



# Town of Chatham

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Ms. Libby Herland, Project Leader  
Eastern Massachusetts National Wildlife Refuge Complex  
73 Weir Hill Road  
Sudbury, MA 01776

October 7, 2014

RE: Monomoy NWR Draft CCP/EIS

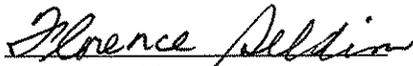
Dear Ms. Herland,

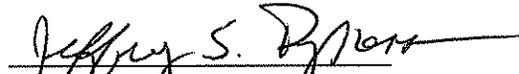
On behalf of the Town of Chatham we are pleased to submit our comments on the Monomoy National Wildlife Refuge Draft Comprehensive Conservation Plan and Environmental Impact Statement (CCP/EIS).

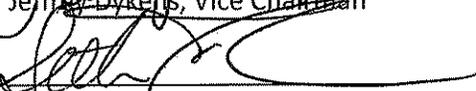
Many of the proposals contained in the CCP/EIS would have a profound impact on our community. Due to the seriousness of these proposals, the Town has devoted significant amounts of time and resources evaluating each of the proposed alternative management scenarios for the refuge. These detailed comments are intended to provide you with a greater appreciation of the potential impacts on our community as well as greater understanding and awareness of the ways in which Chatham, partnering with FWS and the Commonwealth, has been a careful steward of the Refuge and the Wilderness and the waters that surround them.

We hope you find these comments useful and look forward to working with you as the Fish and Wildlife Service develops a new management program for the refuge.

Sincerely,

  
Florence Seldin, Chairman

  
Jeffrey S. Dykens, Vice Chairman

  
Seth Taylor, Clerk

  
Timothy L. Roper

  
Sean O. Summers



**TOWN OF CHATHAM**  
COMMENTS ON  
MONOMOY NATIONAL WILDLIFE REFUGE  
DRAFT COMPREHENSIVE CONSERVATION PLAN &  
ENVIRONMENTAL IMPACT STATEMENT

SUBMITTED BY:  
BOARD OF SELECTMEN  
TOWN OF CHATHAM  
OCTOBER 10, 2014

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- Joint Petition for Supplemental Decree, *U.S. v. Maine*
- Town of Chatham Shellfish Rules and Regulations
- Town of Chatham Beach and Parks Rules and Regulations

## I. Introduction

On behalf of the citizens of the Town of Chatham, Massachusetts, the Chatham Board of Selectmen is pleased to submit our official comments on the Monomoy National Wildlife Refuge Draft Comprehensive Conservation Plan and Environmental Impact Statement (CCP/EIS) prepared by the U.S. Fish and Wildlife Service (FWS), dated April 10, 2014. These comments are supplemental to those provided to the FWS during the June 17, 2014 public hearing held in Chatham (See Appendix B).<sup>i</sup> We also want to again express our appreciation to the FWS for extending the public comment period to October 10, 2014. This extension has provided the Town of Chatham (Town) with the opportunity to engage all relevant stakeholders and develop these comprehensive comments.

The Town has greatly enjoyed the over 70 year partnership with the FWS concerning the conservation and management of the Monomoy National Wildlife Refuge (Monomoy NWR/Refuge) and the natural resources both within and surrounding the Refuge. This partnership and collaboration has allowed our citizens to enjoy traditional and historical recreational and fisheries activities in the area. The Refuge is one of our most prized treasures and attracts visitors from all over the globe. The FWS has put significant effort into the development of the CCP/EIS, and we commend them for their work.

The Town concurs with several of the recommendations contained in Service-preferred Alternative B, but we take strong exception to several significant proposals common throughout all CCP/EIS alternatives. As will be noted further in these comments, we believe the CCP/EIS falls far short in fully analyzing the economic and employment implications of the proposed actions on our community. Additionally, all three alternatives described in the CCP/EIS, including the FWS-preferred Alternative B, seek to eliminate, minimize or restrict many of the maritime, fisheries, and historic uses of Monomoy and its surrounding waters; activities that have been part of our community fabric for centuries.

We understand and appreciate the legal mandate under which the FWS is operating, specifically the requirement under the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57) to develop a CCP/EIS.<sup>ii</sup> Unfortunately, none of the three alternatives included in the CCP/EIS are acceptable to the Town. In these comments, we will detail the reasons for both our support of and opposition to the proposed measures contained in all alternatives. We comment on areas where FWS NEPA analysis appears deficient, and we highlight a number of scientific concerns in Appendix D that should be clarified in the final CCP/EIS. We are hopeful we can build on our history of collaboration as we move forward with the FWS to work through these issues and arrive at mutually beneficial solutions. As a community, however, our first priority is ensuring that our maritime heritage, traditional fisheries, and historical uses within the Monomoy Refuge are maintained to the maximum extent possible.

The Town is very proud that its heritage is directly connected to the sea and all its bounties. Since the 1700s, our community has been rooted in maritime and fisheries affairs, a tradition that continues today as an integral part of our local economy and character. We are also proud of our enduring, demonstrated commitment to the stewardship and sustainable use of all our natural resources, including those outside refuge boundaries. One example of the Town's environmental stewardship can be found in our unprecedented, recent efforts to providing wastewater solutions; we understand better than most the importance of clean water to healthy beaches, ponds, and marine ecosystems. The Town spends a substantial amount of time, energy, and money administering and regulating the uses of these resources to ensure their existence for the enjoyment and use of future generations. Like the FWS, we strive to achieve the appropriate balance between wise use and preservation. To best summarize this sentiment, we need look no further than the FWS sign at the Monomoy NWR Headquarters:

*For centuries people have travelled to experience Cape Cod's scenic beaches, waterways, history, and unique wildlife. Many of the refuge's wildlife species are of conservation concern due to past vulnerability to human development and disturbance. **Today we strive to balance competing use of Monomoy Wilderness for people and for wildlife, while maintaining wilderness character.** At Monomoy, as demands for access increase by humans and wildlife, it's imperative to instill stewardship and land ethic practices, in order to assist in species recovery a stewardship imperative.*

## II. History of Monomoy Island, Chatham Massachusetts

*"The sea is master here—a tyrant, even—and no people better than ours, who have gone down to the sea in ships so often in so many generations, understand the subtle saying.... 'We conquer nature only as we obey her.' Chatham occupies the whole ragged "elbow" of the Cape...its entire coast line is broken by indentations caused by the encroachments of old ocean--bays, creeks, harbors, coves, inlets—every kind and order in fact of seashore formation that can make irregular and tortuous the line that marks the meeting of the land and sea."*

*- E. G. Perry, 1898*

For centuries, Monomoy has occupied the identity and mythology of Chatham. Over 400 years ago, long before European colonization, Native American tribes, including the Nausets and the Monomoyicks, lived in the area known then as Monomoit. The Monomoyicks sustained themselves with hunting, fishing, and farms. In 1606, Samuel de Champlain, the first European known to have explored the area, encountered the Monomoyicks, a tribe of about 500-600 members. The topography of Monomoy he mapped and described is still recognizable, as are the varieties of plants, fish, shellfish, and game birds.

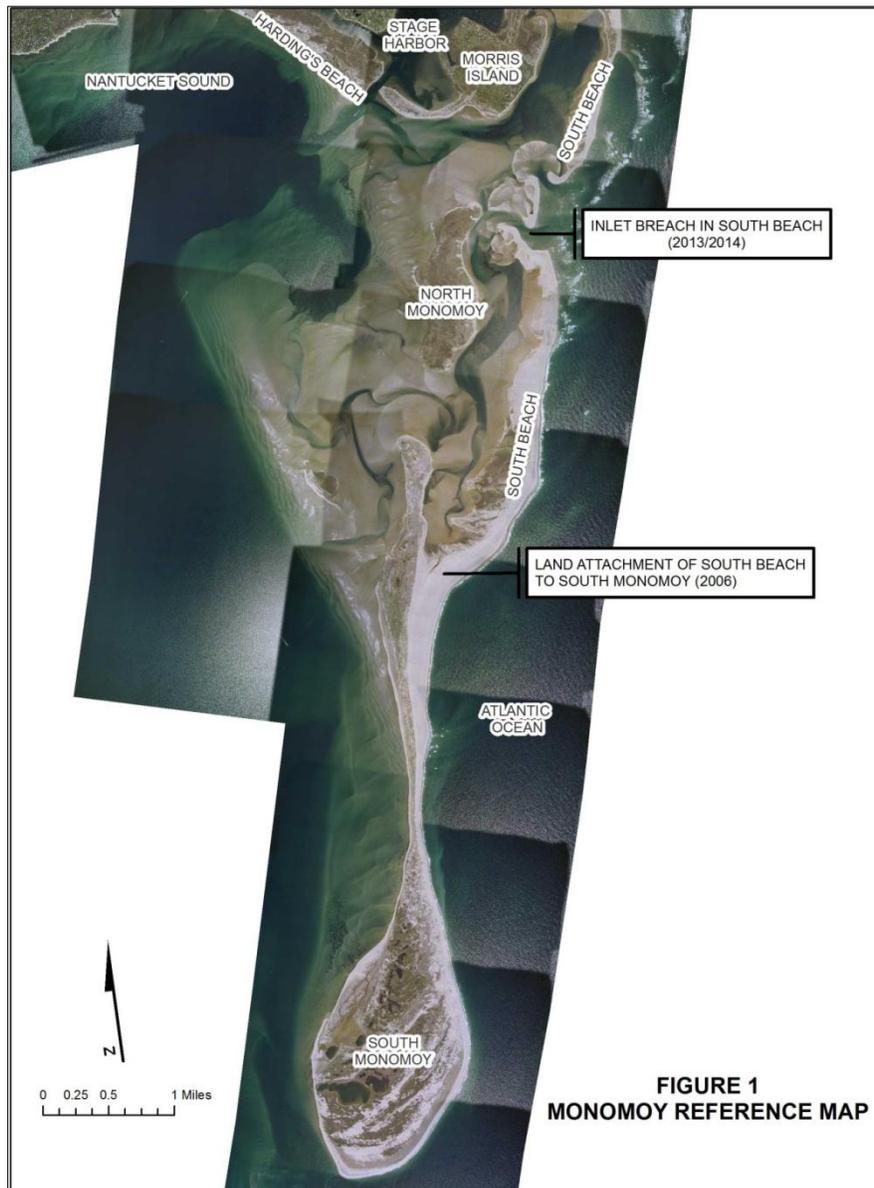
The arrival of English colonists to the area began in 1656 when William Nickerson, an English emigrant working as a land surveyor and weaver, made the first land purchase from Sachem Mattaquason of the Monomoyicks. By the 1690s, 17 families lived in Chatham; that number slowly grew to 50 families in the early 1700s while the native population dwindled to approximately 50-70 individuals.

Despite its remoteness, Monomoy, the eight mile-long spit of sand off Chatham, was inhabited by colonists as early as 1710. During the early 1800s, a deep natural harbor at Monomoy's inner shore, known as the Powder Hole, attracted a sizeable fishing settlement. In its prime, Whitewash Village housed about 200 residents, a tavern inn called Monomoit House, and Public School #13, which boasted 16 students at its peak. Cod and mackerel brought into the Monomoy port were dried and packed for markets in Boston and New York. Lobsters were also plentiful, providing both food and income for the villagers, who peddled them to mainlanders at two cents apiece. The village was abandoned after its harbor was washed away by a hurricane around 1860. Today, the only reminder of Monomoy's habitation is the Monomoy Point Light, which guided ships from 1828 to 1923. The wooden light-keepers quarters, the cast iron light tower, and the brick generator house stand alone on the now desolate point of the South Island.

Once owned by private property owners in Chatham, Monomoy fell to the Federal government in 1944 through a Declaration of Taking (DOT) by the United States Secretary of the Interior.<sup>iii</sup> The Monomoy National Wildlife Refuge was established on February 10, 1944 under the authority of the Migratory Bird Conservation Act<sup>iv</sup> for the protection of migratory birds and their habitat (See Figure 1 below). In 1970,

almost all of the Refuge was designated as wilderness by Congress<sup>v</sup> in accordance with the Wilderness Act of 1964.<sup>vi</sup>

For hundreds of years, Chatham residents and visitors alike have enjoyed the natural beauty of Monomoy Island. The island has provided great opportunities for hunting, fishing, swimming, sunbathing, beach combing, and observing wildlife and nature at its best. Monomoy Island and the activities it supports have remained at the center of Chatham's identity. Ironically, through the centuries, the only constant is that the Monomoy Island environment and the surrounding beaches and sands are ever changing. From new scallop and shellfish beds, to grey seals, to new inlets and breaks, to white sharks, coyotes and other predators, it is this constant change that presents the core challenges of developing a new CCP/EIS that respects and encourages Monomoy's traditional and historic uses while protecting and preserving the wilderness character envisioned by the 1970 statute.



### III. Significant Issues Common to All Alternatives

#### a. Eastern Boundary



Chatham's South Beach and accreted land connection to Monomoy NWR (looking north).

Monomoy NWR was established on June 1, 1944 through a Declaration of Taking<sup>vii</sup> by the Secretary of Interior (See Appendix B). The taking of land extended from the mean low water line on the eastern shores of the Refuge westward to the mean low water line of the land within Nantucket Sound. While the DOT boundary is fixed by specific coordinates on the north, west, and south sides, the boundary on the east side is considered “ambulatory” due to constantly shifting sands; the Eastern boundary moves and changes over time as the mean low water line moves with the constantly moving sands.

The 1944 Declaration defined the Eastern boundary of Monomoy NWR as the mean low water line of the Atlantic Ocean; for decades there was no dispute over this boundary as—regardless of the shifting sands—Monomoy still remained an island.<sup>viii</sup> In Fall 2006, a land connection between Nauset/South Beach and the north tip of South Monomoy Island formed, connecting the Refuge with South Beach, owned and managed by the Town. Due to its ambulatory nature as well as the significant changes in landscape, the Eastern boundary has now become highly controversial.

#### FWS Position

In the CCP/EIS, the FWS contends that as a result of this land connection between Nauset/South Beach and Monomoy Island, the Refuge boundary was expanded in 2013 to include an additional 717 acres of land that is presently owned and managed by the Town and the National Park Service (NPS). The FWS claim in this regard is that it now has jurisdiction over a substantial portion of South Beach, specifically from the former island to the break formed in 2013. This claim is rooted in the common law doctrine of “accretion”. This doctrine sets forth rules that address the ever-changing boundaries of properties abutting the water. As most recently stated by the Massachusetts Supreme Judicial Court in 2013:

[t]here is well-settled authority for the proposition that littoral (shoreline) boundaries are not fixed, because natural processes of accretion or erosion change them. The

line of ownership [of littoral property] follows the changing water line. Accretions to land bounding on a river or the sea belong to the owners of the adjoining land.<sup>ix</sup>

In addressing the rationale for the doctrine of accretion, the Court stated further that:

[t]he considerations underlying this doctrine include: (1) the interest in preserving the water-abutting nature of littoral property; (2) the promotion of stability in title and ownership of property as it concerns newly accreted property; and (3) the equitable principle that a property owner who enjoys the benefit of an increase in property when waterlines shift seaward ought also to bear the burden of a decrease in property when waterlines shift landward.<sup>x</sup>

All three Alternatives presented in the CCP/EIS include this expanded taking as part of the new Eastern Refuge boundary and all three propose to manage the area as wilderness. The CPP/EIS correctly identifies this as a significant and divisive issue.

#### Town of Chatham Position

The Town maintains the FWS has no legal right to Nauset/South Beach and strongly opposes the FWS claim that this area has now become part of the Refuge to be managed as wilderness.

First, the Town does not believe the FWS is entitled to the unilateral application of the doctrine of accretion. Our position is based upon the fact that Monomoy did not accrete any sand at all; rather it simply stood still while Nauset/South Beach accreted southwesterly until the land masses joined. Under the *Hartigan* and *Lorusso* cases discussed herein, as well as numerous other cases, the doctrine of accretion has been applied to annex additional land only in the instance that tidal shifts result in the actual addition of land; it has not and cannot be applied to annex other land where it has simply *stood still*. For example, in *Siesta Properties v. Hart*, the Florida District Court of Appeal stated: "in order for an owner of land bounding on water to claim additions to such land as accretion, such accretion must begin upon the land of such riparian owner and not upon some other place from which it may eventually extend until it reaches claimants land" 122 So.2d 218 (1960).

While claiming the benefits from the application of the doctrine of accretion, the FWS position conveniently ignores the Town's rights to apply that same doctrine to its own property. The Town's property of South Beach has been accreting steadily for years and the Town is entitled to the application of that same doctrine. The Town's rights to South Beach derive from the deed of Joshua Nickerson in 1951 (See Appendix B).<sup>xi</sup> Like the Eastern Boundary, the property deeded by Nickerson to the Town is also expressly bounded by water, both Chatham Harbor and the Atlantic Ocean. As the land accreted sand and grew to the south and west, the parcel grew, and as such, so did the length of its littoral boundary. Once South Beach grew into Monomoy Island, a major boundary dispute arose; the Refuge lost a portion of its frontage on the Atlantic Ocean, and the Town lost a significant portion of its ocean frontage littoral boundary along the portion of South Beach that merged with Monomoy Island.

Furthermore, although we disagree that this is the case, 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. This issue was discussed by the Massachusetts Supreme Judicial Court in 1990 in the case of *Lorusso v. Acapset Improvement Association, Inc.*, 408 Mass. 772 (1990):

The rule that the owner of littoral land gains ownership of accretions to his land is subject to, and modified by, the further rule that, when two or more littoral owners have rights to simultaneously formed accretions, the rights of the owners in the accretions are to be determined by the doctrine of equitable division. See *Burke v. Commonwealth*, 283 Mass. 63, 69 (1933); *Allen v. Wood*, 256 Mass. 343, 350 (1926). We said in *Allen v. Wood*, supra: "The object of apportioning accretions is that they shall be so apportioned as to do justice to each owner, in the absence of a positive prescribed rule and of direct judicial decision to guide, and their division on a non-navigable river frontage is so made as to give each relatively the same proportion in his ownership of the new river line that he had in the old." Stated in another way, the object of apportioning simultaneous accretions among lots of littoral land is to give each owner the same proportion of the new waterfront that he would have had if the accretions had never occurred. This is critical to our decision.

The principle of equitable division is time-honored; in *Trustees of Hopkins Academy v. Dickinson*, 63 Mass. 544 (1852), the Massachusetts Supreme Judicial Court stated:

The rule is equitable, and as certain as the proverbially variable nature of the subject-matter will admit; and, in adapting it to the varying circumstances of different cases, a steady regard must be had to the great principle of equity, that of equality.

Furthermore, in *Allen v. Wood*, 256 Mass. 343 (1926), the Court asserted:

The object of apportioning accretions is that they shall be so apportioned as to do justice to each owner, in the absence of a positive prescribed rule and of direct judicial decision to guide.

Although the *Lorusso* decision is relied upon in the CCP/EIS, the agency failed to apply the case in a manner that allows for an equitable apportionment of the combined land mass. Indeed, the FWS claim outlined in the CCP/EIS would result in the recapture of the entire Atlantic Ocean frontage of Monomoy and deprive the Town of nearly all the ocean frontage that its property enjoyed before the inlet formed in 2013. In light of *Lorusso* and other applicable cases, the Town contends that no reasonable person and no Court could sensibly conclude that the FWS's position is *equitable* in nature. As a consequence, even if the doctrine of accretion is applicable, the Eastern boundary line must be moved to the South.

In addition to the legal arguments in support of the Town's position, it is also important to understand the history of the Eastern boundary; specifically how the Town has cooperated with FWS in the past on efforts to resolve this major issue. Soon after the 2006 land connection, the Town, FWS and the National Park Service (NPS) all recognized this new development raised many issues regarding ownership, jurisdiction, and management of Monomoy. Because of the immediacy of the issues, in 2007, all three parties reached agreement, called a handshake agreement, on a temporary boundary in which the FWS would manage all lands west of the boundary and the Town and NPS would continue to manage all lands east. In January 2008, the three parties formalized the handshake agreement through a Memorandum of Understanding (MOU, See Appendix B).<sup>xii</sup>

The 2008 MOU was a remarkable document in terms of recognizing the need for the FWS, NPS, and the Town to work cooperatively towards resolving this very complicated boundary issue. The MOU recognized that “the ownership of the area in the vicinity of the new land bridge between South Beach and Monomoy is unsettled and resolution of title may be time consuming and expensive for all parties”.<sup>xiii</sup> Importantly, the MOU also recognized South Beach as a popular public destination with large numbers of visitors and many popular activities, which the Town wished to preserve.<sup>xiv</sup> Lastly, it also expressed the desire of all three parties to work cooperatively and jointly to effectively manage the natural resources of South Beach.<sup>xv</sup>

The MOU accomplished two important objectives: first, it established an “administrative boundary for use while determining ownership and jurisdictional authorities among and between the parties”.<sup>xvi</sup> This temporary boundary was essential because it was not ambulatory; regardless of ever-changing natural conditions, the administrative boundary provided certainty that allowed all parties to ensure appropriate protection and management of the area’s natural resources and visitors.<sup>xvii</sup>

The second significant objective was establishing a cooperative tone among the parties and providing a path forward for future resolution of jurisdictional issues. Specifically Article II (2) provides as follows:

The parties hereto agree that a permanent resolution of the overlapping boundary issue must be attained in order to provide for adequate long-term management and protection of the area. The parties therefore will initiate the necessary planning, community outreach and compliance for the purposes of completing a full assessment of boundary and jurisdiction overlap and the development of appropriate long-term remedies to ensure protection of natural resources.<sup>xviii</sup>

The MOU also committed the parties to providing assistance to the other as necessary to accomplish the goals of the agreement.<sup>xix</sup>

In accordance with Article III of the MOU, the Agreement, including the temporary boundary, would have a term of 5 years,<sup>xx</sup> and thus expired in January 2013. However, by providing a mechanism for the renewal and extension of the MOU, it also recognized that the Eastern boundary issue was extremely complicated. If all three parties agreed, the MOU could be renewed by a simple memorandum of reaffirmation which would automatically extend the MOU for another five years.

The Town takes exception to the description and characterization of the MOU contained in the CCP/EIS which suggests it was temporary only for the purposes of resolving jurisdiction issues between FWS and the NPS.<sup>xxi</sup> While the boundary was in fact recognized as temporary, the MOU was not, as the CCP/EIS states “temporary until a permanent solution regarding Department of Interior jurisdiction (the overlap of the Cape Cod National Seashore onto Monomoy NWR) was resolved”.<sup>xxii</sup> This characterization is contrary to the plain language of the MOU, and strongly implies that that only FWS and NPS were intended to be parties to a final boundary resolution. On the contrary, the MOU clearly states that, “the jurisdictions of all parties to this agreement overlap in portions of the area know as South Beach (also known as Nauset Beach), Chatham.”<sup>xxiii</sup>

Regrettably the planning, community outreach, and cooperation envisioned by all three parties to the MOU did not materialize. The FWS has not engaged the Town in serious discussions about resolving the outstanding ownership and jurisdictional issues. Contrary to the terms of the Agreement, FWS did not consult with the Town prior to the expiration of the MOU as to whether it should be renewed. Indeed,

the FWS never seriously engaged the Town in boundary discussions at all, which is why the statement “at the expiration of the MOU in January 2013, we had not reached agreement on how to define a new boundary” is disingenuous.<sup>xxiv</sup> To the extreme disappointment of the Town, FWS unilaterally declared ownership and jurisdiction over 717 acres of the disputed area of South Beach and included this new Eastern boundary in all three Alternatives in the CCP/EIS, including Alternative A, the “No Action” or “Current Management” Alternative.<sup>xxv</sup> This was not the process envisioned by the Town when it entered the MOU in good faith with the FWS and NPS. We also believe that it was not coincidental that immediately after the FWS decided to let the MOU expire in January 2013—even though the goals and objectives of the MOU had not been accomplished—the FWS unilaterally and unequivocally claimed that “in 2013 the refuge boundary was expanded to include an area of Nauset/South Beach” and declared that it would be managed as wilderness.<sup>xxvi</sup>

Lastly, the CCP/EIS fails to provide adequate NEPA analysis on the action changing the ambulatory Eastern boundary. That determination is a “federal action” and thus subject to NEPA review. Although all Alternatives in the CCP/EIS use “the same, new, eastern refuge boundary,”<sup>xxvii</sup> the FWS failed to follow NEPA requirements for this designation. NEPA requires that “major federal actions” be documented in a detailed statement. The definition of federal “action” has largely been determined by the courts, and includes a wide range of activities.<sup>xxviii</sup> The Council on Environmental Quality (CEQ), which oversees US Government NEPA compliance, issued rules that deem “new or revised agency rules, regulations, plans, policies, or procedures” as federal actions, as well as “[a]doption of official policy” and “[a]doption of formal plans”.<sup>xxix</sup> The FWS’s unilateral assumption of ownership of beautiful and valuable seashore, on which tourism important to the Town is thriving, is no mere administrative detail; rather, it is a “major federal action,” encompassed by the definitions set forth above. Similarly, the Department of the Interior’s own NEPA regulations state that “[a] bureau proposed action is subject to the procedural requirements of NEPA if it would cause effects on the human environment and is subject to bureau control and responsibility”.<sup>xxx</sup> Again, this definition squarely applies.

The significance of the FWS’s proposed South Beach annexation is also crucial in determining whether, and what type of, NEPA analysis is required. CEQ guidelines state that such considerations of significance must include “[u]nique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas” and “[t]he degree to which the effects on the quality of the human environment are likely to be highly controversial”.<sup>xxxi</sup> The CCP/EIS considers none of these issues with respect to the boundary determination. In fact, the CCP/EIS deals with the entire boundary issue in just a few paragraphs. Significantly, the nature of the analysis the FWS did conduct—equitable division—cannot occur in a vacuum. Any division of property necessarily creates controversy, but one involving the equitable weighing and balancing involved in unilaterally taking South Beach is precisely the type of action for which environmental review and public comment are most critical. The CCP/EIS states, “[u]nder all alternatives, the Service will work to resolve the question of overlapping jurisdiction between the National Park Service’s Cape Cod National Seashore and Monomoy NWR.”<sup>xxxii</sup> That bland assurance alone demonstrates the proposal’s controversial nature, but it also omits something more fundamental: the interests of the Town and citizens of Chatham that FWS had formerly acknowledged in the MOU.

#### b. Wilderness Designation of Nauset/South Beach

In 1970, Congress designated most of the land and intertidal areas within Monomoy NWR as wilderness under the 1964 Wilderness Act.<sup>xxxiii</sup> The 1970 statute (P.L. 91-505) included 2,340 acres of the Refuge and specifically excluded two parcels totaling 260 acres because Congress determined those parcels had

nonconforming uses and activities on them.<sup>xxxiv</sup> The wilderness area designation for Monomoy NWR extended to the mean low water line.

In making a designation of wilderness within many refuges, the 1970 statute also recognized the legitimacy of ongoing activities within established refuges. In expressing their intent in House Committee Report 91-1441, Congress stated that, “certain other activities, authorized by the Wilderness Act, such as hunting, fishing, grazing of livestock and mineral development, where now authorized and permitted within these areas, may continue”.<sup>xxxv</sup> Additionally, Section 4(d)(1) of the 1964 Wilderness Act describes these uses to include “the use of aircraft and motorboats”.<sup>xxxvi</sup> Moreover, when the Senate Committee on Interior and Insular Affairs approved legislation designating Monomoy NWR as wilderness in 1968 and 1969—S. 3425 & S. 1652 respectively—they twice included in their committee reports the following assurances about the management requirements of a wilderness designation.

The Monomoy National Wildlife Refuge has been managed as a wild area since its establishment. No changes in management are envisioned if the island is designated as wilderness [emphasis added]. The laws and regulations of the Secretary of Interior governing the management and administration of the island as a national wildlife refuge will continue to apply. Such laws and regulations provide for public uses such as hunting and other wildlife oriented forms of outdoor enjoyment, as well as other necessary wildlife refuge management programs.

In 2013, when the FWS declared that an additional 717 acres of Nauset/South Beach had been added to the Refuge, they also announced the area would become part of the Refuge’s wilderness area. According to the FWS, this wilderness designation brought with it significant new management restrictions on uses of the area, contrary to the assurances provided by the United States Congress.

#### FWS Position

The FWS contends that when approximately 717 acres of Town owned land on Nauset/South Beach accreted and joined to lands in Monomoy NWR, it fell under the jurisdiction of the Federal government. Under all three Alternatives, the Refuge will manage the new Nauset/South Beach addition as part of Monomoy wilderness since both the new area attached to existing wilderness and the wilderness boundary extends to mean low water coincident with the Refuge’s new eastern boundary.

#### Town of Chatham Position

As previously discussed, the Town disagrees with the FWS annexation of 717 acres of Nauset/South Beach land previously owned and managed by the Town. As such, the Town opposes the proposal to manage all of the 717 acres of accreted Nauset/South Beach as wilderness. Had the FWS, NPS, and the Town been able to reach agreement on the Eastern boundary—as originally envisioned by the MOU—this issue would have been resolved.

The designation of the 717 acre parcel as wilderness brings with it a host of restrictions and prohibitions as required by the Wilderness Act of 1964. FWS is proposing to prohibit, curtail, or otherwise limit activities that have traditionally been conducted in this area including but not limited to beach sports, grilling, kite flying, and certain types of shellfishing. Previously, the Town managed or administered most of these activities consistent with natural resource protection. The wilderness designation means that many traditional and historic uses will no longer be allowed.

While the Town recognizes the DOT and the 1970 Wilderness Designation provided for an “ambulatory” boundary for the Eastern side of the Refuge, we do not believe that in doing so Congress contemplated such a large taking and transfer of land from one property owner to another while at the same time treating this new land as wilderness. Indeed, by adding 717 acres of Nauset/South Beach to the original wilderness area of 2,340 acres, the FWS increased the wilderness area by over 30 percent. This large annexation was done without any public process and no public input. In contrast, when Congress designated most of Monomoy NWR as wilderness, the designation was done through the very public process required by the Wilderness Act of 1964.<sup>xxxvii</sup> The Department of Interior was required to issue notices in the Federal Register and local newspapers, hold public hearings, and consult with and seek the views of the Massachusetts Governor. After this very public process, the Secretary of Interior submitted his recommendation to Congress which in turn was introduced as a legislative proposal. In January of 1969, Representatives Hastings Keith and Margaret Heckler introduced H.R. 486 and Representative Ed Boland introduced H.R. 987, both of which proposed a wilderness designation for Monomoy NWR. The House Committee on Interior and Insular Affairs then held public hearings on the proposed designation as did the U.S. Senate. Ultimately, the proposals were consolidated with other wilderness proposals in H.R. 19007, which eventually became law.

Moreover, the Wilderness Act of 1964 prescribes a very specific process for modifying or adjusting wilderness area boundaries. By requiring Congress to approve any boundary modifications or adjustment, the Act attempted to eliminate the very controversy created by FWS annexation of Town owned Nauset/South Beach. The Wilderness Act states that:

Any modification or adjustment of boundaries of any wilderness area shall be recommended by the appropriate Secretary after public notice of such proposal and public hearing or hearings as provided in subsection (d) of this section. The proposed modification or adjustment shall then be recommended with map and description thereof to the President. The President shall advise the United States Senate and the House of Representatives of his recommendations with respect to such modification or adjustment and such recommendations shall become effective only in the same manner as provided for in subsections (b) and (c) of this section [congressional approval].<sup>xxxviii</sup>

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 Monomoy wilderness. The FWS should have initiated a public process and sought the views of the Town and our local community, as our previous collaborative working relationship merits. An open and transparent public process, as initiated by the 2008 MOU, would have better informed the FWS about local concerns and issues and likely produced a more mutually beneficial outcome.

### c. Jurisdiction and Management in the Open Waters and Submerged Lands within the Declaration of Taking

Under all three Alternatives, the FWS claims authority and jurisdiction over the submerged lands, open water, and the water surfaces within the DOT. Up to this point the FWS has never regulated any of the activities occurring in the open waters or upon the submerged lands within the DOT’s fixed western boundary. Rather, these activities have been managed or authorized by either the Town of Chatham or

the Commonwealth of Massachusetts. Because the FWS is now claiming ownership and jurisdiction over the submerged lands within the DOT and proposing in the CCP/EIS to regulate and/or prohibit traditional activities and uses within this area, it has created a major controversy.

### FWS Position

The FWS claims the Declaration of Taking encompasses all land and waters from the mean low water line on the eastern shore of Monomoy NWR to the fixed western boundary of the DOT identified by latitude and longitude coordinates. FWS contends the submerged lands within the fixed western limits of the DOT boundary are included within Monomoy NWR based on historical records. FWS submits that the transfer of submerged lands to the Commonwealth of Massachusetts as a result of the 1953 Submerged Lands Act did not include submerged lands within the Declaration of Taking. Lastly, FWS contends, “these lands have been subject to Federal jurisdiction and control since the refuge establishment, although actual refuge management of these submerged and tidal lands has been limited.”<sup>xxix</sup>

### Town of Chatham Position

The Town disputes the FWS claim that the 1944 Declaration gave the United States title to the submerged lands and open waters within the Declaration of Taking. Schedule A to the 1944 DOT describes the island of Monomoy itself, and also references a *rectangular* area of open water to the West of Monomoy (See Appendix B).<sup>xi</sup> This area is described in longitudinal and latitudinal terms and is also depicted in various images in the CCP/EIS. While the 1944 Declaration clearly describes a taking of the land-mass that is Monomoy, it does not cede the FWS absolute ownership of the open water and submerged lands contained within the above-described rectangular box to the west of Monomoy Island.

The Town’s position is rooted in the language of the 1944 Declaration. This language, as described in Schedule A, limits the taking to “all those tracts or parcels of land lying above mean low water.”<sup>xii</sup> *Emphasis supplied.* In other words, while the scope of the taking encompasses all area within the rectangular box, the Declaration only vested the United States with ownership of lands within the box that lie above “mean low water.” This language is unambiguous and must be interpreted in accordance with its plain terms. According to the *General Hospital Corp. v. Massachusetts Bay Transportation Authority*, “an order of taking in writing, duly recorded, in conformity with the statute authorizing the order of taking, is to be treated as if it were a statute.”<sup>xiii</sup> As to the interpretation of statutory language, from *Gillette Co. v. Commissioner of Revenue v. AMI Woodbroke, Inc.*, “where the language of the statute is plain, it must be interpreted in accordance with the usual and natural meaning of the words”<sup>xiiii</sup> Stated another way, where the language of an instrument of taking is unambiguous, its plain terms are controlling and no further exploration of the issue is required. Accordingly, the Town contends the FWS is bound by the stark limitation in the DOT where the actual taking is limited to land above “mean low water.”

Because the FWS is bound by the unambiguous terms of the Declaration of Taking, it cannot logically assert that there may have been a different intent – i.e., that the government officials who spearheaded the taking actually intended to take the open water in addition to the land comprising Monomoy. Where the terms of a Taking are unambiguous, evidence of intent is irrelevant. In an analogous situation, the Massachusetts Supreme Judicial Court found:

The writing by which land was taken by the Boston Transit Commission for the construction of a tunnel pursuant to St.1902, c. 534, being equivalent to a legislative act, in that the commission was authorized by statute to take land in that manner, the motives or opinions of any member of the commission in taking the land cannot be inquired into, under the rule that courts cannot inquire into the motives of legislators in construing statutes.<sup>xliv</sup>

Furthermore, even if the intent of the original Declaration of Taking was relevant, the intent did not definitively include an intent or desire to take title to the open water. While historical documents both preceding and post-dating the 1944 DOT certainly reference activities within the open water to the West of Monomoy, a substantial amount of historical documentation references intent to only manage the migratory bird population on the island of Monomoy itself.<sup>1</sup> Moreover, the Declaration itself is devoid of any language that may evidence a purpose of managing open water or the fisheries occurring on them. Rather, the DOT expressly arose “under the authority of an Act of Congress entitled the Migratory Bird Conservation Act” (See Appendix B).<sup>xlv</sup> Furthermore, the sole elucidated purpose of Declaration was for the protection of bird species “during the nesting season or while on their way to and from their breeding grounds”.<sup>xlvi</sup> As reflected in the available reports, the taking was solely to be of the land itself.<sup>2</sup> Indeed, the 1944 plans that FWS prepared expressly reference the “mean low water” as the determinative boundary (See Appendix B).

Had the United States desired to take the open water and submerged lands to the west of Monomoy, the DOT could have simply stated that fact. However, the inclusion of language limiting the taking to land above mean low water must, as a rule of statutory interpretation, be given significant import. A more realistic explanation is that the inclusion of the rectangular box was intended to take into account the fact that, even in 1944, the FWS was aware of the dynamic nature of Monomoy’s coastline and the slow westerly movement of the island. Numerous reports and memoranda reflect knowledge of the ever-changing nature of the western boundary<sup>3</sup>. Contrary to the Eastern boundary, which generally exhibits a smooth and consistent shoreline, the Western boundary is typified by constant changes, the result of which has been the appearance and disappearance of new and often temporal land masses above mean low water. By drawing the rectangular box, the FWS was able to capture such land masses under the Declaration, so long as such land was within the defined area of the rectangular box. Supporting this premise is a map of Monomoy prepared in 1933 and presented in 1938 in conjunction with the exploration of the taking that depicts low lying flats to the west of Monomoy. This map shows a more modest rectangular box that closely corresponds with the temporal land masses and shallow water immediately to the West of Monomoy (See Appendix B).

The FWS contends that it was not required to take the open water in 1944 as the United States already owned it. Even though the 1953 Submerged Land Act (“SLA,” 43 U.S.C. 1301, et seq), under which all open water and submerged land within three miles of the coast was conveyed to the States, the Service points to a special exemption provision of that Act (Sec.1313) which reads (in part) as follows:

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<sup>1</sup> See, e.g., “Development Plan for the Monomoy National Wildlife Refuge,” by J. Clark Sawyer, Chief of the Division of Wildlife Refuges, dated March 24, 1941.

<sup>2</sup> For example, on August 12, 1938, a report by J. Clark Sawyer, the Chief of the Division of Wildlife Refuges only expressed an interest in “ownership of the land area” of Monomoy.

<sup>3</sup> For example, in a report dated July 10, 1938, Richard E. Griffith, a biologist with the Division of Wildlife Refuges wrote “the tip of Monomoy is continually building around to the west.”

There is excepted from the operation of section 1311 of this title – (a) all tracts or parcels of land together with all accretions thereto, resources therein, or improvements thereon, title to which has been lawfully and expressly acquired by the United States from any State or from any person in whom title had vested under the law of the State or of the United States...and any rights the United States has in lands presently and actually occupied by the United States under claim of right.

This provision of the Submerged Lands Act allows the United States to claim an exemption from that Act for any open water which the United States had expressly reserved a claim at the time of enactment. The Town does not agree with the FWS position and rejects the notion that the inclusion of the rectangular area within the 1944 Declaration was sufficient to reserve the claim of the United States to such waters. The United States Supreme Court has already held that application of the exception contained within §1313 is dependent upon the presentation of proof that the United States intended to reserve right or title to the open water. Specifically, in *Alaska v. U.S.*, the Supreme Court stated that “[t]he requisite intent must, however, be “`definitely declared or otherwise made very plain.”<sup>xlvii</sup> In assessing whether the Federal government has adequately reserved its rights in this regard, the Supreme Court further reasoned that “[w]e will not infer an intent to defeat a [State's title to inland submerged lands `unless the intention was definitely declared or otherwise made very plain.” *Id.* at 101, *citations omitted*. Other case law underscores the intent of the Submerged Lands Act to create a presumption that title to submerged land within three miles was to be conveyed to the States. Any reservation of right or title by the United States must be plain and clear but in this instance, as discussed above, the DOT clearly evidences intent to exclude open water and submerged land from the taking. Other peripheral documents do not offer a contrary proposition and support the notion that the FWS was only interested in taking land above mean low water.

In the CCP/EIS, the FWS also claims the United States Supreme Court has ruled that the waters of Nantucket Sound to the west of Monomoy are not internal waters of the Commonwealth of Massachusetts and, instead, belong to the United States.<sup>xlviii</sup> The FWS references the case *U.S. v. Maine*, 475 U.S. 89 (1986) to support its views. However, a close review of that case reveals that the Court did not directly discuss the Submerged Lands Act; rather, the Court simply discusses, and rejects, the Commonwealth’s claim that all waters of Nantucket Sound—both within and beyond three miles—belong to the Commonwealth. Moreover, the FWS’ reliance on this case is misplaced because ten years later, the Supreme Court issued a “Supplemental Decree” in *U.S. v. Maine*, 516 U.S. 365 (1996) (See Appendix B). In this supplemental case, the Supreme Court confirmed the right and title to all land in Nantucket Sound within three miles: “affirming the title of the United States to the seabed more than three geographic miles seaward of the coastline, and of the States to the seabed within the three geographic mile zone”. It is notable that the Supplemental Decree specifically references Monomoy in describing the subject property. Even more importantly, in the 1995 Joint Petition for the Supplemental Decree (See Appendix B), the United States Solicitor General affirmatively requested that the Court enter such decree, and at no point did the Solicitor General ever reference a reservation of rights with respect to the submerged land immediately to the West of Monomoy.<sup>xlix</sup>

In summary, the Town’s position is that the Supreme Court’s Supplemental Decree of 1996 definitively applies the Submerged Lands Act as affirmation for the Commonwealth’s title to all of Nantucket Sound within three miles of shore, including Monomoy. And, under the legal doctrine of collateral estoppel, the United States and the FWS are now precluded from arguing a contrary proposition. The FWS is bound by such decision because the Supreme Court, by the United States’ own initiative, has already vested the Commonwealth of Massachusetts with the ownership of the waters west of Monomoy.

Lastly, the U.S. District Court has already opined on this subject. Particularly, in the case of *United States of America v. Winthrop E. Taylor*, the Court had an opportunity to consider whether the U.S. Government had the authority to prohibit activities below mean low water. In question was whether Mr. Taylor could walk his dogs in the tidal flats below mean low water without facing prosecution by the Federal government.<sup>1</sup> After consideration of all evidence and review of the 1944 taking, the Judge acquitted Mr. Taylor as the taking limited the boundary of the Refuge to land above mean low water.

#### **IV. Fisheries Related Issues**

##### **a. History of Shellfisheries in Chatham**

The Town of Chatham is very proud of its centuries-long history of successful management of local shellfish resources. The first shellfish regulations enacted through Town Meeting occurred in 1771; the town voted that “no person but inhabitants of the Town should have the liberty to catch clams ....”<sup>li</sup> The first appointment to oversee enforcement of this regulation occurred in 1786.<sup>lii</sup>

Despite these early local regulations, the overall control over the shellfisheries resided with the Commonwealth through the Fish and Game Commission. In 1880, local authority to regulate eel, clams, quahogs, and bay scallops was given to the coastal towns though “...town regulations were somewhat informal with the commonwealth being in formal control”.<sup>liii</sup> Chatham’s first comprehensive shellfish regulations were adopted at the 1929 Annual Town Meeting “under and in accordance” with State General Laws.<sup>liv</sup> Through the State, the Board of Selectmen was given authority to control and regulate the taking of shellfish. The first paid Shellfish Constable was appointed at the 1930 Annual Town Meeting, with an annual salary of \$1,500 and the requirement of being “...an inhabitant of the Town”.<sup>lv</sup> The State amended its governing regulations with the passage of Chapter 329 of the Acts of 1933 which were adopted into Chapter 130 of the Massachusetts General Laws (M.G.L.), and subsequently adopted by the Town at the 1934 Annual Town Meeting.<sup>lvi</sup> Section 52 of Chapter 130 M. G. L. gives coastal communities the authority to regulate and manage certain shellfish within State waters though they must “make any regulations not contrary to law in regard to said fisheries “. <sup>lvii</sup> Along with provisions set forth in M.G.L. Chapter 130, towns must also adhere to state regulations concerning harvest levels. Chapter 130 also makes provision for towns that do not take authority over its resources as follows:

If any city or town bordering on the coastal waters neglects or refuses to take the control of the shellfish, sea worms or eels within its boundaries as provided in this section, such control shall be temporarily exercised by the director for the benefit of such city or town and such authority shall continue until such time as the aldermen or city council of such city or the selectmen under authority of a vote of such town shall take over such control...<sup>lviii</sup>

While Chatham and all other coastal towns within the Commonwealth of Massachusetts actively manage local shellfish resources, the Commonwealth maintains ultimate jurisdiction over shellfisheries. Even today, following approval by local Boards of Selectmen, all promulgated shellfish regulations must receive final approval by the Director of MA Division of Marine Fisheries.<sup>lix</sup>

A major aspect of the Town’s management philosophy is the propagation of shellfish to ensure the sustainability of its resources. Concepts of shellfish propagation exist as far back as the 1930s, and these are well documented throughout Chatham’s history:

Under the existing conditions, we should be foresighted enough to stock our shores with shellfish as best we can, as they are a great help to the natives and a great attraction to our summer visits.<sup>k</sup>

In 1983, the Town's Shellfish Advisory Committee supported and recommended to the Board of Selectmen the creation of a revolving fund to finance an expanded and permanent shellfish propagation program. As a result, Chatham now operates the largest municipally-run shellfish propagation program on Cape Cod. The initial upwelling facility, used for the grow-out of juvenile seed quahogs, scallops, and oysters, has had a substantial, positive impact on enhancing the natural viability of local shellfish resources by maintaining a continuous brood stock (See Picture). The facility, in operation since 1998, is designed to produce up to four million quahogs seed annually as well as bay scallops and other shellfish for placement in Town waters. 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. Annually, the Town issues between three to five hundred commercial shellfish permits and approximately three thousand family and recreational permits; what was true 70 years ago remains true today: shellfish are a key driver of the Town's economy and tourism industry. It should also be noted all funding for the propagation program is derived solely from the sale of commercial permits.



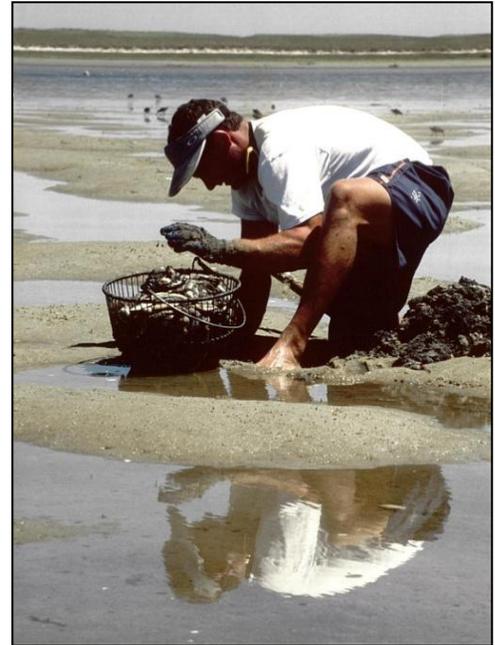
Chatham shellfish propagation upwelling facility

In addition to the Town's propagation program, the Town is deeply committed to improving shellfish habitat through improved water quality and by protecting and restoring eelgrass. Peer-reviewed research has conclusively proven that eelgrass is adversely affected when water quality declines as a result of nutrient enrichment, and residential and commercial septic systems account for the overwhelming majority of the nitrogen that seeps into Chatham's coastal waters. To solve this, in 2009, Chatham voters approved the initial appropriation of the Comprehensive Wastewater Management Plan to eliminate the principal source of nitrogen pollution in the Town's embayments. The Comprehensive Wastewater Management Plan calls for sewerage of the entire Town to eliminate nitrogen loading of our local waters from septic systems. Implementation of this 30 year plan began in 2010 and has an investment to date of \$92,000,000.

With this in mind, it should come as no surprise that Chatham also has an extremely viable wild shellfish resource which supports the largest active wild shellfishing industry on Cape Cod. Wholesale landing values are estimated at just under \$4 million for 2013 and have been as high as \$7 million in banner years. Local and regional fisheries wholesalers, retailers, processors, and restaurants all benefit economically from Chatham's sustainable shellfish resources.

## b. Shellfishing in Intertidal Areas

For over 150 years, the Monomoy area has been known as one of the most productive clamming areas in all of Massachusetts.<sup>lxi</sup> As such, clamming and shellfishing have been one of the most stable and economically important fisheries throughout Chatham's history; recreational and commercial fishermen depend on shellfishing for food and income. In all three Alternatives, the CCP/EIS proposes to continue to allow the hand harvest of scallops and the non-mechanized, hand harvest of clams—including softshell, quahog, and razor clams—under town and state regulations in the intertidal area. Because nearly 80% of the harvestable intertidal shellfish flats in the Town of Chatham are located in or adjacent to the Refuge,<sup>lxii</sup> the Town supports FWS's re-affirmation of the long-standing commitment to maintaining the Town of Chatham-managed manual shellfish fishery for soft-shell clams, razor clams, quahogs, and scallops as a priority, wildlife-dependent, public use. As the FWS aptly explains, "Shellfish harvesting using traditional hand raking methods has coexisted for decades with migratory birds and other wildlife species of conservation concern that uses the expansive and dynamic intertidal flats around Monomoy NWR".<sup>lxiii</sup> Solitary shellfish harvesting on the tidal flats represents the type of primitive and unconfined activity contemplated under wilderness laws (See Picture).



Traditional hand harvesting of intertidal shellfish

### FWS Position

The FWS proposes to continue allowing residents and visitors to harvest subterranean shellfish—softshell clams, quahogs, and razor clams—using non-mechanized hand raking tools and no artificial means of extraction, such as salt and chlorine, in accordance with Town rules and regulations.<sup>lxiv</sup> The harvest of these shellfish has been found to be a compatible and appropriate use within the wilderness area. The FWS also proposes to begin enforcing the existing prohibition on the use of wheeled carts.

### Town of Chatham Position

The CCP/EIS and attached compatibility determination correctly recognize the manual shellfishery on Monomoy as an historic and cultural use, dating from the pre-colonial period and subject to Town regulation since the 1770s.<sup>lxv</sup> In these documents, FWS further recognizes that manual harvest methods for these clam species have remained essentially unchanged and that the Town's shellfish management program has consistently addressed FWS's concerns as they have arisen.<sup>4</sup>

FWS's decisions in the CCP/EIS regarding the intertidal hand harvest of shellfish confirm a long line of federal actions and assurances to the Town since the refuge taking process began in 1941. In addition to

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<sup>4</sup> For example, in 2011, stemming from a request from the FWS, the Town amended its shellfish regulations to prohibit hydraulic pumping for clams at the Power Hole.

a series of compatibility determinations—most recently in 1994 and 2004<sup>lxvi</sup>— maintenance of the Town-managed shellfishery has historically been confirmed in the following:

- A 1941 refuge development plan, issued as the United States was commencing the taking process, states, “Under our regulations, sports and commercial fishing can be carried out as in the past. Our development work will actually benefit the shell fish industry...”<sup>lxvii</sup>
- In the section of the 1945 “Statement of the [FWS] Concerning the Monomoy National Wildlife Refuge Controversy” entitled “No Interference with Commercial Fishing,” issued soon after the United States amended its taking complaint to include the Town of Chatham and State of Massachusetts, the FWS responded to the charge that “[t]he establishment of the refuge would prohibit fishermen from operating thereon” by stating unequivocally that, “the Service has stated there be no interference with fishing.”<sup>lxviii</sup>
- A 1955 FWS Order, issued before the federal court began trial on just compensation in the takings case, stating “commercial fishing (including shellfishing) and sport fishing” in the Refuge was subject to state and local fishing laws.<sup>lxix</sup>
- The Interior Department’s 1967 Wilderness Study Report,<sup>lxx</sup> Wilderness Proposal,<sup>lxxi</sup> and a transcribed record of a January 11, 1967 FWS hearing in Chatham relating to the proposed wilderness designation.<sup>lxxii</sup>
- Presidential and Interior Department recommendations to both the 90<sup>th</sup> and 91<sup>st</sup> Congresses in connection with the introduction in the 90<sup>th</sup> Congress and ultimate enactment in the 91<sup>st</sup> Congress of legislation designating the Monomoy wilderness.<sup>lxxiii</sup>
- Congressional committee reports in both Congresses on Monomoy-specific bills that were integrated with minimal changes into consolidated legislation, enacted in 1970, that designated over 200,000 acres of land as wilderness in twelve different states, from Maine to Alaska.<sup>lxxiv</sup>

As part of its ongoing dialogue with the FWS relating to this issue, the Town presented detailed economic, scientific, and legal analyses supporting the shellfishery’s Refuge compatibility and wilderness consistency, and concluded the manual shellfishery causes no more than ephemeral impacts on shorebird foraging opportunities or on the tidal flat substrate.<sup>lxxv</sup> As the FWS concluded, the shellfishery promotes shorebird foraging opportunities and a healthy intertidal zone.

More specifically, the Town submitted scientific literature reviews in 2003 and 2005, and later, three reports detailing scientific research conducted and documented from 2005 through 2010 pursuant to FWS-granted special use permits. This scientific research addressed issues raised in an extensive FWS-commissioned peer review of the 2005 scientific literature review. The Town’s research confirmed, with site-specific information, that the manual shellfishery does not adversely affect migratory birds; that benthic habitat recovery from manual shellfishing is rapid; and that even if the maximum estimates of shellfishing on Monomoy—a projected ~3 percent of the 37,831 acres contained in SC 47, the Town-designated shellfishing area surrounding Monomoy Island—were ever to occur, such activities leave available massive expanses of quality forage areas for shorebirds.

Furthermore, the Town manages the shellfishery to prevent adverse impacts to the Monomoy ecosystem. Managerial safeguards include, but are not limited to: (i) the Town’s licensing regime; (ii) the manual nature of the shellfishery; (iii) FWS-imposed area closures and buffer zones; (iv) the Town’s time of day and weather-based limits; (v) FWS restrictions relating to terns, plovers, marine mammals, and coastal dunes; and (vi) the Town’s active management of the clam flats.

Indeed, within the CCP/EIS, the FWS correctly concluded that traditional, manual shellfishing affirmatively benefits the Refuge and its component wilderness.<sup>lxxvi</sup> Specifically, the Town’s shellfishery increases the Monomoy tidal flats’ shellfish productivity and oxygenation. Accordingly, shellfishing helps maintain the baseline conditions existing at the time of wilderness designation—a well-managed and productive intertidal ecosystem. Further, FWS’s own research found that at least seven species (black-bellied plover, ruddy turnstone, semipalmated plover, sanderling, semipalmated sandpiper, dunlin, and short-billed dowitcher) were observed “actively foraging in shellfish holes or the remaining adjacent sediment piles.”<sup>lxxvii</sup> Perhaps even more significantly, FWS surveys determined that “shellfish harvesting activities appeared to have a positive influence on the mean density of American oystercatchers and ruddy turnstones,” which is the very reason the Refuge was created in the first place.

Under Alternatives B and C, however, the FWS would “enforce the existing prohibition on the use of wheeled carts and other mechanical transport in the Wilderness Area” as the Wilderness Act prohibits the use of mechanical transport.<sup>lxxviii</sup> Sec. (4)(c) of the Wilderness Act of 1964 (16 U.S.C. 1133(c)) states in part that “there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area”. Additionally, FWS regulations (50 CFR §6302.20) prohibit the use of “motorized equipment; or motor vehicles, motorboats, or other forms of mechanical transport”.

The Town opposes this proposal for two reasons. First, the ban is contrary to the intent and plain meaning of the Wilderness Act, and secondly, enforcing a prohibition on wheeled carts would have a significant negative impact on local shellfish fishermen. Non-mechanical, two wheel hand trucks are manually pulled by shellfish fishermen to carry their clams and hand rakes to and from their small skiffs secured on the intertidal flats. These manually operated hand trucks are outfitted with large, pliable tires so as not to sink into the mud or sand and to minimize any impact on the flats (See Picture). Hand trucks are an essential ingredient to successful clamming operations and minimize impacts to the tidal flats. Without hand trucks shellfish fishermen would have to make many trips to their skiffs, thereby leaving a larger footprint on the tidal flats. In addition, the CCP/EIS identifies currently approved non-mechanized means of transport including dragged sleds or other non-wheeled conveyances. Ironically these means of transport would be more harmful and impactful to the substrate and benthic communities than wheeled hand trucks.



Typical manually operated hand cart for transport of shellfish over tidal flats

The Town also contends the FWS interpretation of the statutory prohibition on the use of mechanical transport is overly broad and simply not applicable to manually operated non-mechanized hand trucks. In Sec. (4) of the Act (Prohibition of Certain Uses), the statute clearly identifies motor vehicles, motorized equipment and aircraft as forms of mechanical transport.<sup>lxxix</sup> The Town does not believe the reference in the Act to other forms of mechanical transport was ever intended to include non-mechanized manually pulled two wheel hand trucks. Rather this reference was included to ensure that other forms of mechanized transport not mentioned in the statute would be included in the prohibition.

### c. Fisheries on Submerged Lands and Open Waters within the DOT.

Because the FWS claims the United States has title to all submerged lands and waters within the DOT, the agency contends it has full authority to authorize or deny all activities within that area. As a result, under all three Alternatives the CCP/EIS proposes to regulate, limit, or ban a number of state and locally regulated fishing activities that have historically been conducted in the open waters or on the submerged lands within the DOT.

#### FWS Position on Regulation of Open Water Fishing and Bottom Tending Fishing Gear and Techniques

In the CCP/EIS, the FWS acknowledges that fishing is a traditional use of the waters around Monomoy Island and concludes that, “the Service has determined that there is no compelling Service interest necessitating further regulation of fishing in open waters”.<sup>lxxx</sup> As a result, the CCP/EIS does not propose to further regulate any fishing activity in the open waters above submerged lands within the DOT. These fishing activities include demersal long line fishing; mid-water trawl fishing and; hook and line/rod and reel fishing. Nor does the FWS intend to regulate lobster, crab, and whelk pot fishing, or the hand-harvest of scallops, which, along with pot fishing occur on the submerged lands. The FWS states it allows these activities because they “do not cause disturbance to the submerged lands and are already regulated by other Federal and State agencies”.<sup>lxxxii</sup>

At the same time, all three Alternatives in the CCP/EIS propose to prohibit any fishing method that uses bottom disturbing fishing gear and techniques. This includes scallop and mussel dredging; bottom tending otter trawls; hydraulic quahauging; and fish weirs. The FWS contends that this action is necessary to “protect eelgrass beds and other sensitive bottom-dwelling communities”.<sup>lxxxii</sup>

#### Town of Chatham Position on Regulation of Open Water Fishing and Bottom Tending Fishing Gear and Techniques

As previously stated, the Town strongly disagrees that the FWS has any legal authority to manage local and state regulated fisheries in the open water or submerged lands within the DOT. Historically, these fisheries have been managed appropriately and effectively at the state and local levels to the sustained benefit of shorebirds and other Refuge resources; our local knowledge and experience in managing these resources has ensured their continued health and conservation. The Town has demonstrated its ability and willingness to amend and modify regulations when necessary to fully conserve local resources and habitat. This exertion of authority by the FWS ignores this long-standing performance of the Town as a conscientious environmental steward.

Notwithstanding this position, the Town supports the proposal to continue to allow most types of fishing in the open waters west of Monomoy Island. However, as documented in these comments, the Town firmly opposes the prohibition on fishing gear and techniques that ostensibly disturb the submerged lands and purportedly threaten eelgrass beds. 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 levels of impacts to the benthic marine habitat assumed by the FWS.

Commercial and recreational fishing have been part of the Town’s heritage for centuries, and it continues to be of critical economic importance to the community. Chatham is homeport to the largest commercial fishing fleet on Cape Cod and the third largest in Massachusetts. While most of these fishermen were once engaged in offshore fisheries, continued stock declines and increasing regulatory

limitations have significantly reduced their opportunities in those fisheries. Consequently an increasing numbers of offshore fishermen are turning to local, inshore fisheries as their only opportunity to make a living. Today, the overwhelming majority of fishermen in Chatham are involved in at least one local inshore fishery, many of these occurring within the open waters of the DOT.

The economic importance of the fisheries to the Town and the Cape Cod economy cannot be overstated. For 2012, the National Marine Fisheries Service reported that over \$28 million worth of fish and shellfish (ex-vessel value) were landed in Chatham and Provincetown.<sup>lxxxiii</sup> 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 utilizing an economic multiplier of 3.16 when assessing the true value of commercial fish landings. This would equate the annual economic impact of fish landings derived from the Port of Chatham to the local and regional economies from \$45 to over \$60 million. The fishing industry is also a vital component of Chatham's local workforce, directly and indirectly supporting over 500 local and regional jobs.

While the Town agrees with the FWS proposal not to regulate open water fishing occurring above the submerged lands within the DOT, the Town strongly opposes the prohibition on any fishing gear and techniques the FWS allege disturbs the bottom. This gear includes scallop and mussel dredging; bottom tending otter trawls; hydraulic quahogging; and weir fishing. At a minimum the logic used for allowing some types of fishing and prohibiting other types is at best confusing. First, the CCP/EIS states that, "At this time there is no compelling Service interest necessitating further regulation of fishing in open waters lying above the submerged lands within the Declaration of Taking".<sup>lxxxiv</sup> The CCP/EIS then identifies the permissible fishing activities. Immediately following this list the FWS submits that, "These (allowed fishing) activities do not cause disturbance to the submerged lands and are already regulated by other Federal and State agencies (e.g. the National Marine Fisheries Service and the Massachusetts Division of Marine Fisheries)".<sup>lxxxv</sup> Taken together, the standards or rationale used by the FWS in determining whether or not to regulate a certain fishing activity in the open water and submerged lands can be summarized as (1) if there is a compelling Service interest, (2) if the fishery is already regulated by other Federal or State agencies and (3) if the fishing activity disturbs the submerged lands.

With respect to the interests of the FWS, the CCP/EIS does not define or identify what such an interest might be. Without knowing what the Service means by "compelling interest," this is a very difficult standard to interpret. The Town submits the FWS has no compelling interest in regulating any of the fishing activity in open water and on submerged land within the DOT. For decades, the local fisheries have been successfully prosecuted and conservatively managed without negatively impacting Refuge resources or its mission. The next standard used in the CCP/EIS for determining regulation is whether the fishery is already regulated by other Federal and State agencies. In the open water and submerged lands beneath, all fisheries are regulated by the Commonwealth of Massachusetts or by the Town of Chatham through a delegation of management authority. Because the Commonwealth maintains ultimate management authority over all the fisheries conducted within the Refuge and on or above the adjacent submerged lands within the DOT, there are no unregulated fisheries in the area under consideration. Therefore, using just the first two standards, FWS could only conclude that it should not regulate any of the fisheries as they are successfully and appropriately being managed directly by the Commonwealth or by the Town through the delegation of authority.

The third standard relating to the regulation of fisheries—disturbance of submerged lands—is even less clear, particularly considering the high energy, dynamic sandy environment of Monomoy Island and Nantucket Sound. The CCP/EIS states: “In an effort to protect eelgrass beds and other sensitive bottom-dwelling communities, no fishing or shellfishing activities that use bottom-disturbing gear and techniques will be allowed under any alternatives in the Declaration of Taking”.<sup>lxxxvi</sup> 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. For example, the Town has prohibited teeth or rakes on scallop and mussel dredges to protect eelgrass and allows only seasonal harvesting of bay scallops during the eelgrass dormant period, November 1 to March 31. The dredges used by local fishermen are very lightweight and pulled at low speeds with small skiffs (See Picture). Furthermore, eelgrass beds in Stage Harbor, an area where the Town has regulated bay scalloping for decades, are some of the healthiest beds in all of Nantucket Sound. While the decline of viable, healthy eelgrass beds has been widely acknowledged throughout the region’s coastal waters, there has been no indication or scientific evidence to suggest this decline is related to traditional fishing activities or methods.



Typical inshore bay scallop dredge

To the contrary, the CCP/EIS fails to document any harmful effects on eelgrass of bottom tending gear used by local families and fishermen and failed to identify harmful effects on sensitive bottom dwelling communities. Appendix A contains the results of an independent literature review the Town commissioned to investigate documented impacts of using bottom disturbing gear and techniques on submerged lands. The review examined all references cited within the CCP/EIS that were used to justify the proposed ban on bottom disturbing fishing gears in the sub-tidal areas within the DOT (see pictures below of large dredges whose impacts are used to justify the ban). The review focused on all primary justification statements within the CCP/EIS and concluded the structure and scope of those statements falls considerably short of the quality needed to address this important issue. It also concluded the reliability of the supporting citations could be called into question due to their design, analysis, and site location bias. Without clarification and additional supporting information, the prohibition against bottom tending fishing gear and techniques is not scientifically justified and therefore unwarranted. Based on this analysis, it appears that the FWS first made a policy decision to ban bottom tending fishing gear and techniques and then tried to justify it through studies not relevant to local habitats, the geographic region, or the type of gear used by local fishermen.



The impact on bottom habitat from this type of harvesting method—employed in the cockle fishery—is used to defend the prohibition of bay scallop dredges. There is no comparison to the intensity of this (above) type of harvest to the small skiff, light weight dredges used in Chatham.



Typical fifteen foot scallop dredge used to harvest sea scallops in the offshore scallop fishery. Impacts from these dredges were used to justify banning bay scalloping in the Refuge.

Similarly, Appendix A also contains the results of a literature review investigating the justifications for banning the harvest of mussels in all areas within the DOT. The stated reason for the prohibition on mussel harvesting is that it is an “important food source for migratory birds”.<sup>lxxxvii</sup> 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. Moreover the CCP/EIS ignores the Town's successful management of this fishery for the benefit of both sea birds and fishermen. For example, in the mid-1980s, the Town imposed a minimum size of 2 inches to ensure a sustainable fishery by allowing mussels to reach sexual maturity and provide a number of spawns before reaching legal size for harvest.<sup>lxxxviii</sup> The 2 inch limit debunks the contention that fishermen and shorebirds compete for the same mussels as smaller shore birds forage for "spat", or seed mussel.<sup>lxxxix</sup>

In all three alternatives, the FWS maintains that "no artificial means of extraction (such as salt and chlorine)"<sup>xc</sup> may be used while shellfishing and specifically in the harvest of razor clams. The Town disagrees with this prohibition because it is neither justified by any scientific information nor is this prohibition needed. Unlike other proposed prohibited activities, salting for razor clams was not reviewed within the Findings of Appropriateness review process. The basis for this proposed prohibited harvesting method is therefore unknown. None of the supporting literature cited in the CCP/EIS involves methods of harvest employed by local shellfish fishermen, and as a result, the FWS is unable to substantiate any adverse effects on local habitat or Refuge resources. Indeed, research conducted by Constantine, et al (2008), and Krzyewski, et al. (2005) indicates no effects to the benthic community by "salting" for razor clams as the marine environments are adaptable to fluctuating salinity levels.<sup>xcixcii</sup> In addition to a lack of justification for the ban on using salt as a means of extraction, the prohibition simply is not needed because the Town has already acted proactively: salting is allowed by the Town but the Town of Chatham Shellfish Rules and Regulations, Section 104 (B) 25 (see Appendix B) define salting as a saline solution derived solely from table salt and water; the use of chlorine is prohibited. Moreover, through the application of the precautionary approach to ensure salting does not in any way impact other species, the Town of Chatham Shellfish Rules and Regulations, Section 402 (A) also prohibits salting in the inter-tidal areas that contain mixed mollusk species.

Lastly, all three alternatives the CCP/EIS propose to ban fish weirs, one of history's oldest and most sustainable fishing methods. In Boston's Back Bay area, wooden stake remains of the Boylston Street Fish Weir have been uncovered during excavations for subway tunnels and building foundations. This series of fish weirs was built near the tidal shoreline some 3,700 to 5,200 years ago. On Cape Cod, the Wampanoag tribe was the first to use fish weirs in the late 1600s. Over time, fish weirs became very popular in Nantucket Sound and along the Cape coastline. In his 1887 Report on Fisheries, Massachusetts Commissioner of Inland Fish and Game Theodore Lyman reported that in 1873, 5000 barrels of menhaden were taken in Chatham fish weirs alone and used mostly as bait for Georges Bank cod fishermen.

For many reasons few active fish weirs remain today. Setting and tending the fish weirs is very labor intensive while declining fish stocks and changing migratory patterns of various fish species have made the practice less profitable for the fishermen. There are currently only four permitted weir sites located within the DOT, however, only one of the weir sites is installed and active in a given year. None of the permitted weir sites are located in either existing or historically mapped eelgrass resources. In recent years the remaining active fish weir operator has had multiple collaborative fisheries research projects with science institutions such as the Provincetown Center for Coastal Studies, and the New England Aquarium precisely due to its unique method of collecting live marine specimens. As a seasonal operation, poles for the weir are set in early spring and pulled out of the water in the summer or early fall. During the fishing season the poles become encrusted with barnacles, mussels and other sea life which provides food for migrating seabirds. The fish caught in the weir (squid, mackerel, butterfish, sea

bass, scup, etc.) also provide a source of food for seabirds and other larger predator fish and marine mammals (seals) that enter the weir. Because fish are removed by fishermen by hand using dip nets virtually all unwanted fish is returned to the sea alive. The FWS proposes to ban the use of fish weirs because the submerged land is disturbed when the poles are set in the spring. Unfortunately, FWS does not provide any scientific basis on which to justify this ban especially in a high energy sandy environment like Nantucket Sound. Accordingly the Town strongly opposes the ban on the very historical and traditional fish weir fishery.

It is also unclear as to how or if the FWS is proposing to regulate the state regulated sea clam fishery. While not currently occurring within the submerged lands and open waters of the DOT, this can be a very important fishery to local fishermen. The Town would not support any limitations on the ability of local fishermen to harvest sea clams (under state regulations) if the opportunity presents itself.

Lastly, the approach taken by the FWS in prohibiting bottom tending fishing gear and techniques and banning the harvest of certain shellfish stands in stark contrast to the situation involving the evaluation of the impacts of manual hand harvesting of clams above mean low water. In that case, the Town worked very closely and cooperatively with the FWS culminating in the decision by the FWS to permit clamming on Monomoy's tidal flats.

It is unfortunate the FWS did not engage the Town in a similar cooperative manner earlier in the planning process as an important stakeholder and team member to address the FWS concerns relative to certain fishing activities and gear methodologies. Instead, the Town was simply informed about these concerns through the CCP/EIS, which proposes comprehensive bans of historical and traditional fisheries without a valid scientific basis to do so.

## **V. Priority Issues Common to Alternatives B and C**

Appendix D of the CCP/EIS includes Findings of Appropriateness and Compatibility Determinations for uses and activities under Alternatives B and C. The suite of uses and activities considered is extensive, while the analysis of impacts is limited. As the Town has not had an opportunity to review these proposals with FWS, it is difficult to assess their full impact on the Refuge and on the local community. What is clear is that some of these will require cooperation of, if not the permission from, the Town; others will require additional funding and/or additional FWS staffing. Uncertainty with future FWS budgets may result in the lack of timely implementation for some proposals.

Included below is a list of the potential issues which the Town feels are worthy of future discussion and review; these can generally be grouped into the following categories:

### **Changes to Refuge Infrastructure and Operations**

- Development of a new visitor center near Main Street, Chatham, or in Harwich, including parking and shuttle service
- Additional directional and informational signage throughout the area
- Acquisition of additional parking lots on Stage Island for FWS use only
- Exploration of off-site shuttle service for refuge visitors
- Increased FWS staffing for refuge, and accommodations for increased staff levels
- New dockage, marine equipment/boat storage, and parking facilities
- Exploration of a bike/pedestrian path on causeway

- Access refuge properties through existing rights-of-way on Tisquantum Rd., Wikis Rd., and Stage Harbor Rd.
- Proposed wind turbine at Headquarters
- Requirement of a competitive, private concession to provide ferry access, guide service, kayak rentals, and other services

#### Access and Public Use of Refuge

- Ban on “organized” picnicking
- Ban on pets or dogs on any refuge lands
- Ban on kite-boarding within all DOT waters
- Begin daytime paid parking at Headquarters from June 1 to September 15
- Phase out of non-FWS parking and dinghy storage on Stage Harbor Lot 7b
- New permitting requirements for commercial filming and photography, which will only be allowed if it is of direct benefit to the refuge or FWS
- New permitting requirements for private commercial guide services accessing waters and Refuge lands
- With help of FAA, raise pilot awareness of 2,000 ft ceiling restriction for aircraft
- The continued exceptions of Inward Point and Power Hole as designated non-Wilderness
- Open approximately 40% of the Refuge for seasonal waterfowl hunting

#### Other Water Related Activities

- Reinstall buoys demarking the Declaration of Taking boundary
- Review all dredging and disposal proposals in open waters
- Ban all moorings within Declaration of Taking waters
- Consideration of dredged material reuse in non-Wilderness areas
- Evaluation of “no-anchoring zones”

Although more information and discussion with the FWS is needed before the Town can fully assess these proposals, provided below are preliminary views on some of the priority issues.

#### a. Changes to Refuge Infrastructure and Operations

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.

#### b. Access and Public Use of Refuge

The CPP/EIS includes findings of appropriateness for recreational activities on the Refuge, including the portion of Town owned Nauset/South Beach annexed by the FWS. While the Town agrees with some of the new findings, a number of other findings restrict or prohibit activities enjoyed by local residents and visitors that were previously allowed within the Refuge for decades without negative impact.

Town-owned Nauset/South Beach is currently regulated by the Town’s Park and Recreation Commission in accordance with the Town’s Beach and Park Rules and Regulations. The Town has worked hard to develop comprehensive and sensible regulations while providing for the effective enforcement of those regulations. We are committed to ensuring the safety of the general public as well as the protection and conservation of wildlife resources in and around the Refuge. This set of rules and regulations has been

used to successfully regulate all Town owned beaches. Virtually all of the recreational activities addressed in the CCP/EIS are already regulated by the Town’s Beach and Park Rules and Regulations (See Appendix B) and enforced by Town officials and law enforcement personnel. The Town does not agree with FWS findings in this area as they are duplicative of Town restrictions in many cases and would require costly infrastructure and staff to implement and enforce. As is evident in these comments, the Town is quite proud of its successful beach management program. Consequently, the Town views the proposed restrictions on Nauset/South Beach as redundant, costly, and unnecessary.

Provided below are more detailed comments on the Town’s position regarding certain prohibited activities proposed in Alternatives B and C.

#### FWS Position on Beach Use

The FWS has found that beach sports—volleyball, football, soccer, Frisbee, baseball, surfing, skim boarding, kite related activities, etc—grilling, and the use of shade tents are not appropriate uses within the Monomoy National Wildlife Refuge.<sup>xciii</sup> The FWS is concerned these activities will divert resources away from the priority public uses and from the FWS responsibilities to protect and manage the flora and fauna of the Refuge. Although the CCP/EIS does not cite any peer reviewed literature to support such conclusions, the FWS states that the defined beach sports and games can disturb wildlife; that grilling can result in food waste that might then increase the number of gulls or mammalian predators; that shade tents when used in the designated wilderness area detract from the wilderness character.<sup>xciv</sup>

#### Town of Chatham Position

The Town asserts that sports, games, and kite related activities—defined in the CCP/EIS as kite flying, kite surfing, and kite boarding—should continue in designated areas and times, as they are currently regulated by the Town’s Beach and Park Rules and Regulations. These activities have been conducted for decades with no evident detriment to Refuge resources.

The Town also maintains that grilling, which uses charcoal or gas units, should be allowed to continue as defined in the Town Beach and Park Rules and Regulations. Grilling can also be viewed as consistent with the FWS’s views on organized picnicking as outlined in the CCP/EIS, which stipulates that visitors who bring food and drink on the Refuge must adhere to a “leave no trace, carry-in-carry-out” policy in which “all food containers, bottles, and other waste and refuse must be taken out”.<sup>xcv</sup>

#### FWS Position on Bicycling

The FWS has determined that bicycling is not an appropriate use for Monomoy NWR. Although there is no cited literature to support the conclusions found in the CCP/EIS, the FWS asserts bicycling can disrupt refuge visitors, migratory birds, and other wildlife found on the Refuge.<sup>xcvi</sup>

#### Town of Chatham Position

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.

### FWS Position on Camping

The FWS has determined camping is an inappropriate use for the Refuge as it would divert “existing and future resources from accomplishing priority Refuge tasks”.<sup>xcvii</sup> The CCP/EIS also concludes camping presents “unacceptable levels of risk” to Refuge plant and wildlife, and could potentially cause conflict with other Refuge patrons.<sup>xcviii</sup>

### Town of Chatham Position

The Town concurs that camping is not an appropriate activity within the Refuge; camping on beaches is also already prohibited by the Town’s Beach and Parks Rules and Regulations.

### FWS Position on Open Fires

In the CCP/EIS, FWS concludes that fires are not an appropriate Refuge activity and are not necessary with respect to any of the FWS approved public uses.<sup>xcix</sup> Fires can also disturb nesting and staging migratory bird species that utilize the Refuge’s resources. Furthermore, the risk that comes with fires is considered too great to be acceptable.<sup>c</sup>

### Town of Chatham Position

The Town concurs that fires are not an appropriate activity for the Refuge. The Town already prohibits open fires on Town beaches under the Town’s Beach and Park Rules and Regulations.

### FWS Position on Fireworks

The CCP/EIS asserts fireworks are not an appropriate use of the Refuge and pose “significant impacts to wildlife and habitat, especially during the summer and early fall”.<sup>ci</sup> Furthermore, the CCP/EIS states fireworks pose a public safety risk that could cause damage or injury to the flora and fauna of the Refuge, as well as to Refuge visitors.<sup>cii</sup>

### Town of Chatham Position

The Town agrees that fireworks are not an appropriate activity for the Refuge. Not only is this activity prohibited by the Town’s Beach and Park and Rules and Regulations, it is also illegal to possess or use fireworks under State law.

### FWS Position on Jet Skiing/Personal Watercraft

The CCP/EIS states the use of personal watercraft, defined as “small vessels that use an inboard motor to power a water jet pump as the primary source of power,” is not an appropriate activity for the Refuge.<sup>ciii</sup> Although the CCP/EIS lacks any supporting literature on this issue, the FWS states the use of personal watercraft can disrupt migratory birds, including their habitat and food resources.<sup>civ</sup>

### Town of Chatham Position

The Town of Chatham agrees that jet skiing and use of other personal watercraft is not an appropriate activity; jet skiing is also prohibited by Town of Chatham Bylaw 265-7.H. (5) and 265-7.H. (6).

### FWS Position on Recreational Over-Sand Vehicle Use

In the CCP/EIS the FWS concludes that the use of over-sand vehicles (OSVs) is not an appropriate activity for the Refuge and is furthermore not consistent with two Executive Orders concerning national wildlife refuge safety with respect to OSVs.<sup>cv</sup>

### Town of Chatham Position

The Town agrees the use of OSVs is not appropriate within the Monomoy NWR; this activity is also prohibited by the Town's Beach and Parks Rules and Regulations.

### FWS Position on Pets

In the CCP/EIS the FWS asserts the presence of pets is not appropriate for Monomoy NWR. Currently leashed pets are only allowed on the Morris Island portion of the Refuge. The CCP/EIS maintains the presence of domesticated dogs can disrupt Refuge wildlife, including migratory bird species.<sup>cvi</sup> Consequently the CCP/EIS proposed to ban pets throughout all of the Refuge.

### Town of Chatham Position

The Town has 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.

### FWS Position on Organized Picnicking

Although the FWS does not encourage picnicking, the Service understands that it occurs "incidentally to the priority public uses".<sup>cvii</sup> The 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.<sup>cviii</sup>

### Town of Chatham Position

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".<sup>cx</sup> 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.

### FWS Position on Hiking, Walking and Jogging

Although the CCP/EIS states that jogging might be more likely to disturb birds found on the Refuge than slow moving activities,<sup>cx</sup> hiking, walking and jogging were later found to be appropriate uses for

Monomoy National Wildlife Refuge.<sup>cxii</sup> The CCP/EIS asserts that hiking, walking and jogging are believed to have the same impacts on the Refuge and its wildlife as other primary public uses.<sup>cxii</sup>

#### Town of Chatham Position

The Town agrees jogging is a compatible use for the Refuge, and has been for many decades. This activity, along with hiking and walking, is low impact and should not be constricted or prohibited.

#### FWS Position on Kite-Boarding

The CPP/EIS asserts kite-boarding/kite-surfing—a “surface water sport that has been described as combining wakeboarding, windsurfing, surfing, paragliding, and gymnastics into one extreme sport”<sup>cxiii</sup>—is not an appropriate activity for the Refuge due to reasons of human safety and protection of nesting birds in the area. According to the CCP/EIS Monomoy NWR staff has seen an increase in kite-boarding since 2006; the CCP/EIS also cites observational, rather than empirical, data with respect to the impacts kite-boarding may have on nesting migratory bird species.

#### Town of Chatham Position

The Town recognizes kite-boarding as a growing recreational activity and is considering steps to regulate it in both the Town Beach and Park Rules and Regulations and Waterways bylaws. The Town further asserts that the sources included in the CCP/EIS to defend the proposed prohibition are insufficient; the two citations used as justification are either outdated or not empirical. Until strong peer reviewed research is conducted and more significant conclusions reached, the Town contends kite-boarding should continue to be regulated under current or future Town rules and regulations.

#### FWS Position on Commercial Tours, Ferry Service, Guided Trips, and Outfitting

Commercial tours and guided trips are designated as appropriate Refuge activities under the CCP/EIS under a new special permitting structure. The CCP/EIS states that special use permits and concession permits will ensure Refuge resources are not significantly impacted, and that this additional permit requirement will result in minimal administrative requirements and no additional facilities.<sup>cxiv</sup>

#### Town of Chatham Position

Contrary to what is included in the CCP/EIS, the Town contends the current policy under which these services are allowed is very limited; currently only one commercial provider is able to access the Refuge for guided tours. Having only a single vendor for these services presents a hardship to the public who may not be able to secure a spot on a tour given the limited space and schedule of the existing provider or any new single provider that may be selected in the future. Unless additional permits are allowed, commercial opportunities for Chatham area businesses will continue to be limited, as well as any future businesses which may wish to offer guided trips on the Refuge. The Town recommends FWS change its policy to allow for multiple service providers.

#### FWS Position on Commercial Wildlife and Landscape Filming and Photography

Commercial filming and photography is deemed as an appropriate Refuge activity under the CCP/EIS under special permit only.<sup>cxv</sup>

### Town of Chatham Position

Regulating commercial photography under the proposed permitting structure is over-burdensome and too general to be effective. There is a wide range of activities that fall under the umbrella of commercial wildlife photography and filming; ranging from freelance photography to film crews working on specific projects. The Town recommends that the proposed regulations be changed to clarify the specific commercial uses that would require permits from those of lesser impact which might be self-guided.

### c. Other Water Related Activities

#### FWS Position on Dredging

The FWS proposed to review and participate in discussions regarding dredging and dredged material placement in areas surrounding Monomoy. The Service also intends to determine the appropriateness of utilizing dredged material to protect habitat from erosion and sea level rise in non-wilderness areas.

#### The Town of Chatham Position

The Town has an extensive dredging and disposal program to maintain safe navigation throughout town-managed coastal waters. The Town has recently been approved for a 10-year dredging and disposal permit (valid through 2024) by various local, state and federal agencies. Prior to approval, this effort underwent extensive regulatory review, including comment from the FWS. The Town welcomes and encourages comments from the FWS during the permitting process on projects that propose dredging or placement of dredged materials in the immediate vicinity of the Monomoy NWR. This right is afforded to any abutter or impacted party to a proposed project. However, as previously discussed the Town does not recognize the right of the FWS to exert jurisdiction over activities within the open water or the submerged lands within the DOT. 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.

#### FWS Position on Moorings and Anchoring Zones

The CCP/EIS proposes to prohibit moorings within the Declaration of Taking in order to protect eelgrass. FWS also intends to evaluate the need for “no-anchoring zones” to minimize disturbance to eelgrass.

#### Town of Chatham Position

The permitting and location assignment of moorings within the Town’s waters are under the jurisdiction of the Harbormaster as provided for in MGL Ch.91 10A, Ch. 102, and Chapter 265 of Chatham’s Waterways Bylaws. The temporary anchoring of vessels is also under the jurisdiction of the Harbormaster as codified in MGL Ch.102 and Chapter 265 of the Waterways Bylaws. In addition, the Town follows guidance contained within the South Coastal Harbor Management Plan; a state approved Harbor Management Plan. This plan places an emphasis on resource protection and includes

recommendations for proper mooring management, placement, and tackle use within the waters in the vicinity of Monomoy NWR.

Accordingly, the Town does not support the proposed outright prohibition of mooring placement within the waters of the DOT. There are currently no mooring permits issued for the waters defined by the exterior limits of the DOT, and it is not anticipated that the need for moorings will arise in the near future within that zone. Regardless, the Town reserves the right to consider the placement of moorings within this area in the future if an appropriate need and use are identified. Eelgrass beds can be properly and effectively protected from moorings using new technologies that minimize or eliminate the likelihood of mooring tackle impacting eelgrass meadows and benthic habitat. Furthermore, there are many locations devoid of eelgrass where mooring placement would result in no impacts to this resource. Should there ever be a need for public moorings within the DOT the Harbormaster would carefully review the proposed mooring placement and mooring tackle to ensure that the placement and tackle used minimize any potential impacts to sensitive habitat.

## **VI. NEPA Assessment of FWS Step Down Plans**

The CCP/EIS provides great detail on the Monomoy NWR physical and biological environment while providing scant information about certain fundamental components of FWS's regulatory plans going forward. Instead, the CCP/EIS states these regulatory plans will be developed using a step-down management process. While the FWS has authority to employ step-down management planning, it cannot utilize this process to avoid complying with the Administrative Procedure Act (APA) or the National Environmental Policy Act (NEPA). The former establishes procedural requirements to ensure adequate public notice and comment, and the latter requires FWS to take a "hard look at environmental consequences" of its actions.<sup>cxvi</sup>

The CCP/EIS states that the FWS will prepare ten step-down management plans, although in certain instances, these are not promised until a full five to seven years after publication of the final CCP/EIS. These promised plans include the following:

- The Annual Habitat Work Plan
- The Inventory and Monitoring Plan, within two years
- The Hunt Plan, within two years
- The Fishing Plan, within two years
- The Wilderness Stewardship Plan, within three years
- The Integrated Pest Management Plan, within four years
- The Visitor Services Plan, within five years
- The Avian Disease Contingency Plan, within five years
- The Sign Plan, within five years
- The Cultural Resources Management Plan, within seven years.

The Town is concerned that most of the step-down plans are common to all CCP/EIS Alternatives, indicating that a range of options has not been considered and there has been no "hard look" at, or meaningful opportunity for, public input on these actions.

In general, NEPA compliance with step-down management plans is determined by whether the plans are properly tiered to the Environmental Impact Statement (EIS).<sup>cxvii</sup> Tiered analyses are viewed as a whole

to determine whether they address all the impacts of an action. However, tiering does not eliminate the EIS requirement when a proposed project significantly affects the environment. Rather, an agency must prepare a new EIS to evaluate significant issues that arise during implementation of its management program. The FWS policy for step-down plans confirms that such plans “should include public involvement and [NEPA] compliance documentation, as appropriate”.<sup>cxviii</sup> When management plans are not available for inclusion in a CCP/EIS, the larger document includes notice that the plans are forthcoming. Preparation of compatibility determinations is required “[f]or public use plans or other step-down management plans dealing with proposed uses of the Refuge,”<sup>cxix</sup> even when the plans are appended to the CCP/EIS at a later date. Fundamentally, the cumulative effects of all management actions, including those adopted through later tiered decisions must be adequately analyzed.

While the CCP/EIS generally follows this prescribed format, it 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. Rather, the document generally states several times that additional NEPA analysis may be required for step-down plans and adaptive management, depending upon what management actions are taken.<sup>cxx</sup> The CCP/EIS generally describes all step-down plans it authorizes and lists some of the considerations involved in developing these plans,<sup>cxxi</sup> but this in no way provides the level of detail as to what the FWS will need to consider to develop and implement these plans. This is no surprise as the authors of the CCP/EIS would not be able to predict what the FWS intends to do in future years.

Regardless, the FWS proposes to exclude the following broad management actions from further public input and NEPA analysis, claiming these issues have already been adequately discussed and analyzed: (i) development of the habitat management plan; (ii) development of the inventory and monitoring plan; (iii) expanding *or reducing* the Refuge’s priority public use program, such as by allowing waterfowl hunting; (iv) small construction improvement projects, such as expanding refuge headquarters and the visitor contact station; (v) operations and management of existing infrastructure and facilities; (vi) law enforcement activities; (vii) control of invasive plants; and (viii) conducting a predator management program.<sup>cxixii</sup> On the other hand, the FWS commits to undertaking additional NEPA analyses in three narrow, select instances: (i) allowing deer hunting; (ii) new building construction; and (iii) installing a wind turbine.<sup>cxixiii</sup> While certain of the excluded actions may in fact be routine, others—such as habitat management, changes in allowable priority uses, and construction projects and visitor accommodations on the “mainland,”—are clearly not.

For example, the Habitat Management Plan (HMP) provides guidance for selecting among management strategies, methods of treatment, timing for actions, and indices for success.<sup>cxixiv</sup> These are arguably among the most important activities conducted in the Refuge, and therefore may result in among the greatest environmental impacts. The FWS acknowledges this fact by stating that the follow-on annual habitat work plan and inventory and monitoring plan are the highest priority of the step-down plans.<sup>cxixv</sup> In light of the importance of these activities, the CCP/EIS states that sections of the HMP “that require public review are presented within this document and will be incorporated as an appendix in the final version of the CCP”.<sup>cxixvi</sup> Unfortunately, the CCP/EIS contains no further discussion of the content of the HMP, the scientific studies upon which it will be based, or the potential range of management actions. The only mention of its content is contained in the section of the document that excludes the HMP from further NEPA review, where it states the HMP will include beach shoreline, dune grassland, and wetlands habitat management programs.<sup>cxixvii</sup> 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 FWS treatment of the annual habitat work plan in the CCP/EIS is similarly flawed. Such a plan “details incremental (or annual) tasks in support of goals and objectives” and uses the information collected through management activities “to help select the management strategy or strategies with the most positive effect on refuge resources as a whole”.<sup>cxxxviii</sup> Because of the adaptive nature of these strategies, they cannot be described in the CCP/EIS at this time, even if the document contained an attempt to do so. In light of the fact that the CCP/EIS is not expected to be revised for fifteen years, it is a near certainty that advances in science and management will lead to far different work plans than can be anticipated at this time. The CCP/EIS provides the FWS with inappropriate discretion to select any plans, at any time, without additional review, rather than providing for required additional public input and NEPA analyses for these plans as they evolve.

Equally unclear is whether the visitor service and wilderness stewardship step-down plans will be subject to further NEPA review, even though both have the potential to include significant actions. The former will develop strategies and actions to improve visitor services, which could include transportation alternatives or other activities that may be long-range. From a narrow FWS perspective, these actions may only require increased staffing and funding,<sup>cxxxix</sup> but they may well produce fundamental changes to the Quitneset neighborhood and the greater Chatham community. The latter will “provide detailed, specific, and measurable stewardship strategies and implementation schedules,” and will describe “appropriate and compatible uses and associated determinations”.<sup>cxxx</sup> Those actions are undoubtedly substantive in nature, and must receive the appropriate analysis and public comment opportunity required by NEPA. However, there is no substantive discussion of either the visitor plan or the wilderness stewardship plan in the CCP/EIS, and no FWS commitment that it will ever be provided. Other step-down plans listed in the CCP/EIS similarly fail to meet NEPA review requirements. In many cases, the FWS relies on existing, forthcoming, or potentially forthcoming compatibility determinations (CDs) to make major management decisions or to identify management changes to come. The CCP/EIS has already updated previous refuge compatibility determinations and found some activities that were previously determined to be compatible are now incompatible “due to changes in refuge wildlife, habitat, policy, or other aspects of the use”.<sup>cxxxii</sup> Many of these CDs relating to important issues provide far too little information to satisfy NEPA requirements.

The fishing plan is of particular concern to the Town. While the CCP/EIS contains CDs for several types of fishing, with the exception of non-mechanized harvest of shellfish—which contains an extensively detailed and refuge-specific discussion—the included CDs are so limited in their scientific analyses that they fail NEPA’s “hard look” standard. These CDs also do not consider options that could accommodate reasonable uses or reasonable modifications of uses to preclude an incompatibility determination. For example, the main justification for disapproving the CD for fisheries harvest using bottom tending gear is that such gear allegedly damages eelgrass beds. No alternative was considered, however, that allows for such harvest outside of areas with eelgrass. Further, while waterfowl hunting is determined to be a compatible use, neither the CCP/EIS nor the CD discuss in any detail how that new activity will be managed.<sup>cxxxii</sup> The CDs for licensing of guides and integrated pest management are additional examples where the CCP/EIS provides very basic guidelines for future management choices, but no actual management alternatives for public comment.

Lastly, the failure of FWS to adequately describe management alternatives and the over-reliance on future step-down plans prevents a full analysis of the cumulative impacts of management actions as required by NEPA. With the large number of step-down plans and the wide range of management measures that are expected to be developed after the CCP/EIS is finalized, there is no way for the Town

or the public to anticipate what actions will actually be taken over the course of fifteen years or evaluate their impacts.

## **VII. Conclusion**

The Town of Chatham appreciates the opportunity to provide these detailed comments on the CCP/EIS. As is evident from our comments, the Town vigorously disagrees with the FWS position on several significant issues including the Eastern boundary and the regulation and jurisdiction over the open waters and submerged lands within the DOT. We have provided justification as to why the Town opposes the prohibition and/or limitation of certain activities historically conducted within the Refuge. With regards to the regulation of fishing and shellfishing, we encourage FWS to take a science-based approach, using science specifically conducted on local fishing methods and in local fishing grounds. We have encouraged FWS to take a hard look at how successful the Town of Chatham has been in managing our local fisheries. As far as the issue of NEPA compliance, these comments identify the deficiencies within the CCP/EIS and where more analysis is needed. Where the Town agrees with the FWS, we have identified those areas as well.

As was stated in the introduction, the Town seeks to build on our past history of collaboration with the FWS as we move forward to work through these issues with the goal of arriving at mutually beneficial outcomes. In this regard it may be most productive to begin with addressing the issues of management and uses within the Refuge and open waters before tackling the more difficult issues of ownership and boundaries.

In the coming months the Town of Chatham looks forward to working with the FWS on these difficult issues. We stand ready to provide any information, to attend any meeting and to make all our resources available to FWS in a sincere effort to resolve our differences. Ultimately this may not be possible, but from our perspective the stakes are too high, the consequences too great for us not to try to do so. The residents of the Town of Chatham deserve no less.

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- <sup>v</sup> Pub. L. 91-504, 84 Stat. 1105.
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- <sup>xxvi</sup> FWS, *Monomoy National Wildlife Refuge Draft CCP/EIS, Volume 1*. April 2014, page 2-100.
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- <sup>xxx</sup> 43 C.F.R. §46.100(a)
- <sup>xxxi</sup> 40 C.F.R. § 1508.27.
- <sup>xxxii</sup> FWS, *Monomoy National Wildlife Refuge Draft CCP/EIS, Volume 1*. April 2014, page 3-15.
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- <sup>lix</sup> Commonwealth of Massachusetts, Massachusetts General Laws, Part 1, Title XIX, Chapter 130, Section 52.
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<sup>xcvii</sup> FWS, *Monomoy National Wildlife Refuge Draft CCP/EIS, Volume 2*. April 2014, page D-12.

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<sup>xcix</sup> FWS, *Monomoy National Wildlife Refuge Draft CCP/EIS, Volume 2*. April 2014, page D-14.

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**Appendix A: Scientific Review of Draft CCP/EIS Supporting References Regarding  
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## Introduction

This report provides a science-based review and assessment of statements contained in the Draft Comprehensive Conservation Plan/Environmental Impact Statement (CCP/EIS), and the literature cited by the U.S. Fish and Wildlife Service (FWS), justifying the ban on traditional fishing practices using bottom disturbing gear as well as mussel harvesting. However, after reviewing the scientific information provided by the FWS to justify its conclusions, the Town asserts that the supporting documentation used by the FWS is outdated, insufficient, and, in some instances, uses inappropriate comparisons between fishing gear types and areas fished. The potential for bottom fishing gear to damage or remove emergent epiflora and epifauna (e.g. seagrasses and hydroids), alter physical structures (e.g. bottom topography), and disturb benthic biogeochemical processes, particularly in offshore waters, is well established (see NEFMC 2011). However, many studies, including recent work in the Northwest Atlantic, make clear that these potential adverse effects are not universal (e.g. Stokesbury and Harris 2006); are strongly dependent on local processes (Harris et al. 2014) and; despite recent popular attention, should not be assumed when evaluating the risks and benefits of fishing (NEFMC 2011). Furthermore, the nature of fishing effects studies present substantial experimental design challenges and therefore only support very limited inference beyond the sites actually sampled. In other words, it would be scientifically inappropriate to extrapolate the results of certain studies and apply those results to systems not relevant to the studied sites. Overall, this review reveals there is insufficient scientific evidence within the CCP/EIS to support a complete ban on mussel harvesting and bottom disturbing fishing gear and practices.

### **Section 1. Review and Analysis of Statements Made in the CCP/EIS**

This section includes a review and analysis of statements both in the CCP/EIS and in the accompanying Findings of Appropriateness that justify the proposed ban on bottom disturbing fishing gear and techniques. The majority of these statements are found in Appendix D.

#### *1.1 Statements made in the CCP/EIS justifying the proposed ban on bottom disturbing fishing gear and techniques within the DOT.*

**Statement 1, Volume 1, Chapter 2, page 2-33:** “Even deeper water SAV beds are vulnerable to damage from channel maintenance, beach renourishment, or fishing trawls or dredges.”

This statement emphasizes the many threats anthropomorphic influences pose to deep water submerged aquatic vegetation beds; however, it has no accompanying citation or scientific justification.

**Statement 2, Volume 1, Chapter 3, page 3-114:** “Shellfishing can also alter benthic communities or impose direct competition for shorebirds that feed on target organisms. For example, mechanical harvesting of cockles in South Wales resulted in their decline, and although shorebird foraging rates increased immediately following harvesting as birds took advantage of newly exposed prey, subsequent declines of bird activity lasted 50 days for Eurasian oystercatchers and 80 days for Eurasian curlews and various gull species (Ferns et al. 2000).”

Statement 2 indicates that mechanical harvesting of cockles in South Wales altered benthic communities and competition for shorebirds, as seen by the decline in bird activity in harvested areas. This statement should be revisited based on the authors’ interpretation of the data. First, the bird counts were made using bird tracks, which by the author’s estimate have a  $R^2$  value of 0.79 and are not 100% accurate at

predicting actual bird counts. Second, while there were significant differences in bird counts at sites between sampling days, there were also differences at reference sites. This would indicate an influence outside of the treatment that the author does not consider. Additionally, all bird species did not follow the same pattern of decrease on the harvested sites. The prevalence of some species increased as a result, and not all the differences occurred during the same period. All of these points bring into question the authors' conclusion that harvesting directly altered bird foraging habits. Statement 2 should therefore be disregarded due to the lack of appropriate supporting data.

**Statement 3, Volume 1, Page 4-43:** "Effects of sediment re-suspension can include reduced light available for photosynthesis, burial or smothering of benthic biota and spawning areas when anoxic conditions result, and negative effects on feeding and metabolic rates of intertidal organisms (Johnson 2002)".

This statement lists the multiple effects that sediment re-suspension can have on marine species, but it should be disregarded due to a lack of proper support. Johnson (2002) is simply a literature review of literature on the effects of bottom disturbing gear and does not constitute primary literature. The statement needs to be supported with the scientific literature that investigated the themes in Statement 3. Since it is not, Statement 3 does not present sufficient justification for banning bottom gear.

**Statement 4, Volume 1, Page 4-59** "Direct and indirect mortality induced by shellfish harvest, recruitment, reproductive failures that delay population recovery, and shifts in species diversity toward smaller, short-lived and more mobile species can reduce the abundance of preferred prey items for higher trophic level predators such as amphipods, copepods, echinoderms, gastropods, crabs, fish, or birds (Peterson and Estes in press, Piersma et al. 2001, Verhulst et al. 2004)."

Statement 4 proposes shellfish harvesting as one of the many causes of reduction in preferred prey items for higher trophic levels. This statement should be omitted due to lack of appropriate supporting literature. Studies by Piersma et al. (2001) and Verhulst et al. (2004) both suffer from poor experimental design. Piersma et al. (2001) used control sites that were selected by lack of fishing effort, instead of at random, and were significantly different from the start of the experiment. Additionally, this study did not account for anthropogenic changes that may have occurred in the area during the time of the experiment. Without a proper control and with other possible sources of disturbance, any conclusion about the effects of harvesting would be questionable. Verhulst et al. (2004) indicated significant differences in sex and location, but there was no explanation of the inferior condition of males or the reason birds do not simply fly to better locations. These inconsistencies show that declining avian condition cannot be attributed to harvesting, and signify the need for further research to investigate the factors influencing oystercatchers' condition. In summary, Piersma et al. (2001) and Verhulst et al. (2004) come to questionable conclusions and do not address the broad issues that Statement 4 emphasizes. Lastly, Peterson and Estes is another literature review that therefore cannot be cited as primary literature. The information Statement 4 is trying to use in Peterson and Estes as support is attributed to other authors. Without proper supporting literature Statement 4 should be disregarded as justification for the banning of bottom disturbing gear.

### *1.2 A Review of Statements made in the Finding of Appropriateness for Fisheries Harvest Using Bottom Disturbing Gear and Techniques, CCP, Volume 2, D 18-19.*

Ten references cited in Appendix D, pages 18 and 19, which were presented as a scientific argument justifying the banning of bottom disturbing fishing gears in the sub-tidal area, were closely examined.

Three statements with supporting citations constitute the majority of the justification. The structure and scope of these statements fall short of the quality needed to address the important issues at hand. The reliability of the supporting citations could also be called into question due to their design, analysis, and site locations. Without clarification and additional supporting information, the proposed comprehensive ban is unwarranted.

**Statement 1:** “Impacts of hydraulic or mechanical shellfish dredges (such as rakes, plungers, or shovels) on intertidal bottom structure and benthic invertebrates are typically greater and longer lasting than those from hand harvest (Ferns et al. 2000, Piersma et al. 2001, MacKenzie and Pikanowski 2004, Verhulst et al. 2004, Munari et al. 2006, Kraan et al. 2007, and Peterson and Estes in press)”.

It is assumed this statement is describing the comparison of hand harvesting to other “mechanical” techniques in a specific inter-tidal habitat. Statement 1 is both structurally problematic and poorly supported by its citations. The inclusion “such as rakes, plungers, or shovels” does not apply to hydraulic or mechanical techniques, and causes some confusion about what techniques are at issue. The fact that the authors have categorized hand harvesting techniques as hydraulic or mechanical dredges indicates a general lack of familiarity with shellfish harvesting. Additionally, MacKenzie and Pikanowski (2004) and Murari et al. (2006) are studies that focus on sub-tidal habitats and thus cannot support conclusions involving inter-tidal habitats.

The papers referenced above are also the only citations that use handrakes in their experimental design, invalidating the comparison made in the statement. In the experiments of the remaining references, Ferns et al. (2000), Kraan et al. (2007), Peirsma et al. (2001), Verhulst et al. (2004), use mechanical harvesting techniques such as tractor towed dredges and suction dredges, which are not used in the Monomoy fishery. Tractor dredging is described as similar to potato harvesting, a large dredge pulled behind a large tractor which skims off a preset depth of substrate and feeds it into a rotating drum. The smaller items fall between the mesh of the drum while larger marketable cockles are rolled toward a hatch for bagging (Cotter et al. 1996). Ferns et al. (2000) indicated the grinding in the separation drum during harvest was the major source of mortality for benthic organisms; this process is not present in hydraulic or bottom dredging used around Monomoy.

Lastly, Peterson and Estes is a broad synthesis of wide ranging topics that can affect marine environments. Peterson and Estes do not include data or conclusions about bottom dredging of their own in the report. The information Statement 1 is trying to use in Peterson and Estes as support is attributed to other authors. The confusing structure and the lack of support from its citations invalidate the justification of Statement 1.

Further review of the citations themselves also revealed issues with some of the experiments. One such problem found throughout the cited literature is site selection bias; without a proper reference, the possible sources of influence cannot be identified and any conclusions about the effects of harvesting would be speculation, at best. Piersma et al. (2001), Verhulst et al. (2004), and Kraan et al. (2007) suffered from site selection bias and used reference sites that were statistically different from their experimental sites. The experiment’s reference sites were limited to areas un-harvested by fishermen or with the large assumption that: “on average, the only difference between protected and unprotected areas is the possibility to legally harvest shellfish” (Verhulst et al. 2004).

These experiments failed to provide evidence that differences were not already present before harvest and accounted for by other sources of variance. For example, Piersma et al. (2001) mentions extensive

changes taking place during the harvest, but never acknowledges the effects they may have on the benthic community. Piersma et al. (2001):

From 1941, the western edge of the island of Griend has repeatedly been reshaped by various types of breakers and dikes. The last reconstructions were carried out during the summers of 1985 and 1988. A 2.5-km long sand dike was built west and north of the old circular island (Janssen et al. 1994).

The authors attempt to use harvesting as the sole source of change in the benthic communities when other sources of disturbance are present. The paper tries to account for the lack of pre-harvest data by comparing to a nearby site, which only highlights the variability in benthic community in the area.

Some of the experiments cited by Statement 1 suffered from other issues. In Peirsma et al. (2001), some of the analysis uses repeated t-test for comparisons and does not account for the increased chance of making a Type I error, incorrectly rejecting the null hypothesis. MacKenzie and Pikanowki (2004) is a poorly designed experiment with no pre-sampling, low sample size, small adjacent plots, unequal time between sampling, and assumptions about mobile organisms' movement. The conclusion of no treatment effect should be attributed to the poor design, not the actual testing of the treatment effects.

The two papers that involve bird presence, Ferns et al. (2000) and Verhulst et al. (2004), suffer from conflicting assumptions. In Ferns et al. (2000), birds are assumed to be able to detect low prey levels on a scale of  $< 50\text{m}^2$  and avoid such areas. In Verhulst et al. (2004), it is assumed birds ignore lower prey levels and remain in areas on a scale of  $\text{km}^2$ . These assumptions are in conflict and are vital to the conclusions of the papers.

Overall Statement 1 provides insufficient justification for a comprehensive ban on bottom disturbing fishing gear and techniques. The statement itself is confusing, the citations provide little support, and the citations themselves are faulty. Statement 1 should be disregarded.

**Statement 2:** "Depending on the spatial scale involved, changes in bottom topography can have profound effects on benthic infauna (Ray 2005). Dernie et al. (2003) showed that a difference of only 10 centimeters in the amount of material removed during mechanized shellfish harvest from a sand flat in Wales, UK resulted in a substantial decrease in benthic fauna recovery rate. Plots where 20 cm of sediment were removed required 208 days for infaunal community reestablishment, whereas plots with only 10 cm removed recovered in 64 days."

This statement emphasizes the different recovery rates of infaunal community for different depths of removal the bottom sediment on inter-tidal flats. This statement should be questioned as justification for closure because it has been copied verbatim from Ray (2005). Ray (2005) does not support the statement, and the Dernie et al. (2003) experiment suffers from design flaws. First, Ray (2005) is a broad summary of sources of disturbance on benthic infauna in shallow areas with the purpose of advising channel dredging. The conclusion of the Ray (2005) pertains to the idea that little information is available about shallow water estuaries and it may be due to vague language when describing specific water depths. Furthermore, Ray (2005) contains no original information about changes in topography effecting benthic infauna and should not be used as supporting citation for this statement. Lastly, Dernie et al. (2003) does investigate the effects of bottom topography on benthic infauna, but the justification it lends to the broad banning of bottom harvesting is questionable due to the design and

conclusions of their experiment. Dernie et al. (2003) dug out pits in a manner very unlike actual harvesting, then found strong correlations that suggest the water remaining in the pits following sediment removal for the two disturbed treatments may have influenced the time to recovery. The sediment in the plots was completely removed down to 10 to 20 cm allowing water to pool; this is much deeper than the disturbance caused by small 36 inch light weight toothless bay scallop dredges used around Cape Cod. For example, the New Bedford style 15 ft. offshore toothless dredge disturbs sediment 5-9 cm deep and only temporarily re-suspends the sediment, not completely removing it from the site (Mayer et al. 1991). Due to its technical issues, and inappropriate, unresponsive citations Statement 2 should be disregarded as justification for the broad banning of bottom disturbing gear.

**Statement 3:** “Fisheries harvest using bottom disturbing gear and techniques can degrade eelgrass beds through substrate disturbance (Neckles 2005). “

This statement emphasizes the negative effects bottom disturbing gear and techniques can have on eelgrass beds when the fishing disturbs the substrate. The citation supporting this statement should be questioned for appropriateness due to its broad assumptions. The study was investigating the impact of bottom dredges on eelgrass meadows and their subsequent recovery and found significant differences at treatment sites compared to control sites. The study’s first problem was the lack of detail in the description of the dredges; specifically, the author assumes a type of steel frame with a chain-link bag was used. The details of the dredge might have consequence in understanding its impact on eelgrass. Additionally, there are some assumptions within the study that lead to site selection bias. The treatment sites selected were chosen because of their noticeable disturbance patterns. It was first assumed disturbance was caused by dredging, and then analysis found differences between treatment sites and controls. Little information was known about what dredging was occurring, the condition of the sites prior to harvesting, or if there was dredging how the fisherman chose the site. The single citation supporting Statement 3 made such broad assumptions that its conclusions must be called into question; therefore Statement 3 should be disregarded as justification for broad banning of bottom disturbing gear.

In conclusion, there is little valid justification contained in the CCP/EIS for the broad banning of bottom disturbing gear. There are only three clear statements in the report attempting to justify the closure. The statements are confusing, narrow in scope, and supported by inappropriate or questionable citations. With only the information contained in the report, the justification of the broad banning is unsupported.

### *1.3 A Review of Statements Made in the CCP/EIS Finding of Appropriateness for Mussel Harvesting, Volume 2, D 32-33.*

This review examines 4 references cited in Appendix D, pages 31 – 33. These references were presented in the CCP/EIS as supporting literature in the justification of the banning of mussel harvesting in Monomoy NWR. The statements fail as credible justification due to the lack of scientific evidence. In fact, some of the statements have no supporting evidence backing their conclusions; the citations that are provided do not support the statements or have questionable conclusions. Therefore, we conclude the information supplied in the CCP/EIS fails to justify the banning of mussel harvest.

**Statement 1:** “Mussels are an important food source for many migratory birds. We would be providing additional protection for priority wildlife species by not allowing harvest of this species. For example,

blue mussels are the most important food item during the winter for common eiders, a Service focal species, congregating in Nantucket Sound (MA DFG 2006)”.

This statement emphasizes the importance of mussels as a food source for migratory birds, and states that harvest closure would provide an additional buffer of protection for vulnerable species. This statement has inappropriate literature support. The reference (MA DFG 2006) does not provide data or conclusions of its own in the report. Any justification that Statement 1 could draw from MA DFG 2006 should be disregarded without proper information about the original source. The portion of the statement concerning the protection provided by closure has no appropriate supporting citations and therefore Statement 1 should be disregarded.

**Statement 2:** “Mussel spat is one of the most important food items of southward migrating red knots (proposed for listing as a threatened species under the Endangered Species Act) using Cape Cod from July through October (Harrington et al. 2010)”.

This statement identifies mussel spat as one of the most important food sources for southward migrating red knots; however, this point is not supported by literature cited. Harrington et al. (2010) is mostly an observational paper with no statistical analysis on food item choice of red knots. The observational information that is provided in Harrington et al. (2010) concludes knots in the North Bay foraged in habitat where mussel spat was abundant, while knots in the South Bay fed on Gem Clams. The authors do not actually mention knots feeding on mussel spat, simply that they foraged in mussel shoals or in areas where mussel spat was abundant. In conclusion, Statement 2 lacks supporting citations and should be disregarded as justification for the banning of mussel harvesting.

**Statement 3:** “Mussels are also a common food of American oystercatchers, which typically visually sight their prey in slightly submerged shellfish beds (<http://amoywg.org/american-oystercatcher/food-habits/>; accessed March 2013)”.

Statement 3 concludes mussels are a common food source for American oystercatchers, and oystercatchers feed by sight on submerged beds; however, this statement is not supported by the cited material. The American Oystercatcher Working Group’s webpage on the food habits of oystercatchers is a light review of available information on oystercatcher foraging but includes no data or conclusions of its own. The site does reference other papers that list more than 9 possible prey species for oystercatchers, including Hand et al. (2010) which states mussels comprise just 4% of total oystercatcher diet in South Carolina. As there is no information supporting the specific importance of mussels to oystercatcher’s diet, Statement 3 should be disregarded as justification for the banning of mussel harvest due to the lack of provided supporting literature.

**Statement 4:** “The most common harvest techniques for non-subterranean shellfish (such as dragging and mechanical and hydraulic dredging) are so efficient that mussel beds can be depleted very quickly. Dragging can have severe impacts on subtidal habitat structure by removing large areas of vegetation, such as eelgrass (Neckles 2005).”

This statement concludes that harvesting techniques for mussels can quickly deplete beds, and dragging can remove large areas of eelgrass and negatively impact sub-tidal habitat; however, this statement is not supported by the given citation. The portion of the statement about the efficient removal of mussels has no provided supporting citation, nor does Neckles (2005) address this topic. Neckles (2005) investigated the impact of bottom dredges on eelgrass meadows and their subsequent recovery and

found significant differences at treatment sites compared to control sites. The primary issue with this study is a lack of detail in the description of the dredges; for instance, the author merely assumes a type of steel frame with a chain-link bag was used. The details of the dredge might lend understanding to its specific impact on eelgrass. Additionally, there are some assumptions made which lead to site selection bias; the treatment sites selected were chosen because of their noticeable disturbance patterns. It was first assumed the disturbance was caused by dredging and analysis then found differences between treatment sites and controls. Little information was known about if there actually was dredging, and if so, what type of dredging was occurring, the condition of the sites prior to harvesting, or how the fisherman chose the site. In light of these multiple issues, Statement 4 lacks sufficient justification for the banning of mussel harvest.

In conclusion, the four statements analyzed above fail as justification due to the lack of scientific evidence and inappropriate or questionable citations. Therefore, the CCP/EIS does not provide sufficient support for a ban on mussel harvesting in Monomoy NWR.

#### *1.4 Insufficient Scientific Justification for Proposed Ban on Bottom Disturbing Fishing Gear and Techniques*

Bottom dredging can disturb benthic communities, but the permanence and magnitude of the impact is subject to the characteristics of the system and fisheries practices (Dayton et al. 1995; Jennings and Kaiser 1998; Collie et al. 2000). Community structure and habitat complexity are the two major features that can be altered through dredging fishing practices (Auster et al. 1996; Collie et al. 1997; Kaiser et al. 2002). For example, in gravel substrate of the northern Georges Bank, Collie et al. (1997) found higher species richness in apparently undisturbed areas compared to harvested areas. Additionally, in a study off the coast of Maine, Auster et al. (1996) found altered substrate and biogenic structure when monitoring a site before and after 6 years of dredging. Other studies have found similar results, but the extent of the disturbance is variable and can be influenced by multiple factors (Collie et al. 2000; Kaiser et al. 2006). Most of the studies that observed extensive impacts from dredging were conducted at deep sites with more sensitive substrate such as silt or pebbles (Collie et al. 2000). In sandy, high energy environments supporting more resilient fauna, there is a significantly quicker recovery rate back to “normal” than at silt or gravel sites (Collie et al. 2000; Kaiser et al. 2006). Gear type also influences the level of benthic disturbance; scallop dredges were found to impact the benthic community less than intertidal dredging (bait digging, clam kicking, bait dredging, and clam suction harvesting) (Collie et al. 2000). Thus, truly effective fisheries management should consider the ecological community as well as the fishing gear and methods.

Since there is no literature on the effects of bottom disturbing fishing gear and techniques in the Monomoy area, an assessment of fisheries impacts should use studies conducted in systems with similar characteristics. Monomoy is a shallow, dynamic system, with high energy waves, tides, and currents. The submerged lands around Monomoy Island are recognized to be high-energy sand environments subject to extensive natural disturbance. In this regard, there are likely many similarities to nearby Georges Bank (Harris et al 2012) where significant work has been done on the impacts of fishing gear in the ocean habitat. The bottom substrate around Monomoy Island and large portions of Georges Bank is mostly sand (Poppe et al., 2006; Harris and Stokesbury, 2010), which is more resilient to disturbance than fine silt and organic matter (Schratzberger and Warwick, 1999; Ferns et al. 2000; Collie et al. 2000).

The region’s groundfish fishermen primarily use bottom tending otter trawls to harvest finfish (cod, flounder, haddock etc.) on Georges Bank and Nantucket shoals. Otter trawling has been found to have

some of the lowest impact of bottom-disturbing gear (Collie et al. 2000, Kaiser et al. 2006). Some studies of otter trawling on sandy substrate have shown little to no impact (Drabsch et al. 2001; Gibbs et al. 1980; Hall et al. 1993). Other reports have found significant effects from otter trawls, but the experimental trawls were conducted in areas much deeper than Monomoy (Schwinghamer et al. 1998; Moran and Stephenson, 2000).

New England's scallop fishermen employ large toothless dredges to harvest sea scallops in the offshore waters. A toothless dredge is generally referred to as a New Bedford style dredge. New Bedford dredges can come in a variety of sizes ranging from large offshore ocean dredges (typically 15 feet wide and can weigh up to 1870 kg (Stokesbury, 2006)) to small, lightweight inshore dredges (approximately 24" to 36" across and weighing only 30-50 pounds). The small lightweight bay scallop toothless dredge is the style commonly used in Nantucket Sound and around Monomoy Island for shallow water inshore bay scallop harvesting.

Studies have shown the New Bedford style offshore toothless scallop dredge can impact shallow, sandy habitat, altering both bottom features and species abundance (Auster et al. 1996; Watling et al. 2001). However, differences in species abundance between dredged and non-dredged sites may last less than 6 months, while bottom features normalized after storm events less than one year later (Auster et al. 1996; Watling et al. 2001). Overall, most bottom-disturbing gear deployed in shallow, sandy systems, had minimal impact, primarily due to the inhabiting organisms' adaptation to frequent natural disturbance (tides, waves, storms).

The impact of dredging on avian communities in Monomoy National Wildlife Refuge is a major concern of FWS, but there is evidence that some forms of dredging produce additional prey items and may alter the system to favor avian communities. Connell (1978) proposed the intermediate disturbance hypothesis, which postulates that if a system remains stable for too long, species diversity is lost due to competition. Additionally, if a system is disturbed too often, species diversity is lost due to mortality of slow growing/colonizing organisms. Some studies have reported an initial decrease in benthic biomass after dredging, followed by an increase in select species (Jennings et al. 2001; Duplisea et al. 2002). The species that increase tend to be polychaete worms, opportunistic colonizers well-adapted to disturbance (Jennings et al. 2001; Barry, 1989). Dredging may result in the increase of polychaete abundance providing a major food source for many shore birds (Wilson 1990; Tsipoura and Burger, 1999; Sutherland et al. 2000; Atkinson et al. 2003; Cohen et al. 2008; Cornell Lab of Ornithology [www.allaboutbirds.org](http://www.allaboutbirds.org)). Allowing continued dredging in this area may influence the availability of prey items of some shorebirds.

Little is known about the interaction between fisheries and molluscivore birds. There is evidence correlating shellfish harvest with increased mortality of molluscivore bird species, but many fisheries have found management strategies that ameliorate this relationship (Schmechel, 2002). In areas where there is competition between fisheries and bird species over shellfish, additional stress in the form of inclement winter weather can increase mortality (Camphuysen et al. 1996; Atkinson et al. 2000). Yet, in some areas there are recovering or stable populations of molluscivore birds alongside commercial shellfish harvest (Norris et al. 1998). Stillman et al (2001) found no significant effect of fishing effort on oystercatcher populations in two areas of the United Kingdom as a result of modeling bird-fishery interactions. In some studies, an abundance of prey did not result in decreased bird mortality (Goss-Custard et al. 2004). This suggests that there may be other factors influencing bird mortality and supports the potential for sustainable management of shellfish harvest that prioritizes molluscivore bird survival.

This review revealed relevant scientific information that the FWS may have neglected in their decision to ban bottom disturbing fishing gear and techniques. The literature used by FWS to justify a comprehensive ban failed to include system details that are so critical to understanding the impacts of dredging. Based on this review the impacts of bottom dredging appear to be slight given the characteristics of the Monomoy system (sandy substrate, shallow depths, etc.) and certainly less impactful than alleged by the FWS. There is evidence of impacts on molluscivore birds, but the relationship is still not fully understood (Camphuysen et al. 1996; Atkinson et al. 2000). Management practices in some fisheries seem to have addressed most shorebird issues without banning of bottom dredging fisheries (Schmechel, 2002). In conclusion, this literature review and analysis indicates that the disturbance caused by bottom disturbing fishing gear and techniques in the Monomoy area appear to be significantly less than that alleged by the FWS in the CCP/EIS due to the reliance on outdated, inappropriate and sometimes incorrect studies. Indeed some of the literature reviewed suggested the impacts were minimal and may in fact have positive benefits to certain bird species. However, this finding is only suggestive and far from conclusive. By now it should be obvious that more scientific information on the effects of bottom disturbing gear of the size and type used on Cape Cod in high energy systems like the Monomoy area is needed before a comprehensive ban can be scientifically justified and supported.

## **Section 2. Analysis of Literature Cited in the CCP/EIS**

### **American Oystercatcher Working Group. 2011-12.**

**<http://amoywg.org/american-oystercatcher/food-habits/>; accessed March 2013)**

#### Context of Reference:

As cited: "Mussels are a common food of American oystercatchers as well; they typically visually site these prey in slightly submerged shellfish beds (<http://amoywg.org/american-oystercatcher/food-habits/>; accessed March 2013)."

As cited: "Mussels are also a common food of American oystercatchers, which typically visually sight these prey in slightly submerged shellfish beds (<http://amoywg.org/american-oystercatcher/food-habits/>; accessed March 2013)."

Objective and Overview: The objective of the website is to provide information on the foraging habitats of oystercatchers.

Species: American Oystercatcher (*Haematopus palliatus*)

#### Possible Faults

- This website is a review of some of the available literature on foraging habits of oystercatchers; it contains no original data or conclusions.
- The citation is not in the Bibliography for this section.

**Dernie, K. M., Kaiser, M. J., Richardson, E. A., and Warwick, R. M. 2003. Recovery of soft sediment communities and habitats following physical disturbance, *Journal of Experimental Marine Biology and Ecology* (285-286), 415-434.**

### Context of Reference:

As cited: "Dernie et al. (2003) showed that a difference of only 10 centimeters in the amount of material removed during mechanized shellfish harvest from a sand flat in Wales, UK resulted in a substantial decrease in benthic fauna recovery rate. Plots where 20 cm of sediment were removed required 208 days for infaunal community reestablishment, whereas plots with only 10 cm removed recovered in 64 days."

Objective and Overview: The study investigated the possibility that physical parameters could be used as surrogates for biological recovery when quantifying the response of benthic assemblages to physical disturbances. The site of the experiment was in Menai Strait, southeast of Anglesey, United Kingdom, on intertidal sand flats. The experiment compared 3 treatments: 10 cm of sediment removed from a plot, 20 cm of sediment removed from a plot, and no disturbance. The two disturbance treatments were designed to recreate disruption from hydraulic suction dredging and tractor dredging. The three treatments each had five replicates and were sampled on days 1,4,8,16,32, 64, and then every two months until there was no significant difference in community between undisturbed and disturbed sites.

System Energy: Menai Strait ranges from 500 meters to 7.5 km in width and experiences low wave energy and strong tidal currents.

Bottom Type: Sediment at the sites consist of 90% 125-250  $\mu\text{m}$  sand and 1% silt and clay, with occasional 5% cockle shell debris.

Analysis: In most species a 99% probability of detecting a 10% change in population.

Species: *Bathyporeia sarsi* (mobile crustea), *Carcinus maenas* (mobile crustea), *Cerastoderma edule*, *Corophium arenarium* (mobile crustea), *Hydrobia ulvae* (mobile aquatic snail), *Pygospio elegans*, *Scoloplos armiger*, *Tubificoides benedii*,

Results / Conclusion: In plots where 10 cm of sediment was removed the faunal community recovered within 64 days. In plots where 20 cm of sediment was removed recovery occurred within 208 days. Though there were no significant differences in community between the shallow and deep disturbed plots throughout the experiment. There were no significant differences between undisturbed and disturbed plots for any of the sediment fractions or organic content at any time during the experiment. The depth of the water remaining in the disturbed plots decreased with time and correlated ( $R = .70$ ) with temporal changes in community.

The project was not successful in establishing a physical parameter for the indexing of biological habitat recovery.

### Possible Faults

- This study was conducted on inter-tidal flats and does not address sub-tidal habitat.
- The report's data suggest that the water remaining in the pits from removing sediment for the two disturbed treatments may have influenced the time to recovery. The sediment in the plots was completely removed down to 10 or 20 cm; this is deeper than a New Bedford toothless dredge usually digs. The New Bedford toothless dredge digs 2-3 cm and only re-suspends the sediment, not completely remove it from the site.

**Ferns, P.N., D.M. Rostron, and H.Y. Siman. 2000. Effects of mechanical cockle harvesting on intertidal communities. Journal of Applied Ecology 37: 464-474.**

Context of Reference:

As cited: "Shellfishing can also alter benthic communities or impose direct competition for shorebirds that feed on target organisms. For example, mechanical harvesting of cockles in South Wales resulted in their decline, and although shorebird foraging rates increased immediately following harvesting as birds took advantage of newly exposed prey, subsequent declines of bird activity lasted 50 days for Eurasian oystercatchers and 80 days for Eurasian curlews and various sea gull species (Ferns et al. 2000)."

As cited: "Impacts of hydraulic or mechanical shellfish dredges (such as rakes, plungers, or shovels) on intertidal bottom structure and benthic invertebrates are typically greater and longer lasting than those from hand harvest (Ferns et al. 2000, Piersma et al. 2001, MacKenzie and Pikanowski 2004, Verhulst et al. 2004, Munari et al. 2006, Kraan et al. 2007, and Peterson and Estes in press)."

Objective and Overview: The study investigated the effects of tractor-towed cockle harvest on intertidal communities and shorebird activity in Burry Inlet, South Wales. The experiment compared 4 treatments: tractor-towed harvest and undisturbed on muddy substrate, and tractor-towed harvest and undisturbed on sandy substrate. Each treatment was replicated in 6 plots in each substrate. Each site was sampled before and after harvesting on day 0, and then sampled again on day 15 and 86. The muddy site received an additional sampling on day 174.

System Energy: The estuary covers an area 42 km<sup>2</sup>, has a mean spring tidal range of 8 m, and has a variable fetch (Nio et al. 2009).

Bottom type

Muddy sites' substrate consisted mainly of particles of two sizes, 125 µm and approximately 3 µm. The sandy sites' substrate consisted mainly of particles of 125 µm.

Analysis: Data was indexed for species dominance by Simpson's index and equitability by Shannon evenness. Indices were compared using a Student's t-test. The effects of harvesting, time, and plot on community was determined by ANOVA.

Species: Aquatic: *Scoloplos armiger*, *Pygospio elegans* (tube dwelling), *Hydrobia ulvae*, *Nephtys hombergi*, *Bathyporeia pilosa*, *Cerastoderma edule*, *Lanice conchilega*  
Shorebirds: *Numenius arquata* (curlew), *Haematopus ostralegus* (oystercatcher), *Calidris alpina* (dunlin), Black-headed gull, common gull

Results / Conclusion: The muddy site community had more sedentary species, while the sand site had more mobile species. There was significant change in species richness, dominance, and equitability when comparing pre and post-harvest for both sand and muddy sites. Some invertebrate densities remained low for the duration of the experiment in the muddy sites (174 days), while most recovered after 59 days. High population density recovered in the sand sites in 39 days. After an initial increase in bird activity post-harvest, there was a significant reduction in oystercatchers, curlews, and dunlins on both the sand and muddy sites on days 21 and 45. No significant differences between treatments were detectable 115 days after harvest.

The study did show there was some impact on habitat from bottom Tractor-pulled cockle dredging.

#### Possible Faults

- Study investigated the impacts on intertidal and does not address sub-tidal habitat.
- Sand sites, similar to what is found in Monomoy, were quick to recover.
- The tractor pulled dredges are not used in harvesting near Monomoy. The dredge described in this study is similar to a potato harvester: a large dredge pulled behind a large tractor skims off a preset depth of substrate and feeds it into a rotating drum. The smaller items fall between the mesh of the drum while larger marketable cockles are rolled toward a hatch for bagging (Cotter et al. 1996).
- Paper indicated grinding in the separation drum during harvest is the major source of mortality, which is not present in hydraulic dredging.
- Bird predation is high immediately post-harvest on the exposed flats and could be cause of density decline. Submerged harvesting could decrease impact.
- Shorebird species are hard to identify from prints and non-feeding birds' tracks are indistinguishable from feeding birds.
- Results were mixed for species, date, and sites for bird count differences

**Harrington, B.A., S. Koch, L.K. Niles, and K. Kalasz. 2010b. Red knots with different winter destinations: differential use of an autumn stopover area. *Waterbirds* 33(3): 357- 363.**

#### Context of Reference:

As cited: "Mussel spat is also one of the most important food items for southward migrating red knots (a candidate species) using Cape Cod from July through October (Harrington et al. 2010b)."

As cited: "Mussel spat is one of the most important food items of southward migrating red knots (proposed for listing as a threatened species under the Endangered Species Act) using Cape Cod from July through October (Harrington et al. 2010)."

Objective and Overview: The goal of the study was to investigate habitat utilization between red knots with different winter migration stopover sites. The sites of the research were along the southeastern edge of Cape Cod, Massachusetts (North Pleasant Bay, South Pleasant Bay, North Beach, South Beach, North Monomoy, and South Monomoy). Data collected to identify habitat use included counts, band id, plumage age, stopover time, and foraging behavior.

Species: Red Knots (*Calidris canutus*)

Results/Conclusion: This study was merely observational. Much of the results are the author's observations with no analysis. By Sept. 1 there were significantly more tagged red knots from Florida and the mid-Atlantic shore than the Delaware Bay shore. Before Sept 12 knots in the South Bay had more basic plumage than knots in the North Bay.

### Possible Faults

- The paper is mostly observational and most of its conclusions are not supported by statistical analysis.
- The number of knots observed is very low.

**Johnson, K.A. 2002. A review of national and international literature on the effects of fishing on benthic habitats. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, NOAA Technical memorandum NMFS-F/SPO-57. 77 pp.**

### Context of Reference:

As cited: "Effects of sediment re-suspension can include reduced light available for photosynthesis, burial or smothering of benthic biota and spawning areas when anoxic conditions result, and negative effects on feeding and metabolic rates of intertidal organisms (Johnson 2002)."

Objective and Overview: The report is a summary of the existing information on the effects of bottom disturbing fishing gear on benthic habitat. The purpose of the document is to provide reference for Fisheries Management Councils in assessing the impacts of fisheries. The document summarizes scientific studies by bottom type and also includes some management practices.

Results / Conclusion: There is currently enough information available to allow Councils to assess the effects of fishing on essential fisheries habitat. The report and additional documents should provide a guide for Councils when reviewing management practices.

### Possible Faults

- The report provides no data or conclusions of its own.
- In the summary of paper recommendations, the concern voiced by authors is on the use of dredges on seagrass, there is no mention of the re-suspension of sediment specifically.

**Kraan, C., T. Piersma, A. Dekinga, A. Koolhaas, and J. Van der Meer. 2007. Dredging for edible cockles *Cerastoderma edule* on intertidal flats: short-term consequences of fishermen's patch-choice decisions for target and non-target benthic fauna. ICES J.Mar. Sci. 64:1735–1742.**

### Context of Reference:

As cited: "Impacts of hydraulic or mechanical shellfish dredges (such as rakes, plungers, or shovels) on intertidal bottom structure and benthic invertebrates are typically greater and longer lasting than those from hand harvest (Ferns et al. 2000, Piersma et al. 2001, MacKenzie and Pikanowski 2004, Verhulst et al. 2004, Munari et al. 2006, Kraan et al. 2007, and Peterson and Estes in press)."

Objective and Overview: The study made two comparisons in the intertidal areas of the western Dutch Wadden Sea, one of communities at sites to-be-dredged and sites un-dredged and one of communities at pre and post-dredged sites. The dredges used at the sites were Dutch suction dredges.

System Energy: Dutch Wadden Sea covers 890 km<sup>2</sup> with spring tides of 2 m.

Bottom Type: Sediment in the sea has a median grain size of 140 – 200 µm

Analysis: Data was analyzed with Student t-test.

Species: *M. edulis*, *Heteromastis filiformis*, *Crangon crangon*, *E. americanus*, *Carcinus maenas*, *M. viridus*, *T. tenuis*

Results / Conclusion: No p-values are provided for undredged and to-be-dredged comparisons, but ratios for *C. edule*, *M. edulis*, *N. diversicolor*, *E. americanus*, and *M. balthica* were higher in to-be-dredged sites. When undredged and dredged site were compared *M. edulis*, *H. filiformis*, *C. crangon*, and *E. americanus* showed significant negative short-term decreases in abundance

#### Possible Faults

- Reference selection for comparisons was biased and failed to find similar habitat for analysis. Without a proper reference the possible sources of influence cannot be identified and any conclusions about the effects of fishing effects would be speculation.
- During the to-be-dredged and un-dredged analysis, cores taken 250 m apart are assumed to constitute independent samples. There is no evidence supporting this assumption. The lack of independent samples invalidates use of a t-test.
- During the dredged vs. un-dredged analysis, samples were used from 'near-by' undredged sites, not from the actual dredging sites. Abundance was much higher in areas that were later dredged than in un-dredged area further highlighting the possibility of bias. The non-random, non-independent nature of sampling suggests there may be sampling bias. The final results were inconclusive results, some organisms exhibited decreases while others experienced increases.

**Massachusetts Department of Fish and Game (MA DFG). Revised 2006. Massachusetts Comprehensive Wildlife Conservation Strategy. 750 pp.**

**[http://www.mass.gov/dfwele/dfw/habitat/cwcs/pdf/mass\\_cwcs\\_final.pdf](http://www.mass.gov/dfwele/dfw/habitat/cwcs/pdf/mass_cwcs_final.pdf); accessed July 2011.**

#### Context of Reference:

As cited: "Mussels are an important food source for many migratory birds and we would provide additional protection for priority wildlife species by not allowing harvest of these species. For example, blue mussels are the most important food item during the winter for common eiders (a Service focal species) congregating in Nantucket Sound (MA DFG 2006)."

Objective and Overview: The report is a 791 page strategy for the conservation of the biodiversity of Massachusetts. It relates processes for identifying habitat and species in need of conservation and conservation strategies. The report covers 22 habitat types and 257 species in need of conservation.

#### Possible Faults

- The report does not contain any original data or analysis of the food choice of the Common Eider. The report has a small section that mentions mussels as an important food item for Common Eider. The section is does not have any supporting literature.

**MacKenzie C.L., and R. Pikanowski. 2004. Gear effects on marine habitats: harvesting northern quahogs in a shallow sandy bed at two levels of intensity with a short rake. North American Journal of Fisheries Management, 24(4):1221-1227**

Context of Reference:

As cited: "Impacts of hydraulic or mechanical shellfish dredges (such as rakes, plungers, or shovels) on intertidal bottom structure and benthic invertebrates are typically greater and longer lasting than those from hand harvest (Ferns et al. 2000, Piersma et al. 2001, MacKenzie and Pikanowski 2004, Verhulst et al. 2004, Munari et al. 2006, Kraan et al. 2007, and Peterson and Estes in press)."

Objective and Overview: This study investigated the effects of hand harvesting with common Rhode Island style quahog short rakes on invertebrate abundances and sediment composition in Raritan Bay, Sandy Hook, New Jersey. The experiment applied three treatments: a single harvesting event with a short rake during a season, three harvesting events with a short rake during a season, and undisturbed. Each treatment was replicated three times.

System Energy: The site of the experiment is in protected cove. Plots were installed at the base of a wave break covered with 0.5m of water at low tide. The total tidal range is 2 m.

Bottom Type: Sediment in the sea has a median grain size of 0.5mm.

Analysis: Data was analyzed with Student t-test.

Species: *Callinectes sapidus*, Northern quahogs, *Nematodes*, *Nemertean*s, *Polychaetes*, *Harpacticoid copepods*, *Ilyanassa obsoleta*, *Amphipoda*, *Cirripedia*, *Bivalves*, *Crepidula fornicata*. *Noted absent species:* *Cerebratulus lacteus*, *Asterias forbesi*, large polychaetes

Results / Conclusion: No significant differences between treatments were found.

Possible Faults

- This was a poorly designed experiment with no pre-sampling, low sample size, small adjacent plots, unequal time between sampling, and assumptions about mobile organisms' movement. The conclusion that there was no treatment effect should be attributed to the poor design, not the actual testing of the treatment effects.

**Munari, C., E. Balasso, R. Rossi, and M. Mistri. 2006. A comparison of the effect of different types of clam rakes on non-target, sub-tidal benthic fauna. Italian Journal of Zoology, 73(1):75-82.**

Context of Reference:

As cited: "Impacts of hydraulic or mechanical shellfish dredges (such as rakes, plungers, or shovels) on intertidal bottom structure and benthic invertebrates are typically greater and longer lasting than those from hand harvest (Ferns et al. 2000, Piersma et al. 2001, MacKenzie and Pikanowski 2004, Verhulst et al. 2004, Munari et al. 2006, Kraan et al. 2007, and Peterson and Estes in press)."

Objective and Overview: The objectives of this study are to determine the impact of the use of the manual rake, the hydraulic rake, and the conveyor rake to harvest clams on sub-tidal mudflats in the Northern Adriatic on the benthic community, and to assess short-term community recovery time following raking. Plots were sampled on day 0, 3, 9, and 27.

System Energy: The experiment was conducted in the Po River Delta in the northwestern Adriatic Sea. The spring low tide mark was 0.3 m in the muddy bottom manual raked and hydraulic site, 0.2 m in the sandy bottom hand raked and hydraulic site, and 1.8 at the sandy bottom conveyor rake site.

Bottom Type: Sandy and muddy bottom plots were chosen.

Analysis: Data was analyzed using a two way ANOVA for the manual raked and hydraulic experiments and a simple ANOVA test was used for the conveyor data.

Species: *Polydora ciliata*, *Corophium orientale*, *Strblospio shrubsolii*, *Melita palmata*, *Corophium insidiosum*, *Neanthes succinea*, *Oligochaeta sp.*, *Grammarus aequicauda*, *Grammarus insensibilis*, *Ruditapes philippinarum*

Results / Conclusion: For the muddy substrate experiment, total number of species was significantly reduced in comparisons of control to manual raked, and control to hydraulic raked. The benthic community at the hydraulic raked site was significantly more even than at the control sites. Diversity was also significantly higher at the hydraulic raked site than the manual raked site. Similarity among all three treatments was very high (SIMPER analysis > 63.8%). Time was not a significant factor.

For the sandy substrate experiment, the two treatments, time, and their interactions were significant factors for evenness and diversity. Number of species and abundance were significant for only treatment. Manual and control showed the highest dissimilarity (43%). The conveyor to control comparison showed the significant factors to be the treatment, time, and the interaction term. Community parameters were significantly altered in the conveyor plots for longer than the control as well.

The study was successful in showing there was a difference in the impact of harvesting techniques.

#### Possible Faults

- Author's conclusion: From our results, at least manual (MR) and hydraulic (HR) raking is unlikely to have persistent effects on infaunal communities of the Sacca. Recolonization by small infaunal species was relatively rapid, while the effects of MR and HR were comparable. Conversely, we found that the conveyor rake (CR) had a greater deleterious effect on the macrofaunal community than MR and HR. In conclusion, the mild disturbance due to MR and HR caused a little (and comparable) response to the biota, and this result can be useful for decision-makers facing the problem of combining the protection of the environment with fishermen's considerations.
- During the longitudinal study analysis, samples taken from the same transect at each time interval may be non-independent. The 2 way ANOVA does not account for this correlation structure, thus the p-value assumptions have been violated. Additionally, choosing samples along marked transects 'haphazardly' is inherently biased.

**Neckles, H.A., Short, F.T., Barker, S., and Kopp, B.S. 2005. Disturbance of eelgrass *Zostera marina* by commercial mussel *Mytilus edulis* harvesting in Maine: dragging impacts and habitat recovery. *Marine Ecology Progress Series*. 285. 57-73.**

### Context of Reference:

As cited: "Fisheries harvest using bottom disturbing gear and techniques can degrade eelgrass beds through substrate disturbance (Neckles 2005)."

As cited: "The most common harvest techniques for non-subterranean shellfish (such as dragging and mechanical and hydraulic dredging) are so efficient that mussel beds can be depleted very quickly. Dragging can have severe impacts on sub-tidal habitat structure by removing large areas of vegetation, such as eelgrass (Neckles 2005)."

Objective and Overview: The objectives of this study quantify the extent of disturbance to eelgrass from commercial mussel harvesting and determine the time required for recovery in Maquoit Bay, Maine. The experiment examined plots representing three treatments: recently dredged for mussels (< 1 year), dredged for mussels in the past (> 2 years), and undisturbed. Sites were assumed to have been harvested with dredges hauled along the bottom. The dredge consists of a steel frame with a chain-link bag for the catch.

System Energy: Maquoit Bay in Maine is a shallow estuary that covers approximately 1013 ha with tides of 4 m.

Bottom Type: The bottom sediments consist of mud with extensive eelgrass meadows.

### Analysis

Species: *Zostera marina*, eelgrass

Results / Conclusion: At the < 1 year since harvest sites, there was significantly less shoot density than the undisturbed, approximately 2-3 % of reference densities. Shoot height and eelgrass biomass were also significantly shorter in the harvested sites. In the areas that were harvested more than two years prior there was no difference in shoot morphometric, percent canopy cover, or shoot density when compared to eelgrass beds in undisturbed. Total eelgrass biomass was significantly lower at harvested sites than reference bed. There were no significant differences in any measured sediment characteristics between disturbed and reference sites.

The study did show there was some disturbance on eelgrass caused by bottom dredging.

### Possible Faults

- The description of the dredges is lacking detail and assumes what type was used.
- There is some site selection bias. The treatment sites selected were chosen because of their noticeable disturbance patterns as experimental sites. Little information was known about the actual dredging that was occurring or the condition of the sites prior to harvesting.

**Peterson, C. H. and J. A. Estes, in press.**

### Context of Reference:

As cited: "Impacts of hydraulic or mechanical shellfish dredges (such as rakes, plungers, or shovels) on intertidal bottom structure and benthic invertebrates are typically greater and longer lasting than those

from hand harvest (Ferns et al. 2000, Piersma et al. 2001, MacKenzie and Pikanowski 2004, Verhulst et al. 2004, Munari et al. 2006, Kraan et al. 2007, and Peterson and Estes in press).”

As cited: “Direct and indirect mortality induced by shellfish harvest, recruitment, reproductive failures that delay population recovery, and shifts in species diversity toward smaller, short-lived and more mobile species can reduce the abundance of preferred prey items for higher trophic level predators such as amphipods, copepods, echinoderms, gastropods, crabs, fish, or birds (Peterson and Estes in press, Piersma et al. 2001, Verhulst et al. 2004).”

Objective and Overview: This chapter is an overview of the important anthropogenic factors effecting marine ecosystems. The goal of the text is to present the complexity and of marine systems and the many indirect ways humans affects them. By emphasizing the complexity of the systems, fisheries managers may be encouraged to make more holistic choices when making policy.

Results / Conclusion: Our present management processes are flawed and do not take into account the global influences in our marine systems.

#### Possible Flaws

- The report includes no data of its own, and the conclusions it meets are only distantly related to bottom disturbing fishing.

**Piersma, T., A. Koolhaas, A. Dekinga, J.J. Beukema, R.Dekker, and K. Essink. 2001. Long-term indirect effects of mechanical cockle-dredging on intertidal bivalve stocks in the Wadden Sea. J. Appl. Ecol. 38:976–990**

#### Context of Reference:

As cited: ‘Impacts of hydraulic or mechanical shellfish dredges (such as rakes, plungers, or shovels) on intertidal bottom structure and benthic invertebrates are typically greater and longer lasting than those from hand harvest (Ferns et al. 2000, Piersma et al. 2001, MacKenzie and Pikanowski 2004, Verhulst et al. 2004, Munari et al. 2006, Kraan et al. 2007, and Peterson and Estes in press)’.

As cited: “Direct and indirect mortality induced by shellfish harvest, recruitment, reproductive failures that delay population recovery, and shifts in species diversity toward smaller, short-lived and more mobile species can reduce the abundance of preferred prey items for higher trophic level predators such as amphipods, copepods, echinoderms, gastropods, crabs, fish, or birds (Peterson and Estes in press, Piersma et al. 2001, Verhulst et al. 2004).”

Objective and Overview: The objective of the study was to identify any impact of shellfish harvest by documenting long term recovery patterns. By comparing sediment characteristics and bivalve stock in the areas that has been harvested for shellfish and undisturbed areas the study investigated the impact on intertidal communities intact and shellfish settlement. The site of the experiment was near Griend Island in the Dutch Wadden Sea. Cockle suction-dredges were used on harvest sites.

#### System Energy

Bottom Type: The sediment at the sites had an initial median grain size of 166.2 µm.

Analysis: Data was analyzed with a before after control impact (BACI) design and tested with Student's t-test for significance.

Species: *Cerastoderma*, *Macoma*, *Mya*

Results / Conclusion: For the sediment grain size analysis, there were significant temporal effects and differences between sites. There was no interaction between the time and site factors indicating no difference in the changes between sites. Similar analysis of silt content showed significant differences between sites and for select years some time and interaction term effect. The analysis of total density and biomass was significantly different between harvested sites and the control, but no difference between harvested sites. When analyzing specific species, the treatment sites exhibited significant decline in density for *Cerastoderma* and *Mya* when compared to the reference. Generally, *Macoma* was significantly higher in density for both site post-harvest and *Cerastoderma* spatfall was higher at the cockle harvested site.

#### Possible Faults

- There is some site selection bias. The site chosen for the reference was significantly different from the treatment sites in community and substrate. Analysis uses repeated t-test for comparisons and does not account for the increased chance of making a type I error, incorrectly rejecting the null hypothesis. Paper tries to account for the lack of pre-harvest data by comparing to a nearby site, which only highlights the variability in community. The author mentions extensive changes taking place during the harvest, but never acknowledges the effects they may have:
- From 1941, the western edge of the island of Griend has repeatedly been reshaped by various types of breakers and dikes. The last reconstructions were carried out during the summers of 1985 and 1988. A 2.5-km long sand dike was built west and north of the old circular island (Janssen et al. 1994). The central saltmarsh and creek were undisturbed.

**Ray, G. L. 2005. Ecological functions of shallow, unvegetated estuarine habitats and potential dredging impacts (with emphasis on Chesapeake Bay), WRAP Technical Notes Collection (ERDC TN-WRAP-05-3), U. S. Army Engineer Research and Development Center, Vicksburg, MS. <http://el.erdc.usace.army.mil/wrap> (accessed December 2013).**

#### Context of Reference:

As cited: "Depending on the spatial scale involved, changes in bottom topography can have profound effects on benthic infauna (Ray 2005)."

Objective: This report is a summary of what is known about the ecological functions of tidal waters ranging in depth from mean low water to 1.2 m below mean low water.

Conclusion: Little quantitative information is available about shallow water estuarine habitat, due in part to the vague definition of shallow waters.

#### Possible Faults

- The report has a strong emphasis on the potential impact of boating, particularly on birds. Additionally, the dredging being researched is not commercial fishing, but navigational.

**Stevenson, D., Chiarella L., Stephan, D., Reid, R., Wilhelm, K., McCarthy, J., Pentony, M. 2004. Characterization of the fishing practices and marine benthic ecosystems of the northeast US shelf, and an evaluation of the potential effects of fishing on essential habitat. NOAA Tech Memo NMFS NE 181; 179 p. <http://www.nefsc.noaa.gov/nefsc/publications/> (last accessed January 2013).**

Context of Reference: Stevenson et al (2004) provided a useful summary of available scientific information on physical and biological impacts for different gear and bottom types on the Essential Fish Habitat (EFH) around Monomoy refuge.

Objective: This report provides data and literature assistance for fulfilling the Essential Fish Habitat (EFH) mandates of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) for the NOAA Fisheries Service's Northeast Region. FMPs must include an evaluation of the potential adverse effects of fishing on EFH, including the effects of fishing activities regulated under other federal FMPs.

Possible faults

- FMPs must describe each fishing activity, and must review and discuss all available and relevant information such as information regarding the intensity, extent, and frequency of any adverse effect on EFH, the type of habitat within EFH that may be adversely affected, and the habitat functions that may be disturbed. In completing this evaluation, councils are expected to use the best scientific information available, as well as other appropriate information sources.
- The report was published in 2004, in the last decade relevant information and data may have become available. See Section 4.
- The report comes to no conclusions of its own, only summarizes other sources.

**Verhulst, S., K. Oosterbeek, A. L. Rutten, and B. J. Ens. 2004. Shellfish fishery severely reduces condition and survival of oystercatchers despite creation of large marine protected areas. *Ecology and Society* 9(1): 17.**

Context of Reference:

As cited: "Direct and indirect mortality induced by shellfish harvest, recruitment, reproductive failures that delay population recovery, and shifts in species diversity toward smaller, short-lived and more mobile species can reduce the abundance of preferred prey items for higher trophic level predators such as amphipods, copepods, echinoderms, gastropods, crabs, fish, or birds (Peterson and Estes in press, Piersma et al. 2001, Verhulst et al. 2004)."

As cited: "Impacts of hydraulic or mechanical shellfish dredges (such as rakes, plungers, or shovels) on intertidal bottom structure and benthic invertebrates are typically greater and longer lasting than those from hand harvest (Ferns et al. 2000, Piersma et al. 2001, MacKenzie and Pikanowski 2004, Verhulst et al. 2004, Munari et al. 2006, Kraan et al. 2007, and Peterson and Estes in press)."

Objective and Overview: The study used Marine Protected Areas (MPA) to investigate the effect of shellfish harvest on oystercatchers in the Dutch Wadden Sea. Oystercatchers were sampled for condition at shellfish harvested areas and undisturbed areas.

Species: *Cerastoderma edule* (cockle), *Haematopus ostralegus* (oystercatcher)

Results / Conclusion: The Dutch Wadden Sea exhibited significant decrease in oystercatcher population from 1987 to 1997. There was no significant difference in oystercatcher populations between harvested and the control MPAs. Oystercatcher bills in MPAs showed significantly more shellfish diet wear. Indexes of condition for birds were generally statistically lower in harvested areas.

#### Possible Faults

- Sample sizes are very low for some of the test.
- More information on the behaviors of the oystercatchers is needed to explain some of the assumptions about the selection of feeding grounds, condition sex biases, and sex bias prey choice.

### **Section 3. Conclusion**

In conclusion, due to a lack of appropriate scientific support, the proposed bans on bottom disturbing fishing gear and techniques are not justified. The literature cited is inadequate; many of the citations are outdated or inappropriate for Monomoy NWR. This review also revealed the paucity of scientific information on the actual impacts of both mussel harvesting as well as bottom disturbing fishing gear and techniques around Monomoy Island and Nantucket Sound. After thoroughly reviewing the literature within the CCP/EIS, it must be concluded there is inadequate scientific evidence to support a complete ban on bottom disturbing fishing gear and practices.

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## **Appendix B: Supplemental Materials**

### **List of Materials with corresponding page numbers in Comment Document:**

1. June 2014 Chatham Board of Selectmen Statement (*page 2*)
2. June 1, 1944 Declaration of Taking (*pages 5, 12, 13*)
3. Joshua Nickerson Deed, 1951 (*page 6*)
4. Memorandum of Understanding, 2007 (*page 7*)
5. 1933 Department of Agriculture map of Monomoy (*page 13*)
6. Supreme Court Supplemental Decree, *U.S. v. Maine* (*page 14*)
7. Joint Petition for Supplemental Decree, *U.S. v. Maine* (*page 14*)
8. Town of Chatham Shellfish Rules and Regulations (*page 24*)
9. Town of Chatham Beach and Parks Rules and Regulations (*page 27*)

**Statement of the Chatham Board of Selectmen regarding the  
Monomoy National Wildlife Refuge draft CCP/EIS  
June 17, 2014**

On behalf of the Chatham Board of Selectmen and the citizens of Chatham, I appreciate the opportunity to present the position of the Town on the recommendations and proposals contained within the Monomoy National Wildlife Refuge Draft Comprehensive Conservation Plan (CCP) and Environmental Impact Statement (EIS) prepared by the US Fish and Wildlife Service (FWS).

First, I'd like to extend a resounding thank you to FWS for the extension of the public comment period to October 10<sup>th</sup>. Considering the seasonal nature of Chatham's citizenry, the extension will afford all Chatham residents time to thoughtfully review the extensive and complicated document and provide comment. As many of the proposals contained within the CCP may have, for better or worse, impacts on the residents of Chatham, it is imperative that all local stakeholder's have the opportunity to participate in the public comment process.

This process began when the Town was originally alerted that FWS would begin developing a CCP for the Monomoy National Wildlife Refuge in 2001. At that time, and for the better part of the past decade, our focus was almost entirely on preserving our historic rights for traditional hand harvest of shellfish within the intertidal zone of Monomoy. This resulted in many years of mutually cooperative efforts involving extensive scientific studies and supporting documentation undertaken by both the Town and FWS. Those efforts ultimately ratified the Town's original position that our traditional methods of shellfish harvesting are in fact beneficial to the habitat, foraging shorebirds, and the Refuge as a whole. Therefore, we are very pleased to see that the CCP supports the continuance of traditional hand harvesting of shellfish within the intertidal zone of the Refuge as permitted and regulated by the Town.

Nonetheless, the CCP contains many other recommendations that either the Town strongly opposes or has yet to discuss and form an opinion on. Of particular concern are two unexpected and troubling FWS recommendations for expansion of FWS management jurisdiction to additional land and open water areas.

The first relates to a re-interpretation of FWS management jurisdiction to include all areas encompassed by the exterior limits of the original "*Declaration of Taking*" established in 1944. This revised interpretation would exert FWS management jurisdiction over approximately 4,000 acres of open water and submerged lands within Nantucket Sound to the west of Monomoy not previously managed by the FWS. Secondly, the CCP includes an expanded eastern boundary which annexes approximately 717 acres of "South Beach" which is owned and managed by the Town. From both a factual and legal perspective, FWS recommendations in both these areas are extremely concerning. Both the open water and South Beach areas include many state and

locally managed fisheries, and other public uses and activities that are proposed to be placed under the direct management jurisdiction of FWS. The CCP further specifies that many traditional activities, enjoyed by generations of Chatham and Cape residents and visitors, would be either severely curtailed or outright prohibited should the Plan be fully implemented as proposed.

The Town strongly disputes the FWS position that the original 1944 *Declaration of Taking* included the transfer of ownership to the Federal government of the submerged lands within the Taking limits; nor does the Town believe that the FWS has a legal basis to exert jurisdictional and managerial oversight of state and local fishing rights and other activities occurring within open water areas inside the Taking limits. The Town firmly believes that the extent of Federal land ownership and jurisdictional oversight extends only to the upland and intertidal lands to Mean Low Water within the *limits defined* by the Declaration of Taking. I further submit for the record the actions of the Town at the recent May 12, 2014 Special Town Meeting where a resolution opposing the expansion of FWS jurisdiction was overwhelmingly supported by the Chatham citizenry

With regard to the eastern boundary, the Town disagrees with the manner in which the FWS has applied the principles of “equitable apportionment” of accreted lands. Use of a more survey-based and legally defensible approach to this principle would result in a substantially smaller delineated area. The Town is currently investigating legal precedent and accepted surveying practices relative to land accretion rights.

Directly stemming from the boundary and jurisdictional recommendations of FWS are newly proposed limitations on traditional fishing and shellfishing activities within the sub-tidal waters west of Monomoy. These limitations include a proposed prohibition of all forms of fishing activities that may cause “bottom disturbance” including scallop dragging, mussel harvesting, hydraulic shellfishing, and weir fishing. The prohibitions proposed by FWS are ostensibly to protect eelgrass and maintain productive benthic communities yet the methods and nature of our small boat fisheries, coupled with the regulatory safeguards established by the Town, do not cause impacts to the benthic marine habitat assumed by FWS.

Review of the literature cited by FWS as justification for their recommendations limiting these traditional fisheries indicates that much of it is not applicable to the fisheries and methodologies employed by local fishermen within the waters surrounding Monomoy. In addition, there is no support for the FWS assertion that historical harvesting practices have, or will in the future, adversely impact the Refuge’s primary mission relative to the protection of migrating shorebirds.

We reiterate our position that the FWS does not have the legal authority to manage our local and state regulated fisheries in these waters. We further contend that these fisheries have historically, and in our opinion appropriately and effectively, been managed at the state and local level to the

benefit of shorebirds and other species. And we strongly feel that we are the best and most appropriate stewards to continue this management. We have the knowledge and resources to properly and actively manage these fisheries for the benefit of all user groups. In addition, the Town has demonstrated the ability and willingness to amend and modify regulations when necessary to ensure these activities are conducted in a sustainable, safe and environmentally sensitive manner for both the resource and surrounding habitat. We are prepared to continue to engage the FWS, as has been our practice in the past, to review, and amend as appropriate, the regulatory controls to address legitimate concerns of the FWS while ensuring that the resources remain available to local fishermen.

Outside the impacts to our traditional fisheries, the CCP includes many other recommendations that are difficult to fully assess what, if any, positive or negative impact they may have on Chatham. These can generally be grouped into categories related to:

- changes to the infrastructure and operations of the Refuge;
- access and use by the public of the Refuge; and
- other water-related activities.

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 resolved before implementation of expanded programs.

Other examples of these issues include the proposal to establish a new visitor center somewhere in downtown Chatham or Harwich; new shuttle bus service from off-site locations for visitors to Monomoy; acquisition of new property on Stage Island for FWS use; prohibition of organized picnicking on all refuge lands; additional review of town permitted dredging and disposal activities in surrounding waters; opening up large areas of the refuge for waterfowl hunting; and many others.

Many of these proposals have the potential to have direct, tangible impacts to the Town either positive or negative. However, we have not had any discussions with FWS concerning these proposals to assess their potential impacts on our community or surrounding region. Many of these will also require funding and/or additional FWS staffing which, if not forthcoming, may result in many of these recommendations never being implemented. Therefore, it is difficult to provide detailed comment on these recommendations at this time. For the record, we have included a list of the potential issues which we feel may be worthy of future substantive discussion and review. These are included in the printed version of this statement which will be provided to FWS tonight.

As a final statement, I wish to draw attention to what we feel is a fundamental misunderstanding which the FWS has regarding the character, self-image and core values of our community and what truly makes Chatham, *Chatham*. Despite nearly 70 years of coexistence with the Monomoy

Refuge as a valued neighbor of our community, the socio-economic description of Chatham contained within the CCP describes Chatham as “...a resort, retirement and artistic community”. While those are aspects of our and virtually all other Cape communities, this is hardly how we and others characterize our community. This statement clearly indicates a fundamental flaw in FWS’s understanding and recognition of Chatham’s prevailing cultural identity as a traditional New England small town fishing and maritime community. Chatham is a community rooted in marine and fisheries endeavors and these traditions continue today as an integral part of the local economy and community character. This fundamental misunderstanding carries through in many of the CCP recommendations that seek to eliminate, minimize or restrict many of the maritime, fisheries and historic uses of Monomoy and its surrounding waters that have been significant to the local community throughout the history of Chatham and the entire region.

The CCP contains no mention of “fisheries” in either labor or income statistics; it only reflects the potential, and we feel overstated, environmental impact of prohibiting certain fisheries in open water but not the economic impact(s); it fails to recognize that Chatham’s success in remaining a viable New England fishing community, when many others have failed, is our ability to diversify and adapt to whichever resource is most successful in a given year; and it contains only minimal reference to the potential impacts that proposed changes to fisheries activities may have on the ability to sustain our local fishing industry which is so integral to the sustainability of our community as a whole.

As evidenced by our substantial and unprecedented commitment to providing wastewater solutions directed toward the same environmental goals espoused in the CCP, Chatham is and will continue to be, at the forefront of providing environmental protection of our natural environment. We have engaged in responsible and sustainable fishing practices in our local waters for centuries and deem the proposed actions of the FWS regarding our historical fishing rights as proposed in the CCP as unnecessary, inappropriate and outside the legal authority of the FWS.

In addition to this written statement, the Town will be providing more detailed and formal written comments on these, and other, matters later in the public comment period as our reviews are completed.

Thank you,

Florence Seldin, Chairman  
Jeffrey Dykens, Vice Chairman  
Seth Taylor, Clerk  
Timothy L. Roper  
Sean Summers  
Chatham Board of Selectmen

**Other itemized issue areas of potential concern:****1) Infrastructure and Operations**

- Create new visitor center near Main Street, Chatham, or somewhere in Harwich, with parking and shuttle service to reduce parking issues at Morris Island Headquarters.
- Include more directional and informational signage throughout sections of Chatham, Rt. 6 and elsewhere.
- Try to acquire lot adjacent to existing FWS lot on Stage Island for Service use only.
- Explore off-site shuttle service for visitors.
- Increased staffing of up to 7 new positions depending on the Alternative implemented. Also, additional costs for vehicles, boats, fuel, and office renovations to accommodate increased staff. FWS would also need to explore additional off-site housing.
- Pursue new dockage and marine equipment/boat storage and parking facilities
- Encourage town to develop bike/pedestrian path on causeway.
- Use existing rights-of-way on Tisquantum Rd., Wikis Rd., and Stage Harbor Rd. to access Refuge properties.
- Windmill proposal at headquarters facility.
- Require a competitive, private, access concession to provide/manage ferry access, guide services and kayak rentals and other services with passengers to be shuttled from off-site location(s).

**2) Access and Use**

- No “Organized” picnicking.
- No pets or dogs on lease on any Refuge lands.
- No kiteboarding within the waters of the DOT.
- Begin daytime paid parking at Refuge HQ June 1 to Sept 15.
- Phase out non-Service parking and dinghy storage on Stage Harbor lot 7b.
- Commercial filming and photography to require special permits and only allowed if there is a direct benefit with the Refuge or Service.
- Private commercial guide services will need special use permit to access waters and/or lands of Refuge.
- Work with FAA to increase pilot awareness of 2,000 ft ceiling restriction for aircraft.
- Maintain Inward Point and Powder Hole tracts as designated non-wilderness.
- Open approx. 40% of Refuge for waterfowl hunting.

**3) Other Water-Related Proposals**

- Reinstall buoys demarking the Declaration of Taking boundary.

- Review all dredging and disposal proposals in open waters.
- Prohibition of moorings within the DOT.
- Consider dredged material reuse in non-wilderness areas.
- Evaluate need for “no-anchoring zones”.

Form 1 (d)

IN THE DISTRICT COURT OF THE UNITED STATES  
FOR THE DISTRICT OF MASSACHUSETTS

UNITED STATES OF AMERICA,  
Petitioner,

v.

3,000 ACRES OF LAND, MORE OR  
LESS, SITUATE IN BARNSTABLE  
COUNTY, COMMONWEALTH OF  
MASSACHUSETTS, SUSIE H. KOSAK,  
ET AL.,

Defendants.

MISC. CIVIL NO. 6340

JUDGMENT ON THE DECLARATION OF TAKING

*(June 1, 1944)*

*Sealey*

J. This cause coming on for hearing upon motion of Edmund J. Brandon, United States Attorney in and for the District of Massachusetts, and Philip P. A. O'Connell, Special Assistant to the United States Attorney in and for the said District, attorneys for the petitioner herein, to enter a Judgment on the Declaration of Taking filed herein and upon consideration thereof and of the petition and the declaration of taking filed herein and statutes in such cases made and provided, and it appearing to the satisfaction of the Court:

FIRST, that the United States of America is entitled to acquire property by condemnation under judicial process for the purposes as set forth and prayed for in said petition;

SECOND, that the declaration of taking filed herein contains or has annexed thereto a statement of the authority under which and the public use for which the lands hereinafter described are taken, a description of the said lands taken sufficient for the identification thereof, a statement of the estate or interest taken for the said public use, a plan showing the lands taken, and a statement of the sum of money estimated by the Secretary of the Interior of the United States of America,

to be just compensation for the land taken in the sum of \$27,560.14 and that said amount has been deposited into the registry of the Court for the use and benefit of the persons entitled thereto;

Form 1 (d)

THIRD, that the said declaration of taking filed herein contains a statement that the Secretary of the Interior of the United States of America head of the acquiring agency, is of the opinion that the ultimate award of just compensation will be within the limits prescribed by Congress as the price to be paid therefor;

NOW, THEREFORE, it is ORDERED, ADJUDGED and DECREED that the fee simple title to said lands together with all accretion and reliction and all and singular the water rights, <sup>riparian rights</sup> and other rights, tenements, hereditaments and appurtenances thereunto belonging or in any wise appertaining,

vested in the United States of America upon the filing of the said declaration of taking and the depositing into the registry of this Court of the amount of estimated just compensation, which land is situate in the Town of Chatham, County of Barnstable, and Commonwealth of Massachusetts, and more particularly described in Schedule "A" attached hereto and made a part hereof, and defined in map marked Schedule "B" attached to and made a part of the declaration of taking herewith filed.

Said land is deemed to be condemned and taken for the United States of America, and the right to just compensation for the property so taken is vested in the persons entitled thereto; and the amount of such just compensation shall be ascertained and awarded in this proceeding and established by judgment herein pursuant to law, and

Form 1 (d)

This cause is held open for such further and other orders, judgments and decrees as may be necessary in the premises.

Entered this *1st* day of *June, 1944* at  
Boston, Massachusetts.

BY THE COURT:

*Joseph Duwan*  
Deputy Clerk

ENTERED: *June 1, 1944*

*Arthur D. Kealey*, J.

## SCHEDULE "A"

All that part of Cape Cod in the Town of Chatham, Barnstable County, Massachusetts, more particularly described as being all those tracts or parcels of land lying above mean low water, including a portion of Morris Island; all of Monomoy Beach, Monomoy Island, and Monomoy Point; Sheeters Island; together with all land covered by the waters of land locked ponds; and all islands, islets, sand bars and tidal flats lying in Nantucket Sound, Chatham Bay, and Stage Harbor; all lying within the following described exterior limits: Beginning at the westerly corner of the Chatham Coast Guard Station property on Morris Island, at approximate latitude  $41^{\circ} 39' 25''$ , longitude  $69^{\circ} 57' 30''$ , which corner is marked with a U.S.B.S. standard concrete post "2 COR 1 1940"; thence with the southwesterly boundary of the said Chatham Coast Guard Station, S.  $39^{\circ} 40' E.$ , 6.36 chains to the southerly corner thereof; thence continuing in the range of the southwesterly boundary of the said Coast Guard Station, S.  $39^{\circ} 40' E.$ , 2.83 chains to a point on the easterly side of Morris Island at the mean high water line on the Atlantic Ocean shore; thence, S.  $39^{\circ} 40' E.$ , to the mean low water line on the Atlantic Ocean shore; thence southwesterly with the mean low water line on the Atlantic Ocean shore, along the easterly side of Morris Island, Monomoy Beach, Monomoy Island, and Monomoy Point, to the southernmost extremity of Monomoy Point, at the mean low water line on the Atlantic Ocean Shore, at the entrance to Nantucket Sound; thence westerly in Nantucket Sound, to a point in the said sound, at latitude  $41^{\circ} 33'$ , longitude  $70^{\circ} 02'$ ; thence northeasterly in Nantucket Sound and Chatham Bay, to a point in Chatham Bay at latitude  $41^{\circ} 39' 20''$ , longitude  $69^{\circ} 59' 20''$ ; thence continuing in Chatham Bay, southeasterly to a point in the said bay near the mouth of Stage Harbor at latitude  $41^{\circ} 39' 05''$ , longitude  $69^{\circ} 58' 20''$ ; thence northeasterly in Chatham Bay and Stage Harbor to a point, at the mean low water line on the easterly shore of Stage Harbor, on the westerly side of Morris Island, at approximate, latitude  $41^{\circ} 39' 25''$ , longitude  $69^{\circ} 58' 10''$ ; thence EAST, to a point at the mean high water line on the shore of Stage Harbor; thence EAST, 0.606 chain to a U.S.B.S. standard concrete post marked "1 1940"; thence on Morris Island EAST, 39.30 chains to the place of beginning. Excepting therefrom, however, all that tract or parcel of land, known as the Old Monomoy Lighthouse site, bounded by the following described lines: Beginning at a stake 360 feet from the high water mark, and running from thence, southwest, 20 rods to a stake; thence northwest 32 rods to a stake; thence northeast 20 rods to a stake; thence southeast 32 rods to the first named stake; the same containing 4 acres, more or less.

# North Beach / Nausett Beach.

I, JOSHUA A. NICKERSON, sometimes known as Joshua A. Nickerson, 2nd, of that part of the Town of Harwich known as East Harwich, County of Barnstable and Commonwealth of Massachusetts, being married to Barbara W. Nickerson, for consideration paid, grant to INHABITANTS OF THE TOWN OF CHATHAM, a municipal corporation located within said County of Barnstable and Commonwealth of Massachusetts, a certain tract of land being a part of what is commonly known as North Beach or Nausett Beach and sometimes called Outer Beach, in the Town of Chatham, being located and described as follows:

Beginning at a concrete bound which is 335 feet more or less from mean high water of Chatham Harbor and which is located South  $61^{\circ}-52'-00''$  East a distance of 5,891.71 feet from a Massachusetts Department of Public Works, Standard Traverse Disc No. 111 P. The concrete bound hereinbefore mentioned on the Westerly side of North Beach has a X-Coord. - 1, 027, 878.15 and Y-Coord. - 251, 182.53 of the Massachusetts Coordinate System;

thence North  $83^{\circ}-06'-30''$  East a distance of 683.69 feet to a concrete bound;

thence continuing on the bearing of North  $83^{\circ}-06'-30''$  East a distance of 200 feet more or less to mean high water and continuing on the same bearing to mean low water;

thence Southerly by the waters of the Atlantic Ocean;

thence Southwesterly, Westerly, Northwesterly and Northerly by Chatham Harbor;

thence North  $83^{\circ}-06'-30''$  East from mean low water to mean high water and continuing on the same bearing a distance of 335 feet more or less to the point of beginning.

Said land is the Southerly portion of the land conveyed by Elizabeth F. Montague to me and Benjamin Ralph Bevins dated October 1, 1949, recorded in Barnstable County Deeds in Book 730, Page 544. Further reference is made to a deed to me under license of the Probate Court from the estate of the said Benjamin Ralph Bevins, duly recorded in Barnstable County Deeds.

This conveyance is made on the condition and with the provision that said land shall be used only for public park purposes, being a gift by me to said Town and accepted by said Town

while acting under article 49 of the Warrant for the Annual Town Meeting of said Town held in February, 1951.

The present area of Upland is about 160 acres and is shown on a plan entitled "North Beach Town of Chatham" drawn by Whitney & Bassett, Architects and Engineers, Hyannis, Massachusetts, dated October 1950, to be duly recorded in Barnstable County Deeds.

I, BARBARA W. NICKERSON, wife of said grantor, release to said grantee all rights of dower and homestead and other interests therein.

WITNESS our hands and seals this 19<sup>th</sup> day of May, 1951.

Joshua A. Nickerson

Barbara W. Nickerson

COMMONWEALTH OF MASSACHUSETTS

BARNSTABLE, SS.

Chatham, May 21, , 1951.

Then personally appeared the above named JOSHUA A. NICKERSON and acknowledged the foregoing instrument to be his free act and deed, before me

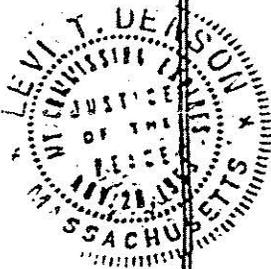
Levi T. Danson

~~Notary Public~~  
Justice of the Peace

My commission expires Nov. 26, 1953

My commission expires:

November 26, 1953



# MEMORANDUM OF UNDERSTANDING

Between

**U.S. Department of Interior  
National Park Service**

And

**U.S. Fish and Wildlife Service**

And

**Town of Chatham, Massachusetts**

RECEIVED AT OFFICE OF  
CHATHAM, MA TOWN CLERK  
2008 JAN 29 PM 12:24

Whereas, the National Park Service, herein referred to as the NPS, has the responsibility for the protection and management of lands, resources and persons utilizing such lands and resources within the boundaries of the Cape Cod National Seashore (CCNS); which is partially situated within the Town of Chatham;

Whereas, the U.S. Fish and Wildlife Service, herein referred to as the FWS, has the responsibility for the protection and management of lands and resources within the boundaries of Monomoy National Wildlife Refuge (Monomoy NWR); which is situated within the Town of Chatham;

Whereas, the Town of Chatham, has responsibility for the protection of persons, endangered species and management of town resources and programs;

Whereas, the jurisdictions of all parties to this agreement overlap in portions of the area known as South Beach (also known as Nauset Beach), Chatham;

Whereas due to shifting configurations of the area known as South Beach, the ownership of the area in the immediate vicinity of the land bridge between South Beach and Monomoy is unsettled and resolution of title may be time-consuming and expensive for all parties;

Whereas, the parties to this agreement recognize that the area known as South Beach, Chatham adjacent to Monomoy NWR and within both the CCNS boundary and the Town of Chatham is a unique coastal environment with important natural resources that demand immediate protection;

Whereas, the parties to this agreement also recognize that South Beach, Chatham, as a popular public destination which the Town wishes to preserve, attracts a large number of visitors and special activities, which require the provision of an appropriate level of resource protection;

Whereas, the parties to this agreement also recognize that Monomoy NWR provides important habitat for breeding and migrating waterbirds, is a nationally designated wilderness area and is a Western Hemisphere Shorebird Reserve Network site;

Whereas, there is a mutual desire of the NPS, FWS, and the Town of Chatham to work cooperatively and jointly for the purposes of resource management of the area known as South Beach, Chatham;

Whereas, it is understood that the underlying principle of this agreement is that public safety and resource protection will be served best by joint coordinated, mutual efforts of the parties hereto;

Therefore, this is an agreement as to the location of the jurisdictional boundary between the newly connected landforms and for the coordination and exchange of resource management services between the Town of Chatham, and the U.S. Department of the Interior, National Park Service, and U.S. Fish and Wildlife Service.

#### ARTICLE I – Authority

Authority for the execution of this agreement is contained in 16 USC 1a-6 (b) (c) and (d); and 1b(1), 742(b), 3375(b).

#### ARTICLE II – Statement of Cooperative Effort

1. The parties hereto agree to establish an administrative boundary for use in determining jurisdictional authorities among and between parties. The working administrative boundary is defined as:
  - a. The Monomoy NWR boundary runs along the mean low water line lying to the East of Monomoy NWR and the CCNS area of jurisdiction will continue lying east of that mean low water line. Because there has recently been a land connection between the land forms known as South Beach and Monomoy, at low tide, the administrative boundary between the parties will follow the mean low water line to the east of Monomoy until it intersects a line demarking the point of physical connection at mean low tide, between South Beach and Monomoy. The boundary will then follow the line demarking the point of physical connection at mean low tide, between South Beach and Monomoy until it again intersects the mean low water line to the east of Monomoy and continue along the said mean low water line. This administrative boundary will remain in place as the points of physical connection at mean low tide fill in with sand and become dry at higher stages of the tide. See Exhibit 1 illustrating the location of the administrative boundary on May 22, 2007. A new map depicting the location of the administrative boundary shall be developed

annually, or as changing natural conditions warrant, and agreed to by representatives of each party.

The Mean Low Water Line described above is relative to the Tidal Datum at Chatham, MA, Stage Harbor, Station ID 8447505, Tidal Epoch 1983-2001, established by the U. S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service.

This administrative boundary does not supersede existing legislative boundary definitions or land ownership. Clarification of jurisdictional overlap and boundaries will be resolved through a long-term planning process (see item 2 below). This administrative boundary 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.

2. The parties hereto agree that a permanent resolution of the overlapping boundary issue must be attained in order to provide for adequate long-term management and protection of the area. The parties therefore will initiate the necessary planning, community outreach and compliance for the purposes of completing a full assessment of boundary and jurisdiction overlap and the development of appropriate long-term remedies to ensure protection of natural resources.
3. The parties hereto agree to render all reasonable assistance to the other, consistent with their respective statutory authorities, whenever necessary to accomplish the goals of this agreement. This agreement does not supersede and is intended to enhance the existing Interagency Agreement between the U.S. Fish and Wildlife Service and the National Park Service (Interagency Agreement for the Cross Designation of Department of Interior Law Enforcement Officers to Provide Law Enforcement and Investigative Support in Areas Under the Responsibility of the National Park Service, Bureau of Land Management, Fish and Wildlife Service, Bureau of Reclamation, and the Bureau of Indian Affairs, dated 2004). This agreement is formulated to support and strengthen the protection of natural resources important to all the agencies..

#### ARTICLE III – Term of Agreement

This agreement shall have a term of five years. Prior to the expiration date of this agreement it shall be reviewed to determine whether or not it should be renewed, modified, or terminated. If all parties agree that the agreement should be renewed and it does not need to be modified, renewal may be accomplished by a simple memorandum of reaffirmation. If a reaffirmation memorandum is signed, the agreement is automatically continued another five years.

#### ARTICLE IV – Key Officials

The Superintendent of Cape Cod National Seashore, 99 Marconi Site Road, Wellfleet, MA, 02667, the Project Leader, Eastern Massachusetts National Wildlife Refuge Complex, 73 Weir Hill Road, Sudbury, MA 01773, (978) 443-4661, and the Chair of the Board of Selectmen of the Town of Chatham, 549 Main Street, Chatham, MA 02633, (508) 945-5100, are the key officials for this Memorandum of Understanding.

#### ARTICLE V – Effective Date and Termination

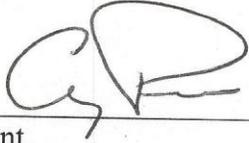
This agreement shall become effective when signed by all of the parties hereto and shall continue in force unless terminated by mutual agreement or by any party, upon sixty (60) days written notice to the others of its intent to do so.

#### VI - Special Provisions

The following Special Provisions apply to this agreement:

- A. **Officials Not to Benefit.** No member of Congress, or Resident Commissioner, shall be admitted to any share or part of this Agreement or to any benefit that may arise there from, but this provision shall not be construed to extend this Agreement if made with a corporation for its general benefit.
- B. **Liability.** Each party agrees that it will be responsible for its own acts and the results thereof and shall not be responsible for the acts of the other party and the results thereof. Each party therefore agrees that it will assume all risk and liability to itself, its agents or employees, for any injury to persons or property resulting in any manner from conduct of its own operations, and the operations of its agents, or employees, under this Agreement, and for any loss, cost, damage, or expense resulting at any time from any and all causes due to any act or acts, negligence, or the failure to exercise proper precautions, of or by itself or its own agents or its own employees, while occupying or visiting the premises under and pursuant to this agreement.
- C. **Anti-Deficiency Act.** This Agreement and the obligations of the Service hereunder shall be subject to the availability of funding, and nothing herein contained shall be construed as binding the Service to expend in any one fiscal year any sum in excess of appropriations made by Congress or administratively allocated for the purpose of this Agreement for the fiscal year, or to involve the Service in any contract or other obligation for the further expenditure of money in excess of such appropriations or allocations. This Agreement is subject to the laws, regulations and policies governing the Service whether now in force or hereafter enacted.

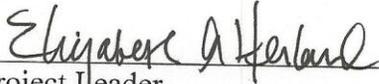
IN WITNESS WHEREOF, the parties have caused this instrument to be executed by their respective duly authorized representatives on the day and year indicated above,



Superintendent,  
Cape Cod National Seashore

1/7/08

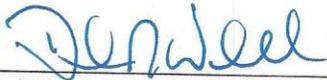
Date



Project Leader,  
Eastern Massachusetts National Wildlife  
Refuge Complex  
Region 5, U.S. Fish and Wildlife System

12/27/2007

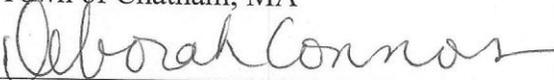
Date



Chairman, Board of Selectmen  
Town of Chatham, MA

12/11/07

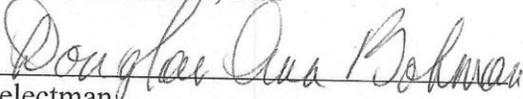
Date



Selectman  
Town of Chatham, MA

12/11/07

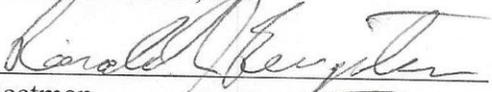
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Selectman  
Town of Chatham, MA

12/11/07

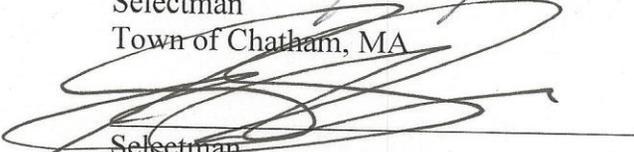
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Town of Chatham, MA

12/11/07

Date

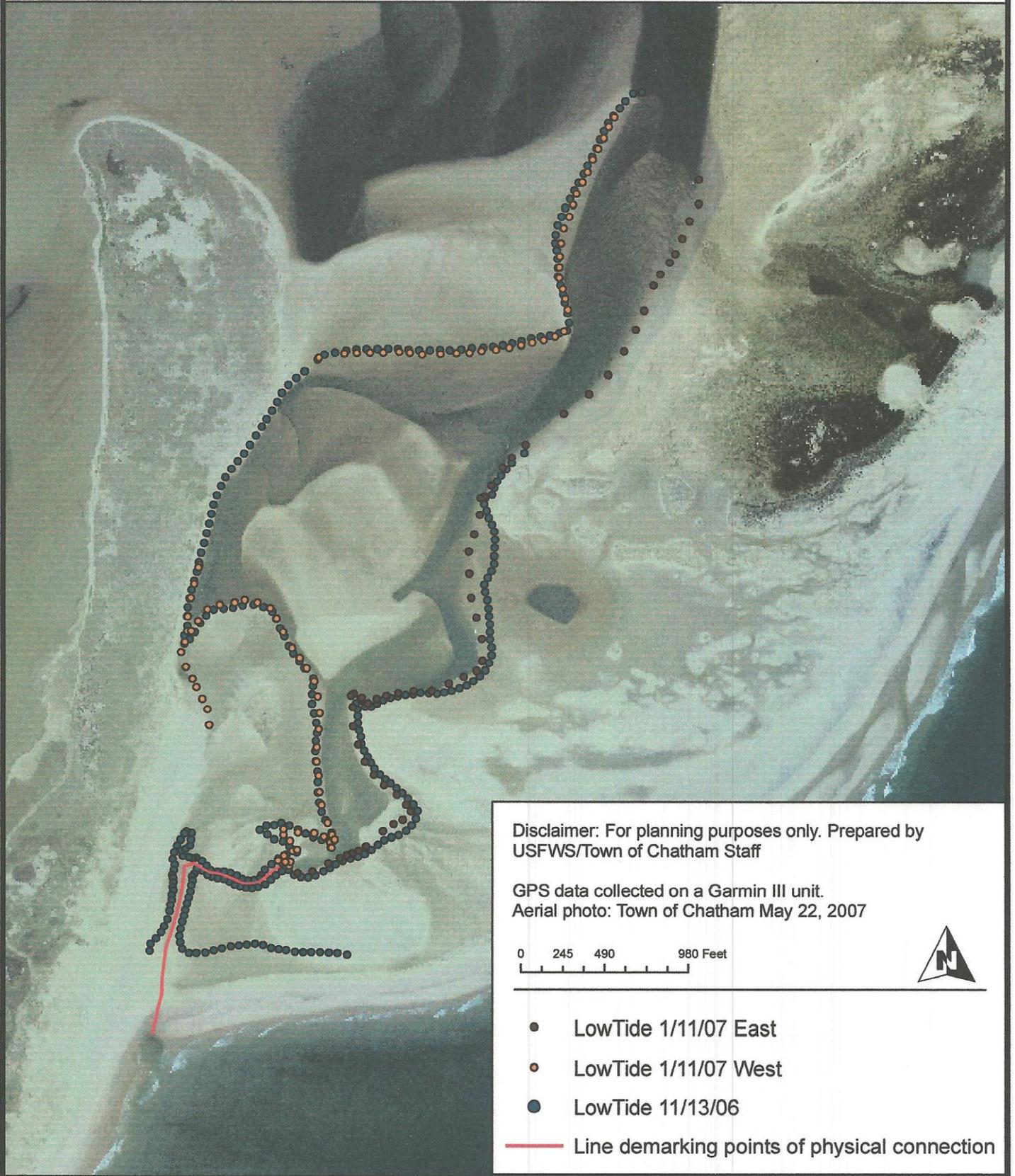


Selectman  
Town of Chatham, MA

12/11/07

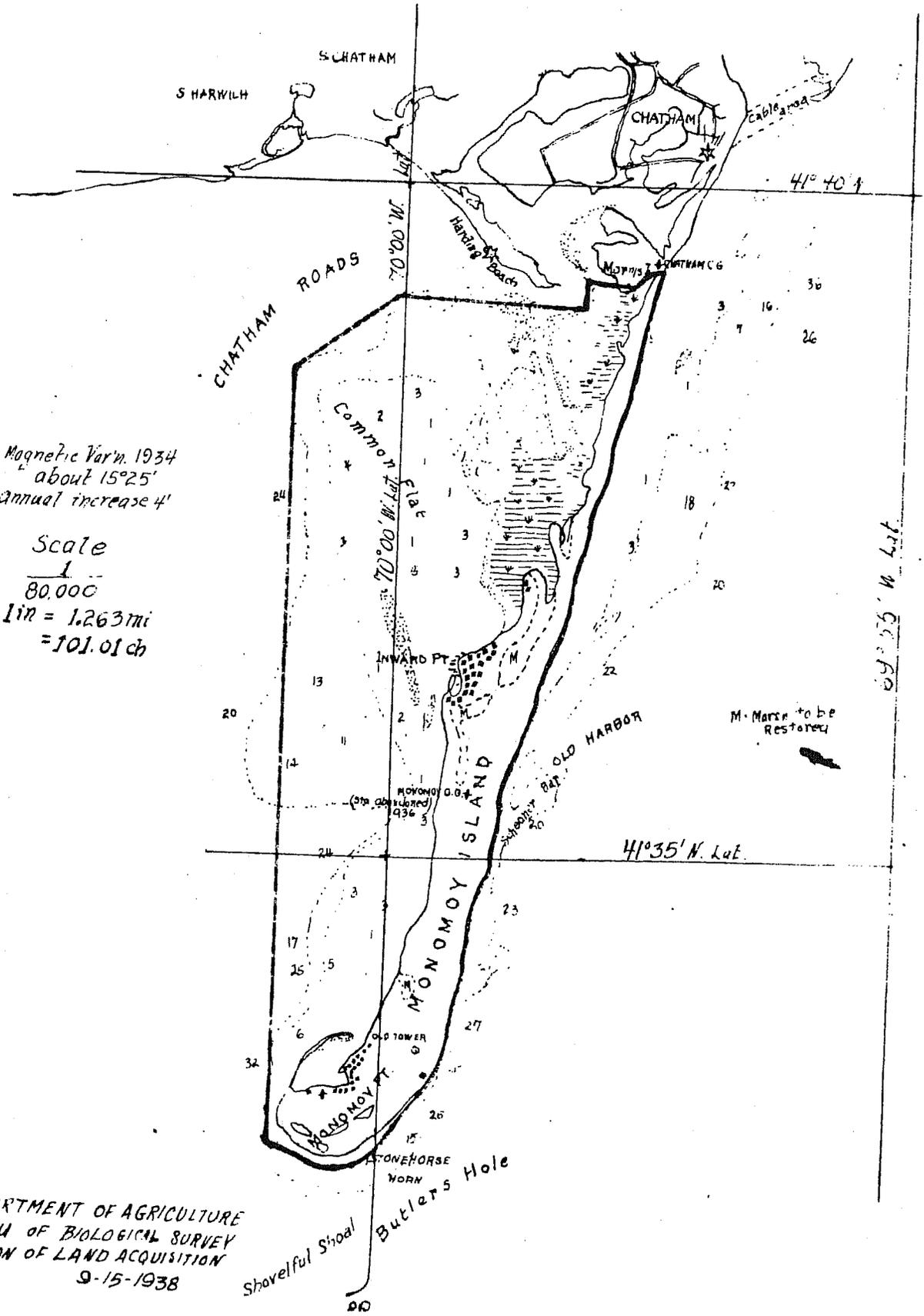
Date

# Exhibit 1. Monomy NWR/Town of Chatham South Beach Connection



MONOMOY ISLAND MIGRATORY WATERFOWL REFUGE  
 BARNSTABLE COUNTY, MASSACHUSETTS

SECTION OF U.S.C. & G.S. CHART 1209  
 Published Nov. 1933.



Magnetic Var'n. 1934  
 about 15° 25'  
 Annual increase 4'

Scale  
 $\frac{1}{80,000}$   
 1 in = 1.263 mi  
 = 101.01 ch

U.S. DEPARTMENT OF AGRICULTURE  
 BUREAU OF BIOLOGICAL SURVEY  
 DIVISION OF LAND ACQUISITION  
 9-15-1938

Shovelful Shoal

Butlers Hole

r516 U.S. 365  
116 S.Ct. 872  
134 L.Ed.2d 4

UNITED STATES of America, Plaintiff,  
v.  
State of MAINE et al. (Massachusetts Boundary Case)

*No. 35, Original.*

**Supreme Court of the United States**

*Feb. 26, 1996.*

1 on exception to the report of the special master

2 The joint motion for entry of a supplemental decree is granted.

3 SUPPLEMENTAL DECREE

4 The Court having, by its decision of February 25, 1986, adopted the recommendation of its  
5 Special Master that Vineyard Sound constitutes historic inland waters and overruled the  
6 exception of Massachusetts to the Report of its Special Master herein insofar as it challenged the  
7 Master's determination that the whole of Nantucket Sound does not constitute historic or ancient  
8 inland waters, and having, to this extent, adopted the Master's recommendations and confirmed  
9 his Report:

10 IT IS ORDERED, ADJUDGED AND DECREED as follows:

11 1. For the purposes of the Court's Decree herein dated October 6, 1975, 423 U.S. 1, 96 S.Ct. 23,  
12 46 L.Ed.2d 1 (affirming the title of the United States to the seabed more than three geographic  
13 miles seaward of the coastline, and of the States to the seabed within the three geographic mile  
14 zone), the coastline of the Commonwealth of Massachusetts shall be determined on the basis that  
15 the whole of Vineyard Sound constitutes state inland waters and Nantucket Sound (with the  
16 exception of interior indentations which are described in paragraphs 2(c), (d) and (e) below) is  
17 made up of territorial seas and high seas.

18 2. For purposes of said Decree of October 6, 1975, the coastline of Massachusetts includes the  
19 following straight lines:

20 (a) A line from a point on Gay Head on Martha's Vineyard (approximately 41x21'10"N,  
21 70x50'07"W) to the southwestern point of Cuttyhunk Island (approximately 41x24'39"N,  
22 70x56'34"W);

23 (b) A line from a point on East Chop (approximately 41x28'15"N, 70x34'05"W) to a point on  
24 Cape Cod (approximately 41x33'10"N, 70x29'30"W);

1 (c) A line from a point southeast of East Chop (approximately 41x27' 30"N, 70x33'18"W) to a  
2 point west of Cape Pogue (approximately 41x25'06"N, 70x27'56"W) on the island of Martha's  
3 Vineyard;

4 (d) A line from a point on Point Gammon on Cape Cod (approximately 41x36'36"N,  
5 70x15'40"W) to the southwestern-most point of Monomoy Island (approximately 41x33'02"N,  
6 70x00'59"W); and

7 (e) A line from a point on the west coast of Great Island (approximately 41x37'08"N,  
8 70x16'15"W) to a point on Hyannis Point on Cape Cod (approximately 41x37'27"N,  
9 70x17'34"W).

10 3. The Court retains jurisdiction to entertain such further proceedings, enter such orders, and  
11 issue such writs as from time to time may be deemed necessary or advisable to effectuate and  
12 supplement the decree and the rights of the respective parties.

13 Justice SOUTER took no part in the consideration or decision of this motion and supplemental  
14 decree.

*filed  
1/31/96*

No. 35, Original

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In the Supreme Court of the United States

OCTOBER TERM, 1995

UNITED STATES OF AMERICA, PLAINTIFF

v.

STATE OF MAINE, ET AL.  
(MASSACHUSETTS BOUNDARY CASE)

ON EXCEPTION TO THE REPORT OF  
THE SPECIAL MASTER

JOINT MOTION FOR ENTRY OF A SUPPLEMENTAL  
DECREE, MEMORANDUM IN SUPPORT  
OF THE JOINT MOTION, AND  
PROPOSED SUPPLEMENTAL DECREE

SCOTT HARSHBARGER  
*Attorney General*  
WILLIAM L. PARDEE  
*Assistant Attorney General*  
*Commonwealth of*  
*Massachusetts*  
*Boston, Mass. 02114*  
*(617) 727-2200*

DREW S. DAYS, III  
*Solicitor General*  
*Department of Justice*  
*Washington, D.C. 20530*  
*(202) 514-2217*

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**In the Supreme Court of the United States**

OCTOBER TERM, 1995

---

No. 35, ORIGINAL

UNITED STATES OF AMERICA, PLAINTIFF

*v.*

STATE OF MAINE, ET AL.

(MASSACHUSETTS BOUNDARY CASE)

---

**ON EXCEPTION TO THE REPORT  
OF THE SPECIAL MASTER**

---

**JOINT MOTION FOR ENTRY OF A  
SUPPLEMENTAL DECREE**

---

The United States of America and the Commonwealth of Massachusetts jointly move that this Court enter a supplemental decree in the form and manner of the attached proposed decree. The basis for this motion is explained in the memorandum that follows.

Respectfully submitted.

SCOTT HARSHBARGER  
*Attorney General*

DREW S. DAYS, III  
*Solicitor General*

WILLIAM L. PARDEE  
*Assistant Attorney General  
Commonwealth of  
Massachusetts*

JANUARY 1996

*In the Supreme Court of the United States*

OCTOBER TERM, 1995

No. 35, ORIGINAL

UNITED STATES OF AMERICA, PLAINTIFF

*v.*

STATE OF MAINE, ET AL.

(MASSACHUSETTS BOUNDARY CASE)

ON EXCEPTION TO THE REPORT OF THE  
SPECIAL MASTER

MEMORANDUM IN SUPPORT OF THE JOINT  
MOTION FOR A SUPPLEMENTAL DECREE

This joint motion arises from litigation between the United States and the Commonwealth of Massachusetts over whether Vineyard Sound and Nantucket Sound are part of the “internal waters” of Massachusetts. This Court has decided that Vineyard Sound qualifies as internal waters, but Nantucket Sound does not. *United States v. Maine*, 475 U.S. 89 (1986). The United States and Massachusetts have prepared the proposed decree in conformity with the Court’s decision.

1. In 1969, the United States brought suit against 13 States to resolve disputes respecting the scope of the federal sovereign interest in the seabed and

submerged lands underlying the Atlantic Ocean. See *United States v. Maine*, 395 U.S. 955 (granting the United States leave to file complaint). The Court appointed a Special Master, 398 U.S. 947 (1970), who submitted a report to the Court, 419 U.S. 814 (1974). The States filed exceptions to the Special Master's report. The Court overruled those exceptions, concluding that the United States has sovereign rights over the seabed and subsoil lying more than three geographic miles seaward from the ordinary low-water mark and from the outer limits of inland coastal waters. 420 U.S. 515 (1975). The Court entered a decree in accordance with that ruling. 423 U.S. 1 (1975).

2. The Court retained jurisdiction to resolve remaining issues respecting the location of the coastline of the States and the seaward boundary between the seabed lands of the States and those of the United States. *United States v. Maine*, 421 U.S. 958 (1975). In 1976, the United States filed a motion for supplementary proceedings to resolve issues respecting portions of the coastlines of Rhode Island and Massachusetts. The Court appointed a new Special Master, 433 U.S. 917 (1977), who severed the Massachusetts dispute from the Rhode Island dispute and allowed New York to intervene in the latter proceeding. See *United States v. Maine (Rhode Island and New York Boundary Case)*, 469 U.S. 504, 508 (1985).

In the case of the dispute involving Rhode Island and New York, the Special Master submitted a report addressing the status of Block Island Sound and a portion of Long Island Sound. *United States v. Maine*, 465 U.S. 1018 (1984). The United States, Rhode Island, and New York all filed exceptions to the

Special Master's report. The Court overruled those objections, concluding that certain portions of the waters in dispute are "juridical bays" and therefore inland waters of the States. *United States v. Maine (Rhode Island and New York Boundary Case)*, 469 U.S. 504 (1985). The Court entered a supplemental decree in accordance with its ruling. 471 U.S. 375 (1985).

In the case of the Massachusetts dispute, the Special Master submitted a report addressing the location of portions of that Commonwealth's coastline in the area between Eastern Point, on Cape Ann, and Race Point, on Cape Cod, and between Gooseberry Neck and Cuttyhunk Island. The parties filed no exceptions to that report, and the Court accordingly entered a supplemental decree adopting the Special Master's determinations. *United States v. Maine (Massachusetts Boundary Case)*, 452 U.S. 429 (1981). The Master separately addressed the question whether Vineyard Sound and Nantucket Sound are inland waters of the Commonwealth. The Master submitted a report recommending that Vineyard Sound constitutes inland waters, but Nantucket Sound does not. *United States v. Maine*, 472 U.S. 1015 (1985). Massachusetts filed an exception respecting Nantucket Sound, but the Court overruled that exception. 475 U.S. 89 (1986).

3. In its decision respecting Nantucket Sound, the Court directed the parties "to prepare and submit a decree conforming to the recommendations of the Special Master." *United States v. Maine*, 475 U.S. at 105. The parties began work in preparing the decree, but as a result of changes in the respective governments' personnel and the press of other government business, the undertaking did not progress for a

considerable period of time. The United States and the Commonwealth of Massachusetts have now resumed and completed that undertaking. The proposed decree describes the location of the Massachusetts coastline in the vicinity of Vineyard and Nantucket Sounds in accordance with this Court's February 25, 1986, decision, the Special Master's report, and agreements reached between the parties.

Respectfully submitted.

SCOTT HARSHBARGER  
*Attorney General*

DREW S. DAYS, III  
*Solicitor General*

WILLIAM L. PARDEE  
*Assistant Attorney General*  
*Commonwealth of*  
*Massachusetts*

JANUARY 1996

**In the Supreme Court of the United States**

OCTOBER TERM, 1995

No. 35, ORIGINAL

UNITED STATES OF AMERICA, PLAINTIFF

*v.*

STATE OF MAINE, ET AL.  
(MASSACHUSETTS BOUNDARY CASE)

ON EXCEPTION TO THE REPORT  
OF THE SPECIAL MASTER

PROPOSED SUPPLEMENTAL DECREE

The Court having, by its decision of February 25, 1986, adopted the recommendation of its Special Master that Vineyard Sound constitutes historic inland waters and overruled the exception of Massachusetts to the Report of its Special Master herein insofar as it challenged the Master's determination that the whole of Nantucket Sound does not constitute historic or ancient inland waters, and having, to this extent, adopted the Master's recommendations and confirmed his Report:

IT IS ORDERED, ADJUDGED AND DECREED as follows:

1. For the purposes of the Court's Decree herein dated October 6, 1975, 423 U.S. 1 (affirming the title of

the United States to the seabed more than three geographic miles seaward of the coastline, and of the States to the seabed within the three geographic mile zone), the coastline of the Commonwealth of Massachusetts shall be determined on the basis that the whole of Vineyard Sound constitutes state inland waters and Nantucket Sound (with the exception of interior indentations which are described in paragraphs 2(c), (d) and (e) below) is made up of territorial seas and high seas.

2. For purposes of said Decree of October 6, 1975, the coastline of Massachusetts includes the following straight lines:

(a) A line from a point on Gay Head on Martha's Vineyard (approximately  $41^{\circ}21'10''\text{N}$ ,  $70^{\circ}50'07''\text{W}$ ) to the southwestern point of Cuttyhunk Island (approximately  $41^{\circ}24'39''\text{N}$ ,  $70^{\circ}56'34''\text{W}$ );

(b) A line from a point on East Chop (approximately  $41^{\circ}28'15''\text{N}$ ,  $70^{\circ}34'05''\text{W}$ ) to a point on Cape Cod (approximately  $41^{\circ}33'10''\text{N}$ ,  $70^{\circ}29'30''\text{W}$ );

(c) A line from a point southeast of East Chop (approximately  $41^{\circ}27'30''\text{N}$ ,  $70^{\circ}33'18''\text{W}$ ) to a point west of Cape Pogue (approximately  $41^{\circ}25'06''\text{N}$ ,  $70^{\circ}27'56''\text{W}$ ) on the island of Martha's Vineyard;

(d) A line from a point on Point Gammon on Cape Cod (approximately  $41^{\circ}36'36''\text{N}$ ,  $70^{\circ}15'40''\text{W}$ ) to the southwestern-most point of Monomoy Island (approximately  $41^{\circ}33'02''\text{N}$ ,  $70^{\circ}00'59''\text{W}$ ); and

(e) A line from a point on the west coast of Great Island (approximately  $41^{\circ}37'08''\text{N}$ ,

$70^{\circ}16'15''\text{W}$ ) to a point on Hyannis Point on Cape Cod (approximately  $41^{\circ}37'27''\text{N}$ ,  $70^{\circ}17'34''\text{W}$ ).

3. The Court retains jurisdiction to entertain such further proceedings, enter such orders, and issue such writs as from time to time may be deemed necessary or advisable to effectuate and supplement the decree and the rights of the respective parties.

**TOWN OF CHATHAM  
SHELLFISH RULES AND REGULATIONS  
(UPDATED THROUGH January 24, 2014)**

**SECTION 101. AUTHORITY**

(A) The Selectmen of the Town of Chatham acting under the authority granted them by the acceptance of Article 16 of the Annual Town Meeting held February 17, 1942, and by the provision of Massachusetts General Laws, Chapter 598, Sections 52 and 54 of the Acts of 1941; Chapter 130, Section 52, and by any other statutes of the Commonwealth of Massachusetts, do hereby promulgate the following rules and regulations concerning the taking of quahaugs, mussels, soft-shell clams, sea clams, oysters, razor clams, scallops, blood ark clams, periwinkles, eels and sea worms.

(B) These rules and regulations supersede any previously issued shellfish rules and regulations and shall continue in force until amended, rescinded or replaced under MGL Chapter 130, or by rules and regulations adopted by the Board of Selectmen, or until their authority to promulgate and enforce shellfish rules and regulations is repealed.

(C) Amendments, special provisions, closed areas, and seasonal rules and regulations are posted in three public places including the shellfish bulletin board at the Town Offices, or by publishing the same once in a newspaper published in the Town of Chatham.

**SECTION 102. APPLICABILITY**

(A) All persons harvesting or taking shellfish from the flats or waters of the Town of Chatham are subject to the provisions of these regulations

**SECTION 103. SEVERABILITY**

(A) In the event that any provision, section or clause of these rules and regulations is judicially found to be invalid or unconstitutional, such decision shall not affect the validity of the remaining portion of these rules and regulations.

**SECTION 104. DEFINITIONS**

(A) Except as specially defined in these rules and regulations, all words used in these rules and regulations carry their customary meaning. Words used in the present tense include the future, and the singular includes the plural. The word "person" includes individual, partnership, association, corporation, company or entity.

(B) In these rules and regulations –

1. "Blood Ark Clam" means a marine mollusk of the species *Anadara ovalis* also known as a blood clam, blood arc, or blood cockle.
2. "Board" means the Board of Selectmen of the Town of Chatham.
3. "Boat" (see vessel).
4. "Bushel" means a quantity equivalent to that contained in a level container measuring 18" in length, 10 ½" in height, and 12 ¼" in width. See also "Tote" (Sec. 104, B-37)
5. "Calendar/shellfish week" means a seven day period beginning on Sunday and ending the following Saturday.
6. "Clam" means a marine mollusk of the species *May arenaria*, commonly called the soft-shell clam or steamer. See also "seed clam."
7. "Closed Area" means a closed season for any or all kinds of shellfish in such waters, flats, or creeks deemed necessary or expedient by the Shellfish Constable, subject to approval by the Board, to plant, grow, and protect shellfish.
8. "Closed season" means a time (hours, days, weeks or months) during which shellfish cannot be lawfully harvested.
9. "Commercial" means the taking and selling of shellfish harvested from the waters of the Town.
10. "Commercial Fisherman Permit" (Shellfish specially endorsed) means a permit issued to an individual by the Massachusetts Division of Marine Fisheries expressly for the purpose of harvesting shellfish and offering it for sale.
11. "Commercial Shellfish Permit" means the permit issued by the Town to an individual over the age of 13 expressly for the purpose of harvesting and offering shellfish for sale.
12. "Eel" means a catadromous marine animal of the species *Anguilla rostrata*, commonly known as the American Eel.
13. "Elver" means an eel under 4" in length, also known as a juvenile eel.
14. "Family" means married spouses and dependent(s), providing they are living in the same dwelling and the dependent has not reached the age of 21. (See immediate family.)
15. "Family permit" means the permit issued by the Town of Chatham to a member of a family expressly for the purpose of harvesting shellfish for domestic, non-commercial use.

16. "Head of Family" means the person who assumes the responsibility for the family and is so recognized by the Board.
17. "Immediate Family" means member living with and supported by a head of household/family permit holder on a year-round basis. (See "family," "Family permit," and "head of family.")
18. "Junior Commercial Permit" means a commercial shellfish permit issued by the Board to a resident of Chatham over 13 years of age who is currently a student at a Junior or Senior High School.
19. "Marine Worm" means any specie of worm used for bait purposes, including what is commonly known as seaworm, sandworm, bloodworm, ribbonworm. (No size limit.)
20. "Mussel" means a marine mollusk of the species *Mytilus edulis*, commonly known as the blue mussel, or of the species *Modiolus demissus*, commonly known as the brown, ribbed mussel. (See also "seed mussel.")
21. "Non-Resident" means a person who is not domiciled in the Town of Chatham or does not own real estate in the Town of Chatham.
22. "Oyster" means a marine mollusk of the species *Crassostrea virginica* commonly known as the American oyster. (See also "seed oyster.")
23. "Quahaug" means a marine mollusk of the species *Mercenaria mercenaria*, commonly known as a hard-shelled clam, little neck or cherrystone. (See also "seed quahaug.")
24. "Razor Clam" means a marine mollusk of the species *Ensis directus*, also known as the common razor clam or the little green razor clam. (See also "seed razor clam.")
25. "Resident" means any person who is domiciled in the Town of Chatham or who owns real estate in the Town of Chatham.
26. "Salting" means a saline solution derived solely from table salt and water used to harvest razor clams and sea clams.
27. "Scallop" means a marine mollusk of the species *Argopecten irradian*, commonly known as the Cape scallop, Bay scallop or blue-eyed scallop. (See also "seed scallop.")
28. "Sea Clam" means a marine mollusk of the species *Spisula solidissima* commonly known as the surf clam. (See also "seed sea clam.")
29. "Seed clam" means a clam of a size less than two inches in longest shell length.
30. "Seed mussel" means a mussel of a size less than two inches in the longest shell length.
31. "Seed oyster" means an oyster of a size less than three inches in the longest shell length.
32. "Seed quahaug" means a quahog of a size less than one inch shell thickness (hinge width).
33. "Seed razor clam" means a razor clam less than four and one half inches in size.
34. "Seed scallop" means a scallop without a well defined raised annulus or growth ring.
35. "Seed sea clam" means a sea clam of a size less than five inches in the longest shell length when taken by both commercial and recreational permit holders.
36. "Seed/juvenile shellfish" means seed clams, elvers, seed mussels, seed oysters, seed quahaugs, seed scallops and seed sea clams.
37. "Shellfish" means clam, eel, marine worm, mussel, oyster, quahaugs, razor clam, sea clam and scallop.
38. "To shellfish" means to take, or attempt to take or harvest shellfish by any method or means, whether or not such method or means results in the taking or harvesting of shellfish.
39. "Tote" means a plastic container measuring 18" in length, 10 ½ " in height, and 12 1/4" in width (+/- 1/4"), holding one level bushel of scallops (shellfish) in the shell. All totes used for commercial scalloping or shellfishing must be approved by the Shellfish Constable and are subject to inspection at any time.
40. "Town" means the Town of Chatham, Massachusetts.
41. "Vessel" means every description of watercraft, other than a seaplane on the water, used or capable of being used as a means of transportation on the water.
42. "Waters" means all the waters of the Town subject to the ebb and flow of the tide out to the three-mile limit of marine jurisdiction.

#### SECTION 201. REQUIREMENTS TO OBTAIN SHELLFISH PERMITS

(A) For all classes of permits, it shall be the burden of the applicant, to the satisfaction of the issuing authority, the Board or their agent, to prove place of domicile or real estate ownership.

(B) For a family permit, it shall be the burden of the applicant, to the satisfaction of the issuing authority, the Board or their agent, to prove family membership for each individual entitled to use the family permit. See Section 104. 14. 15. and 16..

(C) To be eligible for a Resident Family Shellfish Permit, one or more (at the discretion of the Sticker Office) of the following instruments of proof for legal residency must be provided:

Real Estate Tax Payers:

- Inclusion on the current assessor's list of residential property owners
- Copy of property deed
- Current real estate tax receipt
- Inclusion on the current street list (census)

In cases of properties owned by trusts, the trustees and those named in the trust are eligible. Sufficient documentation, such as an excerpt of the trust agreement, is required.

Year Round Legal Residents Who Are Not Real Estate Tax Payers:

- Valid driver's license with Chatham address
- Valid vehicle registration with Chatham address
- A signed lease of six months or longer duration showing property address (with backup from another of the listed documents showing it is a legal address).
- Current utility bill in applicants name with same Chatham address (P. O. Box is unacceptable)
- Inclusion on current street list (census)
- Current voter registration certificate from Town

In the case where a vehicle is leased, you MUST show a copy of either the lease agreement, monthly bill for lease, or proof of insurance with your name linked to the vehicle

(D) Permits shall be valid when signed by one member of the Board.

#### SECTION 202. FAMILY PERMIT REGULATIONS

\*NOTE: See also Sec. 104., 13, 14, 15, 16, 20, and 24

(A) A resident family permit shall be issued to any resident who is head of family. The head of family shall provide, upon request, the names of all family members entitled to use said permit.

(B) A non-resident family permit shall be issued to any non-resident who is head of family. The head of family shall provide, upon request, the names of all family members entitled to use said permit.

(C) Family permits shall be issued beginning on June 1 of each year and shall expire on May 31<sup>st</sup> of the year following their issuance.

#### SECTION 203. COMMERCIAL PERMIT REGULATIONS

(A) The taking and selling of shellfish shall be deemed to be commercial. No person holding a family permit only will sell or offer for sale, for money or any other consideration, any shellfish or marine worms for commercial purpose unless he is a holder of a State (Chap. 130, Sec. 80) and Town (Chap. 130, Sec. 52) commercial shellfisherman permit.

(B) No citizen of the United States of America shall be eligible for a commercial shellfish permit, unless he fills the Town of Chatham residency requirements (see separate page) and has been domiciled in the Town of Chatham for at least one year preceding the date of issuance thereof.

(C) All commercial shellfish permit applications must be filed with the Shellfish Constable or the Board between April 1 and May 31 of each calendar year.

(D) Each applicant for a commercial shellfish permit shall be a resident and domiciled in the Town; Commercial permits are valid May 1 of each year and expire on April 30 following the date of issuance. If at any time the permit holder should change domicile to another town, the permit holder shall immediately notify the Shellfish Constable and the permit shall be automatically revoked and must be surrendered to the Shellfish Constable.

(E) Residency shall be established by the applicant to the satisfaction of the Board.

(F) The applicant shall provide documentary evidence of residence/domicile, including

1. A current motor vehicle driver's license;
2. A current motor vehicle excise tax bill issued by the Town;
3. A current real estate tax bill issued by the Town;
4. A current lease or rental agreement of the applicant's residence/domicile in the Town;
5. A current voter registration certificate for the Town;
6. A current listing on the Town census or list of persons.

(G) Each application shall be subject to review by the Shellfish Constable and the Board, prior to approval.

(H) All applicants must pay the permit fee for a commercial shellfish permit when application for such permit is submitted.

(J) Holders of a commercial shellfish permit shall not employ any person for wages, shares, or any other considerations, or permit any person to assist in the taking of shellfish, unless said person shall possess a valid, current, commercial shellfish permit issued in the name of said person. This provision shall not apply to a person who is accompanying or operating a boat for a person who has a valid, current, commercial shellfish permit and who is not otherwise actively engaged in or assisting in such fishery.

(K) A Junior commercial shellfish permit may be issued by the Board to a resident of Chatham, who is currently a student at a Junior or Senior High School at the time the permit is applied for.

SECTION 204. SENIOR CITIZEN PERMIT

(A) Any resident, domiciled in the Town, seventy (70) years of age or older by May 31 of the year of application, is entitled to a Commercial shellfish permit for a reduced fee.

(B) Any resident seventy (70) years of age or older at the date of permit issuance who is domiciled in the Town or any non-resident seventy (70) years of age or older who owns real estate in the Town is entitled to a Family shellfish permit for a reduced fee.

(C) Those residents domiciled in the Town seventy (70) years or older having received a permit for no fee prior to April 1, 2004, will continue to receive a permit for no fee.

SECTION 205. CLASSES OF PERMITS AND FEES

(A) Commercial Shellfish Permit .....	200.00
(B) Junior Commercial Shellfish Permit.....	100.00
(C) Family Shellfish Permit .....	25.00
(D) Non-Resident Family Shellfish Permit.....	80.00
(E) Senior Citizen Resident Family Permit.....	10.00
(F) Senior Citizen Commercial Shellfish Permit.....	50.00

SECTION 206. DUPLICATE PERMITS

(A) Duplicate permits shall be issued for any class of permit as a replacement for shellfish permits lost or destroyed. Duplicates shall also be issued to amend any class of permit when the family status or eligibility of a permittee to use the permit changes.

SECTION 301. GENERAL CONSIDERATION FOR ALL CLASSES OF PERMITS

(A) No person shall take from the flats or waters of the Town of Chatham, any softshell clams, sea clams, mussels, sea worms, quahaugs, razorfish, oysters, eels, or scallops without first obtaining from the Board of Selectmen a permit to do so. All holders of shellfish permits are subject to rules and regulations governing the taking of shellfish as promulgated by the Town of Chatham. Town of Chatham shellfish permits shall be obtained at Town Offices. New and additional rules and regulations are posted at the shellfish bulletin board, Town Offices.

(B) Permits shall be issued subject to any changes in these provisions, rules and regulations and any amendments thereto that the Board may deem necessary and expedient and so adopted under the provisions of Massachusetts General Law, Chapter 130, Section 52.

(C) Any permittee who violates any of these provisions, rules and regulations may have their shellfish permit suspended or revoked and canceled by the Board by written notice and hearing, if requested by the person to whom the shellfish permit was issued. A copy of such notice shall be filed in the Office of the Board and shall be prima facie evidence that such notice has been given.

(D) Permits are not transferable and no person shall amend, alter, or in any way modify, the information contained on a permit.

(E) Permit holders must carry their shellfish permits and identification upon their persons when shellfishing. Shellfish permits, a valid driver's license, or positive identification must be shown when requested by the Constable or Deputy Constables.

(F) Permit holders upon request shall permit Shellfish Constables to check the size and quantity of shellfish, eels and seaworms.

(G) No person shall take, or have in their possession, seed clams, seed oysters, seed scallops, seed quahaugs, seed mussels and seed sea clams except that a five (5) percent by count of seed by accident, not by design, shall be allowed.

(H) Shellfishing by diving or scuba method is prohibited in all marked water channels in the Town of Chatham during the period between April 1 through October 30.

(I) No person shall shellfish in or take shellfish from a closed, contaminated area, said closure of such contaminated areas posted and advertised as required by law.

(J) All permit holders must carry a shellfish gauge for the corresponding shellfish to be harvested.

#### SECTION 303. CATCH REPORTS

(A) All shellfish permit holders shall file an annual catch report with the Board, Town Offices, stating the amount, specie, place of shellfish harvested and number of persons using the family and non-resident family permit, for the twelve months ending on the preceding May 31. A new permit may not be issued until the catch report has been completed by the permit holder. The information will be held confidential.

#### SECTION 304. SHELLFISH HOURS AND LANDINGS

(A) No person shall take shellfish from the waters and flats within the Town of Chatham during the hours between one-half hour after sunset and one-half hour before sunrise (the exception – see scallop regulations.) All shellfish shall be landed during designated shellfishing hours.

(B) All Chatham shellfish permit holders shall shellfish within the Town boundaries and land all shellfish caught within Town boundaries in the Town of Chatham, unless permission is granted the permit holder by the Shellfish Constable or Deputies.

#### SECTION 305. QUANTITY, SEASON AND SIZE

(A) The holder of a family or non-resident family permit may not take in any one week more than:

1. One 12-quart pail of soft-shell clams, or
2. One 12-quart pail of quahaugs, or
3. One 12-quart pail of mussels, or
4. One 12-quart pail of oysters (in season), or
5. One 12-quart pail of razor clams, or
6. One-half bushel of sea clams, or
7. One bushel of scallops (in season); however, the amount taken shall not exceed in any one week ONE bushel of any or all kinds of shellfish. (See Chapter 130, Sec. 52.)

(B) Commercial limits on varied shellfish, including mussels, scallops and sea clams, and hydraulically dredged quahaugs are posted on the shellfish bulletin board, the Town Offices and on the Town web site. The commercial catch of quahaugs from Mill Creek and Buck's Creek combined shall not exceed more than two (2) level Town totes per day (see Sec. 104, Para. B-37 for definition of Town tote).

(C) The calendar/shellfish week means a seven-day period beginning on Sunday and ending the following Saturday.

(D) Quahaugs must be one (1) inch shell thickness (hinge width) or greater. A one-inch gauge must be used by the permit holder.

(E) Soft-shelled clams must be two (2) inches or longer in shell length not including any clam meat or neck that may be protruding beyond the shell length. Mussels must be two (2) inches or longer. A two-inch gauge or ring for measuring must be used by the permit holder.

(F) Oysters must be three (3) inches long or longer when taken. A three-inch (3) gauge or ring for measuring must be used by the permit holder. The season for taking oysters is September 1 through April 30

(G) Razor clams must be four and one-half (4 ½) inches long or longer when taken. A four and one-half inch measuring gauge must be used by the permit holder.

(H) A commercial shellfish permit holder shall be allowed to take one 12-quart pail of oysters per week (in season) for family use only. No oysters may be sold.

(I) Soft-shell clams, quahaugs, mussels, sea clams, sea worms, and eels may be taken twelve months of the year.

#### SECTION 306. SHELLFISHING DEVICES

(A) The taking of shellfish from the waters and flats within the town of Chatham by any method other than that commonly known as the long-rake, scratcher, tong or clam-hoe is prohibited; (exception - see pumping, scallop dredging and hydraulic dredging regulations). No shovels, pitchforks, garden spades, etc., are allowed.

(B) Any person using any device which deviates from current shellfishing equipment as outlined in the shellfish rules and regulations must bring that device (before use) to the Shellfish Advisory Board for review. Each device must be reviewed on an individual basis with recommendations on its use given by the Shellfish Advisory Board to the Board of Selectmen for a decision on use.

(C) The taking of shellfish from waters and flats of the Town of Chatham with the aid and use of scuba (hooka) equipment, artificial breathing apparatus, is prohibited to persons holding a Commercial shellfish permit.

(D) No permit holder may use a basket rake that is in any way attached to the body. No permit holder may use a basket rake attached to a t-handle on dry ground or on shoal areas that may become dry at any time during the tidal cycle.

#### SECTION 307. TEMPERATURE REGULATIONS

(A) No permit holder may scratch or dig clams or quahaugs or razor clams on dry ground or on shoal areas that may become dry on any days tide when the air temperature as measured at the Harbormaster's Office at Stage Harbor reads under 30 degrees F. On days when the air temperature has not reached 30 degrees F. by 11:00 a.m., there will be no shellfishing for clams or quahaugs or razor clams on dry ground or shoal areas that may become dry on any days tide, regardless of any subsequent temperature reading. There will be a blue flag on display at the Town parking lot at Stage Harbor at all times when the temperature rule is in effect.

(B) No more than one scallop dredge may be emptied and culled on the culling board or in the boat at any one time when the air temperature reads under 30 degrees F.

#### SECTION 308. CULLING SHELLFISH

(A) All shellfish shall immediately be culled when harvested and all seed shellfish immediately returned alive to the coastal waters and flats whence taken.

#### SECTION 309. TRANSPLANTING, PLANTING AND INTRODUCING SHELLFISH

(A) No person shall plant, introduce or transplant shellfish in any waters or onto shellfish flats within the Town of Chatham without first obtaining a special permit from the Constable and/or Board to do so.

#### SECTION 401. GRANTS, CLOSED AREAS, FAMILY AREAS

(A) Shellfish grants are marked by number and name. The grant locations are posted on the shellfish bulletin board, Town Offices. No shellfishing may be done in these areas by any permit holder.

(B) No person shall take, or directly or indirectly injure, the shellfish contained in or on aquacultural devices or grants, municipal or private. No person shall injure, deface, destroy, remove or trespass upon, any municipal or private aquacultural device or any mark or bound used to define the extent of the municipal or private aquacultural enterprise, or tie or fasten any vessel thereto, or injure, deface, destroy, remove, or trespass upon any materials used as part of, or in conjunction with any municipal or private aquacultural and propagative enterprise so plainly marked.

(C) That area known as the Dike (Stage Harbor side) beginning from Johnson/Horne creek and continuing to the southerly end of the Dike to the small creek in front of the Asselin property, is closed to commercial permit holders to the taking of all shellfish (except scallops in season) General Laws, Chapter 130, Section 52.

(D) Any person holding a commercial permit may not use a family permit in the family designated area of the Dike; see Section 401 (C).

(E) Town shellfish grow-out areas are located throughout town waters, including, but not limited to, Mill Creek, Buck's Creek and Stage Harbor. These areas are covered in netting, marked with Chatham Shellfish Department buoys, and posted. No shellfishing may be done within the extent of the marker buoys when posted.

(F) Shellfish Grant Policy: The Town of Chatham does not issue aquacultural leases for any area within the Town of Chatham.

SECTION 402. RAZOR CLAM REGULATIONS

(A) The harvesting of razor clams and sea clams by salting (see 104. B. 25) is allowable provided there are no other species (such as soft-shelled 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.

(B) The taking of any other shellfish by this method is prohibited.

(C) Dry salting (salt not in a water solution) or broadcast salting (spreading dry salt over a tidal flat) is prohibited.

SECTION 403. SCALLOP REGULATIONS

(A) Complete scallop regulations are posted on the shellfish bulletin board, Town Offices, and three public places, previous to opening day of scallop season. The complete regulations will include commercial limits, opening date, hours, closed areas, etc. Such regulations are set yearly by the Board

(B) Dredging by all permit holders shall be from 6:00 a.m. until 4:00 p.m. only.

(C) Commercial permit holders may take scallops between the hours from 6:00 a.m. until 4:00 p.m.

(D) The taking of scallops commercially is prohibited on Sunday.

(E) There will be no dredging of scallops on Sunday under any permit.

(F) A commercial permit holder shall waive his right to scallop on his family permit on any day designated open to commercial scallop fishing.

(G) All scallops taken from the waters must be adult scallops with a well-defined growth ring or raised annulus. Any scallop without such a line shall be deemed a seed scallop. No person shall land or possess scallops without a well-defined growth line and that growth line shall measure at least 10 millimeters from the hinge of the shell.

Exception: Bay scallops that have a well-defined raised annual growth line located less than 10 millimeters from the hinge of the shell (also known as the "nub"), shall be lawful to harvest and possess if the shell height is at least 63.5 millimeters or 2.5 inches.

(H) No commercial, family, or non-resident family permit holder shall leave his boat, come ashore and/or land scallops, then return to the waters for the purpose of additional scalloping, without the permission of the Shellfish Constable or Deputy Constable.

(I) Scallop dredge frames shall not measure more than 36" in width and are to be the light construction type dredge. There are to be no "rakes" attached to dredge frames. Any variations of the dredge must have prior approval of the Shellfish Advisory Committee.

(J) Commercial permit holders are required to use plastic totes when commercially scalloping; see Section 104. B. 37 for measurement and use.

(K) Family and non-resident family permit holders are allowed to take one level bushel of scallops in the shell, per permit, per calendar/shellfish week. One bushel of scallops in the shell is not to exceed that contained in four (4) level eight-quart pails.

(L) No culling of scallops except in deep water.

(M) All bay scallops shall be taken ashore in the shell.

(N) All bay scallops shucked in Chatham, shall be opened on land in a facility approved and licensed by the Board of Health.

(O) Board of Health regulations pertaining to shucking operations and storage of scallops shall be adhered to by commercial permit holders.

SECTION 404. SOFT-SHELL CLAMS, PUMPING, HYDRAULIC, AND BY HAND

(A) The taking of any other shellfish by this method is prohibited unless otherwise regulated.

(B) Pumping of clams must be in 2' or more of water beyond the mean low water mark unless the exception is noted for a specific area. Additions or changes are posted on the shellfish bulletin board, Town Offices.

(C) Only Town of Chatham commercial shellfish permit holders are eligible to shellfish using the hydraulic dredge method.

D) Areas open to pumping using hydraulic methods and hand-plunger methods are:

1. The area adjacent to and southerly of "Outermost Harbor Marine" into a small basin easterly of Morris Island Road - 1' water depth, mean low tide.
2. The creek between Morris and Stage Islands - no water depth required.

Areas for hand-plunger only, as follows:

3. Part of the area on Monomoy known as the Powder Hole - 1' water depth, mean low tide.
4. Crows Pond - 1' water depth at mean low tide.
5. Muddy Creek - no water depth required.
6. Ryders Cove - 1' water depth at mean low tide

(E) Hydraulic or hand-pump method may be used only in those areas specified in Section 404, D 1-6, otherwise clams may only be taken by clam fork, clam hoe or by hand.

#### SECTION 405. MUSSEL REGULATIONS

(A) Equipment variations and size as follows:

1. No larger than 36" in width, traditional scallop dredge (no hydraulics).
2. No larger than a 36" tooth mussel dredge (no hydraulics).
3. No larger than a 24" cutting bar sea clam dredge (no hydraulics).
4. Regular pitchfork (mussels only).

(B) Limits - The commercial limit will be 50 bushels of mussels per man, per day, but in no case, more than 100 bushels per day, per boat.

(C) Containers for mussels must be regular see-through onion skin bags and/or Town of Chatham totes as defined in Section 104. B. 37.

#### SECTION 406. SEA CLAM AND HYDRAULIC QUAHAUG REGULATIONS

(A) Areas open to the taking of quahaugs by hydraulic dredging are:

Area A: The waters of Nantucket Sound within an area that is bounded by an imaginary line defined as follows, using GPS coordinates as points:

Originating at 41°39.391N, 69°59.556W, then northerly to 41° 39.728N, 69°59.772W, then northwesterly to 41°39.833N, 70°00.393W, then southwesterly to 41°39.579N, 70°00.874W, then westerly to 41°39.429N, 70°01.808W, then southwesterly to 41° 39.060N, 70° 02.313W, then southerly 41° 38.805N, 70°02.316W, then southwesterly to 41°38.496N, 70°02.581W, then westerly to 41°38.229N, 70°03.219W, then easterly to the green navigational "G3" buoy located at 41°38.306N, 70°02.861W, then easterly to the red navigational "N4" buoy located at 41°38.611N, 70°01.384W, then southeast to 41°38.559N, 70°01.054W, then easterly to 41°38.779N, 70°00.571W, then southeast to 41°38.873N, 70°00.131W, then northeast to 41°39.045N, 70°00.110W, then easterly to 41°39.391N, 69°59.556W.

Area B: The waters of Nantucket Sound within an area that is bounded by an imaginary line defined as follows, using GPS coordinates as points:

Originating at 41°38.559N, 70°01.054W, then southerly to 41°35.923N, 70°00.484W, then southwesterly to the western most tip of Monomoy Island. Area B is bounded to the west by the "three mile" town line as far north as 41°38.229N, 70°03.219W and then easterly to the red navigational "N4" buoy located at 41°38.611N, 70°01.384W, then southeasterly to 41°38.559N, 70°01.054W.

(B) Allowable catch for hydraulic quahaugs is 20 bushels per day per license with no more than 40 bushels per day per boat. Catch limits may be subject to change according to Massachusetts Division of Marine Fisheries.

(C) Quahaugs in any way fitting through a 2 ½-inch ring must be counted within a bushel (as defined in section 104 (B) (3)). The catch limit for quahaugs less than 2 ½ inches is ten bushels per license per day, not to exceed 20 bushels per boat per day. The catch limit for quahaugs over 2 ½ inches is ten bushels per license per day, not to exceed 20 bushels per boat per day.

(D) Hydraulic method may be used only in those areas specified in Section 406 (A); other quahaugs may be taken by long-rake, scratcher, tong, clam-hoe or by hand.

(E) No commercial permit holder shall leave his boat, come ashore and/or land quahaugs caught by hydraulic dredge, then return to the waters for the purpose of additional dredging for quahaugs, without the permission of the Shellfish Constable or Deputy Constables.

**(F) All other shellfish regulations pertaining to the taking of shellfish within Chatham waters pertain to this fishery**

(G) There will be no hydraulic dredging for quahaugs within one quarter of a mile of any fish weir in Chatham waters while said weir is in place and actively fishing. From May 1 – August 15 of any given year, there will be no hydraulic dredging for quahaugs in the area referred to as “Area A” (Sec. 406A).

#### SECTION 407. ENFORCEMENT AND SUSPENSION POLICY

(A) Shellfish permits issued by the Board of Selectmen, Town of Chatham, made under provisions of Chapter 130, shall not be transferable and shall be produced for examination upon demand of any authorized person.

(B) A person who aids or assists in a violation of any provisions, rules and regulations so adopted by the Board, or shares in any of the proceeds of said violation by receiving or processing shellfish, shall be deemed to have incurred the penalties imposed thereby upon the person of such violation.

(C) The harvest of shellfish, as authorized by the Board of Selectmen, shall be defined as the harvest by lawful means and in lawful manner. Any references to the harvesting, or having in possession of, any shellfish, shall include the harvesting, or having in possession of, any part or portion thereof.

(D) Any person found violating the shellfish rules and regulations of the Town of Chatham as provided by law under Chapter 130, shall be allowed a hearing with the Board of Selectmen. The permit holder shall be notified in writing by the Board of the violation(s) and given seven days in which to request a hearing on the shellfish violation(s) with the Board and the Shellfish Constable or Deputy Constable.

(E) A person found violating the shellfish rules and regulations of the Town of Chatham as provided by law under Chapter 130, may waive his right to a hearing and may accept the suspension as prescribed in writing by the Board and sign a waiver to that effect.

F) Unless specifically provided by law, every shellfish permit, held by a person who has been found to violate any of the laws relating to the shellfisheries, or any person who pleads nolo contendere, or admits to sufficient facts to an allegation of a violation of any such law, rule or regulation made under authority thereof by the Board of Selectmen, Town of Chatham, shall be suspended and inoperative for a period of seven (7) days for the second offense, one month (30 days) for the third offense, three months (90 days) for the fourth offense and one year for any subsequent offense. A written violation for a first offense shall constitute a warning.

G) If a permit holder who has been found to have violated any law, rule or regulation, as aforesaid, has committed no other such violations in the previous five (5) years, prior violations shall not be considered in determining the suspension period.

(H) All suspended or void permits shall be surrendered forthwith to any officer authorized to enforce the laws and rules and regulations of the Town of Chatham relating to the shellfisheries made under provisions of Chapter 130.

(I) No person whose permit has become suspended or void shall be given a new permit under authority of any provision of law relating to Chapter 130 during the period of suspension.

(J) Whoever violates any rule or regulation made under authority of Chapter 130, General Laws of Massachusetts, unless otherwise provided, shall be punished by a fine of not less than fifty (\$50.00) dollars, nor more than one thousand (\$1000.00) dollars. Chapter 130, Section 2.

(K) No fee received for a shellfish permit which has been suspended or revoked and canceled shall be refunded.

(L) Town By-Law affords enforcing persons a third option of enforcing these rules and regulations by non-criminal disposition. If the method of non-criminal disposition is used by an enforcing person, the specific penalties for a violation of these rules and regulations shall be:

Violation of	Penalty
Sec. 301, Par. A	Shellfishing without permit..... 100.00
Sec. 301, Par. D	Illegal transfer of permit..... 50.00
Sec. 301, Par. E	Using false identification.....50.00
Sec. 203, Par. A	Selling Shellfish without a permit..... 200.00
Sec. 301, Par. G	Possession of seed in excess of 5%..... 50.00
Sec. 305, Par. A, 1-6	Exceeding shellfish limit..... 25.00
Sec. 306, Par. A	Use of illegal implements, devices, contain .....50.00
Sec. 401, Par. B, C, D, E	Shellfishing in a closed area .....25.00
Sec. 301, Par. 1	Shellfishing in closed, contaminated area .....50.00
Sec. 307, Par. A, B	Shellfishing below temperature limits..... 25.00
Sec. 401, Par. A	Taking shellfish from shellfish grant..... 200.00
Sec. 403, Par. B, C	Taking scallops in non-designated scallop hours..... 200.00
Sec. 403, Par. D, E, F	Taking shellfish during closed season or day..... 50.00

**NOTES:**

# BEACH AND PARKS RULES AND REGULATIONS

**Jurisdiction:** The Town of Chatham Park and Recreation Commission has jurisdiction over the established public beaches and parks in the Town of Chatham, including the so-called “South Beach” established in 1987 by the break in Nauset “*North Beach*” in Chatham.

The following areas and facilities are overseen and under the jurisdiction of the Park and Recreation Department / Commission.

PARKS	BEACHES	OTHER
Chase Park	Cockle Cove Beach	Harding Beach Picnic Area
Kate Gould Park	Forest Beach	Rotary / with State DPW
Nickerson Park	Harding Beach: east and west of the Stage Harbor entrance cut	Veterans Field
Sears Park	Jackknife Harbor Beach	Little League Field
Veterans Park	Oyster Pond Beach	Chatham Community Center
Volunteer Park	Pleasant Street Beach	South Chatham Playground

	Ridgevale Beach	Depot Rd. Tennis Courts
	Schoolhouse Pond Beach	Skateboard Park w/Airport
	South Beach (Nauset Beach)	
	Lighthouse Beach	
	White Pond	

**Non-criminal penalties established herein will result from citation issued by Chatham Police Officers and or Constables.**

## **1. General**

1.1 Open fires of any kind are forbidden on any beach or in any park area. However charcoal or gas grills are allowed. Charcoal grills are available for public use in certain areas (Chase Park, Oyster Pond Beach). **Penalty - \$25.00**

1.2 Functions, gatherings or other unscheduled group activities in beach or park areas are prohibited except with written permission in advance from the Director of Parks and Recreation and or the Park and Recreation Commission. Groups are defined as 10 people or more. Such activities shall be limited to recognized organizations, residents, taxpayers or other groups obtaining proper Park and Recreation Department authorization. The person named on the permit agrees to assume responsibility for the group, and shall also be responsible for clean-up of the area and for the conduct of all members of the using group. Persons requesting permission for group use must be at least 18 years of age. A police officer will be on duty if deemed necessary by the Chatham Police Department and or Park and Recreation Department and the user shall pay all costs associated to providing police coverage. A fee, and or security deposit may be required to cover clean-up or any other expenses, as determined by the Director of Parks and Recreation and or the Park and Recreation Commission. **Penalty - \$100.00**

- 1.3 Littering of beach or Park areas with rubbish or refuse is prohibited and subject to penalty. The deposit of household trash, rubbish, refuse, or garbage in park or beach litter containers is prohibited. **Penalty - \$100.00**
- 1.4 Washing automobiles or other vehicles in park or beach areas is prohibited. The use of soaps, detergent, or similar items in ponds, beaches or park areas is not allowed. **Penalty - \$100.00**
- 1.5 The erection of tents and /or parking of trailers or mobile homes in park or beach areas is prohibited. No camping or sleeping after dusk is permitted in park or beach areas. **Penalty - \$50.00**
- 1.6 Animals in park or beach areas must be restrained. Defecation must be picked up and removed **Penalty - \$25.00**
- 1.7 Dogs, cats, horses and other livestock, domestic animals, ~~or~~ and pets are not allowed from May 1<sup>st</sup> to September 15<sup>th</sup> of each year in beach areas, with the exception of seeing-eye animals, and police K-9 animals. Domestic animals are prohibited on the playing fields of the: Little League Field, Veterans Field, and Volunteer Park. **Penalty - \$25.00**
- 1.8 No alcoholic beverages are allowed in park or beach areas at any time except with the written permission of the Board of Selectmen, and the Park and Recreation Commission. **Penalty - \$100.00**
- 1.9 Town of Chatham beaches and beach parking areas are officially closed from 10:00pm until one hour before sunrise. Parks are closed from 10:00pm until 6:00am, except at Veterans Field will close 30 minutes after the conclusion of authorized evening events. **Penalty - \$50.00**
- 1.10 No commercial vendors will be allowed in parks or at beaches without Park and Recreation Commission approval. Food vendors shall have Park and Recreation Commission authorization in writing and shall have a common Victaulic's and peddler's license and necessary Board of Health, Board of Selectmen permits, and will either have a resident parking sticker or pay current fees. No parking spaces are reserved or assigned except to concessionaires and beach personnel in the employ of the Park and Recreation Department. **Penalty - \$50.00**
- 1.11 Automobiles parked at any function shall be controlled by the organization in charge of the event.
- 1.12 Public nudity, including public nude bathing, by any person in parks or beaches under the jurisdiction of the Chatham Park and Recreation Commission is prohibited. Public nudity is a person's intentional failure to cover with a fully opaque covering that person's own genitals, pubic areas, or female breasts below an area below a point immediately above the

top of the areola when in a public place. Public place is any area of land under jurisdiction of the Chatham Park and Recreation Commission, except the enclosed portions of bathhouses, restrooms, or other public structures designed for similar purposes, or private structures permitted within the parks or beach areas. This regulation shall not apply to a person under 5 years of age. **Penalty- \$100.00**

- 1.13 Malicious damage and stealing of Town of Chatham property will be prosecuted to the full extent of the law.

## **2. PARKS**

- 2.1 No organized events are allowed in any Town park prior to 7:00 AM.
- 2.2 The parking of vehicles in park or beach areas for more than 16 consecutive hours is prohibited except by permission of the Park and Recreation Commission. **Penalty - \$50.00**
- 2.3 Sears Park has been established as a memorial. There shall be no loitering or picnicking in this area. **Penalty- \$25.00**
- 2.4 No solicitation of any type is permitted at Kate Gould Park. **Penalty - \$50.00**
- 2.5 No motor vehicles or trailers shall be operated in any Park except for Park and Recreation Department, police or emergency vehicles. **Penalty - \$50.00**
- 2.6 All commercial sale activities are prohibited in and/or on the: Little League Field, Veteran's Field, and Volunteer Park, except with the written permission of the Park and Recreation Commission. **Penalty- \$50.00**
- 2.7 After any authorized use whatsoever of parks and beaches, the grounds shall be left clean and orderly. **Penalty - \$50.00**

## **3. BEACHES**

- 3.1 The operation of boats, wind surfers, water skis or similar may not be conducted within 150 feet of designated swim areas, marked by buoys, at Cockle Cove Beach, Harding Beach, Oyster Pond Beach, Ridgevale Beach, and Schoolhouse Pond Beach, except for emergency or Police, Harbor Master or Park and Recreation Department boats. **Penalty - \$100.00**

- 3.15 No person shall enter the water in an area designated by the Park and Recreation Commission as a no swimming zone. If on any day a Chatham Lifeguard/Harbormaster determines that conditions in an area normally open to swimming are unsafe, they may prohibit swimming at that time subject to the same fine for a violation.
- \*\*\*\*\* See footnote** **Penalty - \$50.00**
- 3.2 Playing ball, use of Frisbees or skim boards in swim areas on beaches or in the water is prohibited except in designated areas designated by the Park and Recreation Commission. **Penalty - \$25.00**
- 3.3 The removal of sand, bushes or other growth is prohibited except by permission of the Park and Recreation Commission and Conservation Commission. **Penalty - \$100.00**
- 3.4 The digging, altering, grading or removal of any material so as to alter or change any watercourse, tidal flow, tidal basin, tidal flat, wetland, marsh, pond or lake within the parks and beaches under the authority of the Park and Recreation Commissioners without the necessary Town, County, State and Federal permits is absolutely forbidden and will be prosecuted to the full extent of the law.
- 3.5 Beach buggies, recreational vehicles, off-road vehicles and any other vehicles are forbidden to traverse beaches, dune areas or parks, except for Park and Recreation Department, Harbormaster Department or emergency vehicles. **Penalty - \$200.00**
- 3.6 Destruction of dunes is prohibited. Use established paths and walkways as marked. **Penalty - \$200.00**
- 3.7 No children under 10 years of age may attend any beach unless accompanied by an adult. Any minor child on a beach or park of the Town is the responsibility of the minor child's parents and or guardian or other person/person's who may be in charge of minor children, as in the case of picnics, group gatherings, school or church outings or field trips, or any other group functions. **Penalty - \$25.00**
- 3.8 After the official closing time (10:00 p m) persons at the beach must actually be engaged in fishing.
- 3.9 No person shall use rafts, rubber tubes, any flotation device, or scuba gear as swimming accessories in a designated swim area, except for rescue and U.S. Coast Guard approved type flotation Life Jackets. **Penalty - \$25.00**
- 3.10 No person shall operate any motor vehicle in any park or beach area at a rate of speed greater than 15 miles per hour. All state motor vehicle laws are applicable in park and beach areas. **Penalty - \$25.00**

- 3.11 Parking is only allowed in designated parking spaces. All marked roadways, lanes and emergency vehicle lanes shall be kept open and free of parked vehicles at all times. Any blocking vehicle may be towed at the owner's expense, together with a **penalty of \$50.00**.
- 3.12 No vehicle other than wheelchairs shall traverse or stand on any vegetated area or use any handicap ramp. **Penalty - \$25.00**
- 3.13 Protective measures around nesting Plover areas and other shore birds are to be preserved and not entered. **Penalty - \$50.00**
- 3.14 No glass containers allowed at beaches. **Penalty - \$50.00**

Certain of the above rules and regulations may be suspended from time to time by majority vote of the Chatham Park and Recreation Commission.

The above rules and regulations do not, nor are they intended to, supersede, take the place of, replace, make void or repeal any Town of Chatham By-Law, any County By-Law, any State Law, Federal Law or any fines or legal punishments that are applicable in any instance.

**CHATHAM PARK AND RECREATION COMMISSION**

\_\_\_\_\_  
J. Chris Cannon - Chair

\_\_\_\_\_  
W. Gary Anderson - Vice Chair

Commissioners: \_\_\_\_\_  
John B. Summers

\_\_\_\_\_  
Joyce Reynolds

\_\_\_\_\_  
Robert Dow

\_\_\_\_\_  
Michael Seidewand

\_\_\_\_\_  
Michael Brady

As adopted and voted at the Park and Recreation Commission meeting of: May 23, 2007

**\*\*\*\*\* General - 1.7 Dogs regs on beaches -** was adopted at the Park & Recreation Commission Public Hearing on April 27, 2010