-down plans. The Habitat Management Plan was specifically mentioned by the Town, as they do not believe this was adequately addressed in the draft CCP/EIS. The Town stated "merely appending a completed description of an agency action to a final EIS at some subsequent point in time, when it is not included in the draft for public review, is not permissible under NEPA." The town also believes that the compatibility determinations (CDs) are so limited in their scientific analysis that they fail NEPA's "hard look" standard, as they do not consider options that could accommodate reasonable uses or reasonable modifications of uses to preclude an incompatibility determination. The Fisheries Harvest Using Bottom Disturbing Gear finding was provided as an example.

Response: We do not agree with most of the assertions made by the town regarding how we have complied with the APA or NEPA in our step-down plans and compatibility determinations. We have met the requirements of

the APA by developing an EIS and giving notice to the public of its availability and public comment period in the Federal Register. We extended the public comment period twice at the request of local municipalities and the public, for an unprecedented 6-month comment period. We held four open houses where the public could come and discuss any aspect of the CCP with refuge staff. We responded to requests for meetings, including a televised question and answer period held by the Chatham Summer Residents Advisory Committee. And we held a public hearing attended by over 200 people, all of whom were given the opportunity to speak. Further, as required under APA, we have considered all of the comments that were submitted prior to issuing a final EIS. The public comment period also included input from the public on the findings of appropriateness and compatibility determinations in the draft CCP/EIS. These were themselves unsigned drafts published for the sole purpose of soliciting public input. Input was received from the public, including some scientific information we were not aware of, and as a direct result, we have made several changes in both our preferred alternative and the Findings of Appropriateness and compatibility determinations. Not only have we adequately complied with both APA and NEPA, but the process worked exactly as it was intended by Congress when they passed both Federal laws. This process will be complete when we have a signed Record of Decision and sign the findings of appropriateness and compatibility determinations.

The CCP is the umbrella NEPA document that presents an overview of all actions proposed or being undertaken on Monomoy NWR. We have identified very specific objectives and strategies in three alternatives, and we have described the impacts of these objectives and strategies in the draft and final EIS. This plan is sufficient NEPA compliance for most of the activities that we propose to undertake in the next 15 years on Monomoy NWR.

We agree that development of CCPs and step-down plans, new public use programs such as the waterfowl hunt program we propose in this plan, development of a new visitor contact station, and development of compatibility determinations for new proposed uses are all actions that are often considered major Federal actions and, are therefore' subject to NEPA. We also agree that we must apply NEPA to the development of step-down management plans. In fact, all refuge management activities and refuge actions require some level of NEPA compliance, and possibly compliance with other environmental laws and regulations. We review our proposed actions to determine their effects on the human environment (the natural and physical environment and the relationship of people with that environment). The anticipated significance of the impacts then dictates the NEPA process that will be followed (USFWS, NEPA Handbook for the National Wildlife Refuge System, 2014, <http://www.fws.gov/policy/NEPARefugesHandbook.pdf>, accessed February 2015).

Most daily activities on refuges qualify for categorical exclusion (CatEx) and do not require further NEPA analysis. CatEx's are classes of actions which do not individually or cumulatively have a significant effect on the human environment. We have a list of actions that fall under the CatEx provision. This is published in 516 DM 8. An Environmental Action Statement or a memo to the file outlining the reasons why the proposed action qualifies for exclusion from further NEPA documentation can be prepared but is not necessary to achieve compliance. Some step-down plans are for very simple management actions, and therefore fall under the CatEx provision. Step-down management plans that typically fall in the CatEx provision include Sign, Emergency Action, Safety, and Continuity of Operations Plans.

Other refuge actions may require either the preparation of an environmental assessment or an EIS, depending on whether the action *significantly* affects the quality of the human environment. We develop step-down management plans following the planning process guidance in 602 FW 1 and 602 FW 3. Rarely, if ever, does a step-down management plan trigger the development of an EIS. As stated above, we have provided a clear direction in our objectives and strategies, and the public comment period for the draft CCP/EIS satisfies the requirement for NEPA compliance. Only if we prepare a step-down management plan that deviates substantially from the objectives and strategies included in the CCP, or if we develop new proposals, would additional NEPA compliance be necessary, and then it would most often be in the form of an environmental assessment. We have provided detailed information in the alternatives in this plan and therefore conclude that we are in full compliance with NEPA on the development of an Inventory and Monitoring Plan (IMP), Habitat Management Plan (HMP), Visitor Services Plan (VSP), and Cultural Resources Plan. We had hoped to append the HMP to the final CCP/EIS, but it is not yet complete. The CCP indicates what we want to do and why, and analyzes the known or expected impacts. The HMP provides more details about how and when these actions will take place (prescriptions), and identifies triggers and helps prioritize the actions. The HMP, like many

other plans, tiers off of the alternatives, objectives, and strategies, and we do not believe that an additional level of analysis is required for us to achieve NEPA compliance.

While we believe our NEPA analysis is sufficient, we do agree that there are improvements in communication that we can make, and are happy to do so. First, we will be sure to contact affected agencies and State, Tribal, and the Town when initiating new actions subject to NEPA. We recognize the interests of the Town, its residents and our neighbors, local businesses and organizations in refuge operations. We will continue to communicate, and work to improve and increase our communication as necessary, to ensure that the public is fully aware of the plans we are preparing and has the opportunity to provide meaningful and timely feedback. We will make step-down management plans that do not require additional NEPA analysis, including the IMP, HMP and VSP, available for public review and comment, and will post our completed plans on our website so the public always has an opportunity to learn more about what we are doing and why. We may not always agree, but generally communication leads to better decision documents and better decisions, and we look forward to future dialogue with the Town and other stakeholders.

There will be some additional NEPA compliance conducted for specific proposed management actions. For example, we are required to officially open refuges to hunting through the Federal Register process, and this involves preparation of an environmental assessment with a formal public comment period. Should we decide to move forward with the installation of a wind turbine on Morris Island, the construction of a downtown visitor contact station, or propose to implement actions which are not consistent with the objectives and strategies in our proposed alternative, then we will undertake additional NEPA compliance in the form of an environmental assessment, each of which is subject to additional impact analysis and formal public review and comment.

We do not agree with the assertion of the Town that we had inadequate NEPA analysis for our compatibility determinations. Findings of appropriateness and/or compatibility determinations are completed for all proposed and on-going public uses on the refuge. Each determination is prepared for the actions that would take place under the preferred alternative, the impacts of which are analyzed in the NEPA document associated with the CCP. We have incorporated the best available scientific literature and information at the time of decision making. When available, we back up our findings in the justification section of the finding of appropriateness with a scientific literature review of pertinent information relating to the use. Often, this literature is also cited in the CCP itself. We believe that analysis of impacts in the CCP is sufficient.

The Town specifically mentioned the finding of appropriateness for “Fisheries Harvest Using Bottom Disturbing Gear.” We have addressed this comment in the fisheries section of this appendix and refer the reader to that response.

Decision-making/NEPA

(ID# 50)

Comment: One individual commented that the final decision by the Service’s “Regional Administrator” is a conflict of interest and that the final decision should be made by an independent scientific body.

Response: The Director of the Service has delegated authority to the Regional Director to sign CCP’s along with the accompanying environmental assessment or EIS. Our Regional Director oversees all of the responsibilities of the Service in the northeast region, not just the Refuge System, of which Monomoy NWR is a part. She must uphold Federal law and ensure this plan is consistent with Federal policy. She has the legal authority to make the final decision about this plan, and in fact is the best qualified person to do so. Independent scientific bodies do not have the knowledge to ensure our compliance with Federal laws, regulations, and policies, nor do they have the authority to make decisions about Federal lands.

Comment Process

(ID# 64, 65, 67, 68, 119, 153, 232)

Comment: There were several requests to extend the public comment period to allow for more time to assess the proposals contained in the draft CCP/EIS. We were also invited to speak before the Chatham Summer Residents Advisory Committee to answer questions. One commenter encouraged us to look for other formats that would allow more discussion and collaboration. One commenter did not agree that communication and collaboration was being demonstrated by limiting speakers to three minutes each at the public hearing. One commenter said that refuge staff, “view most of this as a waste of your time and an impediment to your view of your limitless powers.”

Response: Recognizing the concerns of many individuals and agencies regarding the complexity of the CCP/EIS and the timing of its release, we extended the comment period twice, for a total period of 6 months. This is the longest comment period that has ever been provided for a draft refuge comprehensive plan and enabled us to receive over 260 written and verbal comments as well as two petitions. We held four open houses and engaged in discussion that was often compelling and useful, and we found the comments provided at the public hearing to be quite informative as well. We did limit the amount of time that people could speak so that we could accommodate all who wished to speak at the public meeting. We also participated in a televised meeting of the Chatham Summer Residents Advisory Committee. We believe the public comment period effectively enabled us to learn both the concerns and the support from the public about the draft plan. We have in fact made many changes in our proposed alternative as a result of information and feedback we received.

Scientific Information—Quality of Data Used

(ID# 64, 73, 152, 164, 205, 212, 219, 229, 238, 241, 243, 249, 250, 252, 254, 262, 265, 291)

Comment: Many commenters, across several different categories (including fisheries management, biological management, and recreational activity management), felt the studies and documentation relied upon in the CCP for our preferred alternative were not sufficient because they did not constitute “science,” were not peer-reviewed, were methodologically of poor quality, did not fit the situation at Monomoy, or were only observational. Some commenters, including the Town, provided literature citations for our use. Others suggested we do scientific studies to determine real, rather than “perceived” effects. Many indicated there was no data and therefore we should not be making decisions to ban access without any data. One person found it appalling that we would look “at this kind of extensive plan” with “no objective evidence that this is going to improve the life of the migratory waterfowl.”

Response: We address comments made regarding lack of credible, sufficient, or peer-reviewed science within each category-specific response where appropriate. In most instances, commenters challenged the reports, studies, and references we are relying on, yet failed to offer any new subject matter for consideration. In instances where commenters have submitted additional resources, we have reviewed and incorporated them as appropriate. We acknowledge that in some instances, there is not sufficient scientific information to lead to a clear decision, and in some scenarios, we have erred on the side of caution to benefit our priority biological resources. Throughout the CCP, we made every attempt to conduct literature reviews, consult with subject matter experts, and use the most up-to-date information when considering our range of alternatives. Following the public review period, we conducted additional literature reviews and consultations in light of the comments we received in order to better articulate the scientific justification for some of our decisions.

We disagree with commenters questioning the scientific basis for our proposals, including those where we draw upon observations our trained biological staff have documented in the field. Our sound professional judgment is an appropriate component of our decision making process. We are intimately familiar with the behavior of refuge wildlife and the needs of these fauna throughout the course of the year. We understand the interdependencies between species and their habitats, and have observed the impact of human-caused disturbance. We apply lessons learned from the experiences of other land managers when appropriate. We use peer-reviewed science when available, but we are not required to only use peer-reviewed science as a basis for our proposals and decisions.

Basing our decisions on sound science is a hallmark of the FWS. In December 2000, Congress required Federal agencies to publish their own guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information that they disseminate to the public (44 U.S.C. 3502). The FWS guidelines, which were updated in June 2012, establish FWS policy and procedures for reviewing, substantiating, and correcting the quality of information it disseminates to the public. We have complied with this guidance and fully support our preferred alternative on the basis of field experience, sound professional judgment, and scientific literature.

Scientific Information—Shellfish and Fin fish

(ID# 136, 145, 238, 241, 249, 250, 254)

Comment: Several commenters indicated that the proposals regarding fishing in the draft CCP/EIS were not based on accurate information. One commenter said “the draft proposal issued by the Service is replete with scientific errors and inconsistencies and regrettably does very little to confirm that this government department possesses even the most rudimentary knowledge of shellfish, shellfish harvesting, shellfish gear identification and/or shellfish habitat management.” Many people acknowledged that we understand Monomoy’s

wildlife but indicated that we do not understand fishing and fishing techniques, including fish weirs, in Monomoy's waters.

Another person wrote that "For decades the wildlife and people have co-existed. There has been no substantial scientific documentation provided that proves these activities cannot co-exist." To the contrary, there is concrete science that does support that human activity helps birds, especially when they forage on the worms, crabs, and juvenile shellfish that get displaced through clamming using traditional methods."

Response: We acknowledge that our knowledge of fishing and fishing techniques in general is not as well developed as our knowledge of refuge wildlife and population and habitat management. We are very familiar with the non-mechanized gear used and harvesting techniques for softshell clams. The original research we conducted on the impact of hand harvest of softshell clams on migratory birds, which was published in peer reviewed journals, is part of the scientific information supporting our proposed alternative. We coordinated with the Town on shellfish research they conducted on the refuge. However, for most offshore fishing activities, particularly those in submerged waters, we had a lot to learn. As a result of conversations with fishermen from our open houses, public comments, and further discussion with the Town and the Division of Marine Resources, we received new information and used this to modify several fishing-related alternatives in the final CCP/EIS.

Cape Wind

(ID# 252, 264, 298)

Comment: Two commenters remarked that the Cape Wind project would likely kill many birds yet the project is supported by the FWS. They found it ironic that we would impose restrictions on how the refuge is used to protect birds while allowing this other activity that will kill birds.

Response: In chapter 1 of the final CCP/EIS, we have added the Cape Wind project to the section "Issues Outside the Scope of this Analysis" and we explain our rationale for doing so.

Additional Information/Corrections

(ID# 85, 224)

Comment: One individual pointed out that the Stage Harbor Entrance Relocation Project took place in 1965, not between 1944 and 1958, as the Draft CCP/EIS wrote; and the causeway was constructed across Stage Harbor in 1957 to close the Little Beach cut-through and re-establish land access to Monomoy. Another individual asked how we will address overall ecological health on a larger scale than just through the boundaries of the refuge.

Response: Thank you for the information on the Stage Harbor relocation. The text has been modified. On the question of larger scale ecological health, our jurisdiction is confined to the lands and waters within our boundaries. However, we exert an influence on a larger area through our many partnerships and through our education and interpretative activities. While we do not have a specific plan that addresses overall ecological health in a larger scale, we recognize that the health of the wildlife habitat on the refuge is dependent on the larger environment. Much of the scientific research that is conducted on Monomoy NWR is relevant to areas outside the refuge as well. We will continue to allow and support research, work with conservation partners, and stay actively informed about events and system changes outside the refuge.

11. Consultation and Coordination

Coordination with Town of Chatham

(ID# 59, 63, 64, 86, 91, 94, 95, 96, 98, 99, 101, 102, 106, 107, 108, 119, 124, 125, 126, 128, 129, 132, 133, 134, 136, 138, 139, 142, 146, 148, 150, 153, 155, 162, 164, 168, 176, 181, 182, 183, 184, 187, 194, 196, 197, 201, 203, 204, 207, 209, 213, 217, 220, 223, 237, 238, 241, 242, 243, 248, 252, 258, 259, 269, 266, 279, 285, 296, 299)

Comment: The Town and numerous other commenters expressed that the refuge should have done more to include the Town in the CCP planning process, and should do more to cooperate and coordinate efforts with the Town in writing and implementing the final CCP. One commenter said that addressing, explaining, and compromising would go a long way to creating a better relationship between Monomoy and the people who live here. Many commenters specifically indicated that the Town has indicated their willingness to work with

us and should be seen as a partner and not an adversary. Some indicated the Town has done an excellent job protecting shorebirds. Some suggested we talk with the Town if we think that the Town “could do better” managing lands and waters. Mass Audubon supported good management of the natural resources of the entire area to benefit coastal waterbirds and native wildlife and supported open cooperation with the Town and other stakeholders. One suggested we utilize the U.S. Department of the Interior’s Office of Collaborative Action and Dispute Resolution to engage in communication and conflict resolution with the Town. Another commenter indicated that we have not been communicating and collaborating for several years.

Response: In the development of CCPs, the refuge planning team always includes representatives of the state fish and wildlife agency and federally recognized Tribes. We provide opportunities for stakeholders to participate through the scoping process. In the development of this final CCP/EIS, we had additional coordination with the Town, particularly regarding research related to shellfishing on the refuge. For several years, we held monthly conference calls with the Town. Town officials met with the Deputy Director of the FWS in 2010 to discuss key CCP issues. We held additional briefings, with the last being in March 2013 before the release of the draft CCP in April 2014. We consulted further with the MA DFG as we prepared our final CCP/EIS, and they provided valuable comments that were based in part on a strong understanding of fisheries issues in Chatham. We also met with the Town prior to the release of the draft CCP/EIS and after the end of the public comment period, and we worked together to establish a management boundary on Nauset/South Beach (appendix L). The 2015 MOU between the Town and the Service will facilitate additional cooperation and consultation as we work together to protect wildlife resources while maintaining some public access. We look forward to continued communication and coordination with the Town, and have added the MA DMF to our planning team to ensure additional information sharing on marine issues of concern to the State and the Town. It is the responsibility of the planning team to develop the final CCP/EIS, which will go out for a final 30-day review before the final CCP is written and released to the public.

Preparing a comprehensive plan is just one of many management activities that have occurred at the refuge. We have a solid history of working cooperatively with the Town and other partners on natural resource management, contrary to what some may believe. We look forward to working with the Town and its citizens as we implement the CCP. Please see our response to the comment about the MOU in section 1 of this appendix for more discussion about cooperation between the Town and the Service.

Coordination with State and Town Enforcement Agencies

(ID# 64, 202, 243)

Comment: The Town and the MA DMF requested that the Service improve coordination with State and local enforcement agencies to ensure enforcement of natural resource regulations, such as those for fishing and shellfishing. One commenter requested no increased enforcement.

Response: Our Federal Wildlife Officers stationed at the refuge complex are committed to public safety and resource protection and have the legal responsibility to protect wildlife and visitor safety. We believe that improvements can always be made with respect to enhancing the flow of information and strengthening relationships between Federal, State, and Local enforcement agencies. We will work to improve our communication with other enforcement agencies that hold jurisdiction in and around Monomoy. This includes the Massachusetts Environmental Police, U.S. Coast Guard, NOAA, Chatham Police Department, Chatham Shellfish Constable and Harbormaster, and Cape Cod National Seashore. This coordination will help develop and maintain a continuity of enforcement. The sharing of information and resources between agencies are vital components of law enforcement that will greatly increase public safety and the protection of our natural resources.

12. Socioeconomic Impacts

Impacts on Local Economy

(ID# 63, 64, 81, 91, 127, 238, 241, 243, 248, 249, 259, 260, 261, 267, 268, 283, 296)

Comment: The Town and many individuals felt we did not adequately describe, consider, and analyze the impacts of the proposals in the draft CCP/EIS on the local and regional economy and culture. Many commenters felt that our proposal would have a significant negative socioeconomic impact. Common concerns raised by stakeholders included:

- The impact to the local fishing industry and community from restrictions on fin fishing and shellfishing in the open waters and submerged lands of the Declaration of Taking.
- The impact to Chatham residents and visitors from various recreational restrictions on public use at the refuge, particularly on Nauset/South Beach.
- The impact to local shellfishermen from the ban on wheeled carts in the Wilderness Area.
- The impact to Chatham residents and visitors from proposed changes to refuge infrastructure and operations (e.g., new downtown visitor center, shuttle service, additional directional and informational signage, increases in staffing, new docks, exploration of pedestrian/bike path on causeway).
- The impact to local tourism from the ban on kiteboarding.
- Our failure to include “fishing” in our description of Chatham as a “resort, retirement, and artistic community” could show that we do not understand that Chatham is a community rooted in marine and fisheries endeavors.

For example, we received a letter from one individual stating, “I vehemently oppose the draft CCP/EIS for Monomoy NWR as well as the unilateral Federal annexation of 717 acres of Chatham’s property on South Beach both of which menace, threaten, and imperil this community’s historical, cultural, and seafaring identity and furthermore could, if unwisely implemented, precipitate irreversible disaster and destruction laying waste to our vital maritime economy.” Similarly, a form letter sent in by many individuals says, “If implemented, these changes [proposed in the draft plan] would have a substantial adverse effect on Chatham and its citizens and would likely cause reverberating effects through all the Cape communities.”

Many commenters spoke specifically with concerns about impacts to the local economy from restrictions on fishing and shellfishing. For example, the Town stated, “The direct value of the Town’s commercial fish catch alone is approximately \$15 to \$20 million annually, and it has wide-reaching economic benefits as those dollars flow through the local and regional economies. The Cape Cod Commercial Fishermen’s Alliance recommends [using] an economic multiplier of 3.16 when assessing the true value of commercial fishing landings. This would equate to...\$45 to 60 million [annually].”

Commenters noted that shellfishermen have been working the low tidal and sub tidal areas for decades using traditional methods. It was a concern these areas could become under control of the Service, which can restrict access to the working areas at the most productive time of the year causing financial hardship to hard working, tax paying families.

Other commenters were concerned about how recreational restrictions could affect tourism and noted that Chatham supports a large number of hotels, restaurants, shops, and rental properties that depend on the influx of tourists for a significant portion of their business revenues.

Response: We are well aware of the importance of fishing both economically and culturally in Chatham, and agree that Chatham is more than a resort, retirement, or artistic community. While unfortunately we failed to include the word “fishing” in that sentence, the rest of the socioeconomic overview, starting on page 2-94 of the draft CCP/EIS, focused exclusively on fisheries.

We have determined that several types of fishing can continue to occur within refuge waters as a result of comments from the State, Town, and others, which will therefore reduce the level of economic impact that was discussed in our draft CCP/EIS once the final plan is implemented. We acknowledge that there remains the potential for some economic impact under our final plan but as discussed in our final CCP/EIS we believe these impacts will be relatively minor. Additionally, while we appreciate Chatham’s maritime history and the role that all shellfish, including the less rarely harvested shellfish, play in that history, we make decisions about the appropriateness and compatibility of uses based on the potential impacts of those activities to biological resources of concern. We can make decisions about uses of refuges and prohibit, restrict, and/or regulate activities even when there are economic impacts associated with our decisions, as long as these are explained in our planning documents.

The final CCP/EIS indicates that we will ban mussel harvesting, prohibit salting, and prohibit the use of wheeled carts. Horseshoe crab harvesting is currently prohibited within the refuge boundary so there is no additional impact to local fishermen. As previously discussed in Section 5 of this appendix, mussels are a highly important food resource for migratory birds. As noted by one commenter, mussel harvesting has not consistently taken place on the refuge and therefore the impact to mussel harvesters of a ban on mussel harvesting will likely be minimal.

There is very little history of razor clam harvesting on the refuge, therefore, the impact of not allowing salting as a harvest technique for razor clams is minimal. Lastly, based on our daily observations, we estimate that at this time, only about 20 percent of softshell clam harvesters use wheeled carts. We recognize that if other tidal flats are harvested, the use of carts might increase if the harvest areas are farther away from the water. Shellfish and harvesting equipment can be carried to and from a boat using other types of non-mechanical transport such as sleds. We acknowledge that there is likely to be a cost to obtain another mode of transportation. It is possible that some shellfishers will carry their harvest to their boats instead of using something other than a wheeled cart, and that could result in a minor decrease in harvest because more time is spent in transport instead. It is difficult, however, to provide a credible estimate for this scenario. Since fishing is a priority public use for national wildlife refuges, we will make every effort possible to accommodate fishing on the refuge when it does not hinder our compliance with Federal law to protect migratory birds and other federally listed species, preserve wilderness character, or protect cultural or historic resources.

We do not believe that our ban on kiteboarding will have much of a socio-economic impact, as the activity continues to be allowed off of Harding's Beach, a major launch site, and other Nantucket Sound beaches. This is discussed in more detail in Section 10 of this appendix.

Changes to refuge infrastructure and operations (e.g., new downtown visitor center, shuttle service, additional directional and informational signage, staffing increases, and exploration of pedestrian/bike path on causeway) are all proposed to assist the public with accessing and using Monomoy NWR. Maintaining and possibly increasing the current level of public access to the refuge and promoting compatible, wildlife-dependent public uses will minimize socio-economic impacts to Cape Cod residents and visitors. We will continue to work towards making the refuge easier to access while continuing our primary responsibility to protect wildlife, preserve wilderness character, and promote wildlife conservation.

13. Alternatives

Support for Alternative A

(ID# 81, 86, 87, 88, 89, 116, 117, 131, 144, 148, 154, 165, 166, 169, 170, 172, 173, 174, 175, 177, 178, 179, 185, 189, 190, 191, 199, 202, 210, 241, 248, 270, 291, 295)

Comment: Numerous individuals expressed support for alternative A because they would like to see the refuge continue to be managed as it is now. The majority of those in favor of alternative A specifically only supported continuing current refuge management, without the proposed changes to the refuge's boundary. There is a lot of support for the work we do on the refuge, but many commenters strongly feel that the Town and State are adequately managing South Beach and the waters adjacent to the existing refuge boundary very well. Many of these people value Monomoy for its beauty and its wildlife and in general have few concerns with the way we currently manage the refuge. However, there was considerable opposition to any expansion of our jurisdiction. Even though we indicated in the Draft EIS that our boundary interpretation was not an alternative, we believe the strong support for alternative A and the comments we received reflect a concerted opposition to any refuge expansion. Many commenters do not agree that the south part of South Beach should be part of the refuge, and they believe that the restrictions and additional regulations that the FWS would impose with increased jurisdiction are unnecessary and overly restrictive.

One commenter preferred alternative A, but hopes that the Service will compromise and come up with a plan that is a hybrid of alternatives A and B.

Response: We believe the reason so many people supported alternative A is the perception is that there would be no change in refuge boundaries under this alternative. If the boundaries did not change, there would be no changes in fisheries management, kiteboarding would not be prohibited, and visitor use on the southern part of Nauset/South Beach would not change.

We have proposed changes to alternative B, and it is likely that many of these modifications may be favorably received by some people who supported Alternative A.

Support for Alternative B

(ID# 71, 76, 77, 82, 83, 96, 118, 155, 158, 159, 160, 225, 227, 235, 244, 272, 276, 278)

Comment: The National Wildlife Refuge Association, Cape Cod and Islands Group of the Sierra Club, and several other groups and many individuals expressed their support for alternative B, or for certain actions proposed under alternative B. The reasons cited for support included: conservation of wildlife and habitats, protection of wilderness characteristics, increased visitor services, hunting opportunities, increased monitoring of refuge species and habitats especially related to the effects of climate change, creating a new detailed habitat management plan could only be beneficial, proposed invasive species control and clarification of the refuge boundaries. Incorporation of the public more into the activities of the refuge could help produce a pro-conservation attitude in the public if managed correctly, such as wildlife photography and fishing and further research.

Another commenter said that the increased plans for wildlife and habitat conservation are outstanding, but the plans for increased visitor participation including shuttle busses, more parking, more programs, and geocaching seem at odds with those very plans. Geocaching whether on Monomoy or Morris Island is foot intensive and can lead to damage of marsh and dune grasses. Another commenter said that alternative B should be refined to focus more on management activities that are essential to protecting the resources of the refuge and perhaps somewhat less on enhanced visitor services.

Response: In the final CCP/EIS, alternative B remains the Service-preferred alternative. The recent establishment of a management boundary on Nauset/South Beach where lands east of the boundary are managed by the Town, and the decision to not further regulate fish weirs and scallop harvest, reflect changes to alternative B. The revised alternative B still represents an extension and progression of all areas of refuge management including expanding management activities that are essential to protecting the resources of the refuge. While wildlife conservation is our highest priority, we believe we can appropriately manage visitor use in a balanced manner that minimizes impacts on wildlife and wilderness.

Opposition to Alternative B

(ID#: 55, 291)

Comment: The Cape Cod Marine Trades Association and one individual reject alternative B because it bans dogs and beach activities. They also interpreted alternative B as “banning rather than managing fishing and shellfishing” activities.” Another commenter from Europe is concerned about the proposals to limit parking, access, and number of visitors to the Monomoy NWR. If these changes restricting the way that the refuge can be accessed for fishing are put into place, I would have no choice but to take my holidays elsewhere.

Response: The Service has re-examined its position on dog walking and will continue to allow dogs on leash on Morris Island only from September 16 to April 30. This is consistent with Town regulations and is a time period when less wildlife is found on the Morris Island part of the refuge. We will not allow dogs on any other sections of the refuge at any time of the year.

Beach sports activities are determined to be inappropriate because they can disturb wildlife. Beach sports include, but are not limited to, volleyball, football, soccer, Frisbee, baseball, surfing, and skim boarding. Kite-related activities include kite flying, kite surfing, and kite boarding. These uses do not contribute to quality wildlife-dependent recreational uses nor do they support the purpose for which the refuge was established. When conducted in designated wilderness, these activities can detract from wilderness character. Beach activities that are allowed include beachcombing, and swimming and sunbathing.

Alternative B does not ban fishing and shellfishing, instead we allow and manage these activities. Alternative B allows refuge visitors to harvest subterranean shellfish (softshell clams, quahogs, razor clams and sea clams) using non-mechanized hand raking tools only and no artificial means of extraction above MLW (such as salt and chlorine), otherwise in accordance with Town Shellfishing Rules and Regulations or additional refuge regulations.

Since fishing is a priority use, every effort will be made to accommodate fishing when it does not hinder our compliance with Federal law to protect migratory birds and other listed species, preserve wilderness character, or protect cultural or historic resources. Fishing now includes fin fishing, lobster, crab, and whelk pot harvesting, fish weirs, and scallops in the open waters lying above the submerged lands within the Declaration of Taking. There are very few changes that would restrict the way that the refuge can be accessed for fishing. We will continue to allow fin fishing from all refuge lands from ½ hour before sunrise to ½ hour after sunset and allow anglers to fish on Morris Island 24 hours per day in accordance with all Federal and State fishing regulations. We will also allow freshwater fishing in the ponds on South Monomoy during daylight hours.

Support for Alternative C
(ID# 110, 155)

Comment: One individual wrote in support of alternative C, saying that they liked its main philosophy of leaving the area alone. Mass Audubon indicated that “an emphasis on non-motorized access to the Monomoy Wilderness... may be preferable to protect resources.”

Response: Alternative C proposes less intensive management, with a theme of allowing natural succession of habitats to progress, to the extent that the refuge purposes and goals are not compromised. While this is a viable alternative, it is not our preferred alternative because we believe in more active management of habitats for wildlife, more active population management, and we wish to encourage respectful and compatible use of the refuge by the public.

Opposition to Alternative C
(ID# 55, 254, 291)

Comment: The Cape Cod Marine Trades Association and one individual felt that alternative C should be eliminated from consideration because it bans beach activities and motorized boat use. They write that banning these uses “provides no value to the continued preservation of resources within the boundaries of the refuge, particularly where so many visitors accessing the refuge by motorized vessel are participating in appropriate and compatible recreational uses and have done so without species impact for more than one hundred years. These low- to no-impact activities are banned along with the traditional access, for no supported reason. The only endangered species, the piping plover, has co-existed with boating and recreational activity on beaches for centuries and thrives in the current refuge with this respectful coexistence.” Another commenter from Europe is concerned about the proposals to limit parking, access, and number of visitors to the Monomoy NWR. He stated, “If these changes restricting the way that the refuge can be accessed for fishing are put into place, I would have no choice but to take my holidays elsewhere.”

Response: We are required under NEPA to evaluate a reasonable range of alternatives and we believe the three alternatives evaluated in the final CCP/EIS meet that requirement. In our opinion, alternative C is a reasonable alternative to consider and evaluate fully, although we do not propose it as the Service-preferred alternative. We expected that there would be opposition to alternative C, and believe a lot of that opposition is due to the motorboat restrictions. Because alternative C gives primary consideration to wildlife and to wilderness character protection and public safety, alternative C proposes to prohibit motorized boat landings along the Monomoy Wilderness shoreline, including the tidal flats and beaches. Refuge visitors would be able to access the refuge by kayak, canoes, rowed boats, paddleboards, and sail boats, or through our concession operating a motorized ferry access system from the refuge headquarters. The proposed concessionaire would be encouraged to manage guide services that facilitate the six priority refuge uses in order to promote a wilderness experience.

As with alternatives A and B, beach sports activities are determined to be inappropriate under alternative C as well because of disturbance to wildlife. These uses do not contribute to quality wildlife-dependent recreational uses nor do they support the purpose for which the refuge was established. When conducted in designated wilderness, these activities detract from the wilderness character.

We do not agree with the Cape Cod Marine Trades Association that the plover “thrives in the refuge with this respectful co-existence.” The piping plover has co-existed with boating and recreational activity, however, because we have closed nesting areas to public use and used exclosures to protect the nest from predators and

human activity. Plovers have certainly not thrived on the refuge. They have done well, but we have not come close to the potential estimated capacity of 94 nesting pairs. Disturbance from people is just one cause of lower productivity but it is one that we can more easily manage.

Proposed New Alternative
(ID# 64, 90, 130, 205)

Comment: One individual disagreed with our interpretation of the definition of “no action” alternative. They wrote, “This Conservation Plan should propose a true ‘No Action’ alternative as alternative D. Alternative D would be titled ‘No Action’ and mean no active management by the Department of Interior. This alternative should be utilized as the baseline alternative from which other alternatives are compared.” Another suggestion for an alternative D would be one that allows the removal of seals from the refuge.

Another individual wrote, “the analysis [in the draft CCP/EIS] is incomplete because it does not consider the reasonable alternative that the Service not pursue authority to regulate the disputed land and waters, but rather to leave the regulation as it now stands...” Specifically, the Town contends that changing the refuge’s eastern boundary is a “major Federal action” subject to NEPA. They feel that including this boundary interpretation in all alternatives fails to follow NEPA requirements. They feel that this boundary interpretation will have a significant impact on the human environment, thus we should have analyzed at least one alternative that did not include this boundary interpretation. In their opinion this “is precisely the type of action for which environmental review and public comment are most critical.”

Response: Alternative A satisfies the NEPA requirement of a “no-action” alternative, which we define as continuing the status quo, or continuing current management. It describes our existing management priorities, activities, and available resources, and serves as a baseline for comparing and contrasting alternatives B and C.

We have a reasonable range of alternatives in this final CCP/EIS, and do not believe there is any need for an additional alternative because of an administratively determined boundary. The Declaration of Taking established a fixed boundary on the western side of the Monomoy Islands. The eastern refuge boundary is defined as MLW and is a shifting boundary. As stated in Section 10 of this appendix, the EPA, which has the responsibility of reviewing EISs for adequacy, found that our draft EIS achieves the requirements for an EIS.

Chapter 4 of the final CCP/EIS contains a detailed assessment of the impact of all the alternatives. Alternative A serves to adequately provide a comparison of impacts from the other two alternatives, and therefore fulfills NEPA.

Lastly, we cannot propose an alternative which violates Federal law, so adding one that would remove the gray seals from Federal protection is not appropriate. Individuals who believe that seals should be removed from protection are free to petition Congress or the National Marine Fisheries Service to try to achieve that goal.

List of Commenters

Table K.2. List of Commenters with Identification Number*

ID Number	Name	Organization (if applicable)
46	Jean Dunoyer	
47	John Taylor	
48	Paul Jennings	
50	John Garey	
51	Domenic Santaro	
52	P.V. Gyska	
53	Keith Hutchings	
54	Brian Harrington	

ID Number	Name	Organization (if applicable)
55	Rupert McArt	
57	Joanne Hinesley	
58	William Bystrom	
59	Mike Page	
60	John Beckley	
61	Frank Messina	
62	Kevin McNally	
63	Florence Seldin	Chatham Selectman
64	Board of Selectmen	Town of Chatham
65	Sarah K. Peake	State Representative
67	Martha Stone	Town of Chatham South Coast Harbor Plan Committee
68	Joel Rottner	Chatham Summer Residents Advisory Committee
69	Sean Clark	
70	Dylan Dobbyn	
71	David Langan	
72	Hoyt and Deborah Ecker	Massachusetts Committee for the Preservation of Horseshoe Crabs
73	Alana J. Donohoe	
74	Kerri Tarpey	
75	Jennifer Hicks	
76	Lewis Stringer	
77	Ryan Bates	
78	Carol E. Garey	
79	James Botsolis	
80	Pamela E. Wise	
81	Douglas E. Blackwell	
82	Brenda J. Boleyn	Horseshoe Crab Conservation Association
83	David MacAdam	
85	Douglas Doe	
86	John A. Bustard	
87	Brian Killen	
88	Tyler P. Hoffman	
90	Beverly M. Carney	
91	Barry Greco	
94	Paul L. Milone	Weymouth Harbormaster/Shellfish Constable
95	Board of Selectmen	Town of Orleans

List of Commenters

ID Number	Name	Organization (if applicable)
96	David Houghton	National Wildlife Refuge Association
97	Ian Hoffman-Terry	
98	Board of Selectmen	Town of Wellfleet
99	Paul Faugere	
100	Barbara and Earl Lewis	
101	Board of Selectmen	Town of Eastham
102	Fred and Dianne Connelly	
103	Joseph M. Samela, Jr.	
104	Hugh G. Moulton	
106	Board of Selectmen	Town of Mashpee
107	Board of Selectmen	Town of Truro
108	Colette B. Traylor	
109	Nancy Monaghan	
110	Jean Public	
111	Joshua Etsten	
112	Marie Sherman	
113	Joyce I. Keay	
114	J. Thaddeus Eldredge	
115	Lauren LaFortune	
116	Dillon Murphy	
117	Jeff Cocco	
118	Billie Bates	
119	Stephen Buckley	
120	Liam Dalton	
121	Edward C. and Patricia A. Eldridge	
122	Rachel Nickerson Luna	
123	Bradford Cranston	
124	Taylor Armour	
125	Donna Wald	
126	Melinda Richards	
127	Kate Murdoch	
128	Jean Vaczek	
129	Joseph Vaczek	
130	Michael Waters	

ID Number	Name	Organization (if applicable)
131	Michael C. Archer	
132	Suzanna Nickerson	
133	Diane C. Murphy	Woods Hole Sea Grant and Cape Cod Cooperative Extension
134	Michael Westgate	Town of Chatham South Coastal Harbor Management Plan
135	Tom Kearney	
136	Suzanne Phillips	
137	Jeff Marshall	
138	Andrew Meincke, Jr.	
139	Alison Barabe	
140	Russell Kingman	
141	Shannon Eldredge	
142	Carole M. Somol	
143	Luke Hinkle	
144	Christopher Lage	
145	Ernest R. Eldredge	Monomoy Trap Company, Inc
146	Darrel Coddington	
147	Eric Fernandez	
148	Chad Coddington	
149	Jim Canniff	
150	Barbara Coddington	
151	Peter van Amson	
152	Owen Nichols	Center for Coastal Studies
153	Edward J. DeWitt	The Association to Preserve Cape Cod
154	Owen Nichols	
155	John Clarke	Mass Audubon
156	Susan Shepherd	
157	Robert F. Denn	
158	Joanna W. Stevens	
159	Aimee J. Eckman	
160	William Coleman	
161	Joshua Lamborghini	
162	Michael J. Jacobs	
164	David C. Likos	
165	Gary Brooke	

List of Commenters

ID Number	Name	Organization (if applicable)
166	Adele Saletta	
167	Brian Sampson	
168	Donald R. Knepper	
169	Jonathan Buck	
170	Michael Conan W. French	
171	Greg Maier	
172	Justin Dalby	
173	John Arsenault	
174	Paul Trojano	
175	John Moretti	
176	Brett Tolley	Northwest Atlantic Marine Alliance
177	Brian Davies	
178	Kevin Carroll	
179	Richard Miller	
180	H. Curtis Spalding	U.S. Environmental Protection Agency
181	Marie Williams	
182	Stephen W. Williams	
183	Fred and Cora Greco	
184	Cynthia and Louis Petti	
185	Katherine Carscallen	
186	Jeremy Reger	
187	Ian D. Ford	
188	Jeanne Branson	
189	Charlene Pearl	
190	Amy McHugh	
191	Erica Mitchell	
192	Kevin Proescholdt	Wilderness Watch
194	Kenneth McIntire	
195	Judith Pennington-Watts	
196	Gloria M. Freeman	
197	Kathleen Connelly	
198	Scott LaPreste	Ipswich Shellfish Constable
199	Brian Woodward	
201	George Olmsted	

ID Number	Name	Organization (if applicable)
202	Darren Saletta	
203	Brenda Palumbo	
204	Deborah Hayward Norris	
205	Desiree Moyer	
206	Matt Dellelo	
207	Emily Greco	
208	Carol F. and Thomas B. Stoel, Jr.	
209	Jim and Lynn Estabrook	
210	Mary and Fred Taubert	
211	John Grundstrom	Rowley Shellfish Commissioner
212	Eric Gustafson	Funseekers.org
213	Board of Selectmen	Town of Nantucket
214	Steve Cooper	
216	Frank Campbell	
217	Sarah B. Griscom	
218	Charles Bonanno	
219	Steven Kassakian	
220	Board of Selectmen	Town of Yarmouth
223	Board of Selectmen	Town of Harwich
224	Jennifer Daoulas	
225	Sharon M. Steriti	
226	Coleen Boisvert	
227	Robert P. Cook	
228	Ellen M. Freda	
229	Marjorie G. Blackwell	Quitneset Associates, Inc.
230	Ron LaBonte	
231	Erin Wood	
232	John L. Rafuse	
233	John Richards	Chatham Shellfish Co.
234	David Clapp	
235	Lee Stephanie Roscoe	
236	Peter F. Readel	
237	Board of Selectman	Town of Brewster
238	Jamie Bassett	

List of Commenters

ID Number	Name	Organization (if applicable)
239	Citizen Petition A	
240	Citizen Petition B (moveon.org)	
241	Seth Taylor	Chatham Selectman
242	John Pappalardo	Cape Cod Commercial Fishermen's Alliance
243	Mary Griffin, Paul Diodati, and Wayne MacCallum	Massachusetts Department of Fish and Game
244	David Dow	Cape Cod Group of the Massachusetts Chapter of the Sierra Club
245	Seth Schofield	Massachusetts Office of the Attorney General
246	Shareen Davis	
247	Meri Ratzel	
248	Timothy Roper	Chatham Selectman
249	Sean Summers	Chatham Selectman
250	Michael Corrigan	Quitneset Associates, Inc.
251	Everett Eldredge	
252	Jeff Dykens	Chatham Selectman
253	Richard Hosmer	
254	Cliff Berner	Cape Cod Marine Trades Association
255	Ted Keon	Chatham Department of Coastal Resources
256	William Barabe	
257	Robert Duncanson	Chatham Department of Health & Environment
258	Norman and Carol Pacun	
259	Wendy Homer	
260	Bill Giokas	
261	Barry D. Homer, Jr.	
262	Renee Gagne	Chatham Shellfish Constable
263	Jeff Lang	
264	Virginia T. Nickerson	
265	John Raye	
266	Ron Bergstrom	Former Chatham Selectman
267	Theodore J. Ligenza	
268	Jim Woods	
269	John Hallgren	
270	Tim Dinge	
271	Jeffrey Hahner	

ID Number	Name	Organization (if applicable)
272	Thomas W. French	Massachusetts Division of Fisheries and Wildlife
273	Cheryl Grady	
274	Chris Lamborghini	
275	Alyson and Marty Taubert	
276	David King	
278	Gabriela Fleury	
279	Roz Coleman	
280	Andrew Dunne III	
281	Bill Cullinane	
282	Jennifer A. Douglas	
283	M. Donna Weir	
284	Thomas J. Hartnett	
285	Francis R. Michonski	
286	George and Lori Meaney	
287	John E. Lynch	
288	Bob Champlin	
289	Yana Orlen	
290	David Kelley	
291	Todd Walker	Cape Cod Marine Trades Association/Nauset Marine, Inc
292	Amelia Griese	
293	Kent Bonney	
294	Jim and Judy Goddard	
295	Susan Jones	
296	Frederick T. Miller	
297	Daniel A. Sylvar	
298	John F. Huether	
299	Martha Meier	
300	Christine Odrages	
301	Board of Selectmen	Town of Bourne

**Note: The ID number was assigned automatically by our database. Numbering starts at 46. Any other missing numbers represent letters that were removed from the database because they were either duplicates, or did not contain comments but rather information such as request to be taken off mailing list or address changes.*

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