

Appendix M



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Short-billed dowitcher

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

Introduction

In May 2012, the U.S. Fish and Wildlife Service (Service, we, our) completed the draft comprehensive conservation plan and environmental impact assessment (draft CCP/EIS) for Prime Hook National Wildlife Refuge (NWR, the refuge). The draft CCP/EIS outlines three alternatives for managing the refuge. Alternative B is identified as the “Service-preferred alternative.”

We initially released the draft CCP/EIS for 69 days of public review and comment from May 31, 2012 to August 6, 2012. In response to public requests, we extended that period another 20 days, to August 27, 2012. We also held 7 public meetings in Milford, Milton, and Lewes, Delaware. We evaluated all the letters and e-mails sent to us during that comment period, along with comments recorded at our public hearing. This document summarizes all of the substantive comments we received and provides our responses to them.

This document summarizes the public comments that raised issues and concerns within the scope of this final CCP/EIS and our responses to them. Based on our analysis in the draft CCP/EIS and our evaluation of those comments, we have modified alternative B, which remains our preferred alternative in the final CCP/EIS. Our modifications include additions, corrections, or clarifications of our preferred management actions. We have also determined that none of those modifications warrants our publishing a revised or amended draft before publishing the final CCP/EIS.

There are some important changes in the final:

- We clarified under alternative B, objectives 1.1 and 3.1 that we feel that dune restoration is a potential, and even likely, first step in our proposal to restore marsh habitat. We also reiterated that we would only plan to restore the dunes as part of the comprehensive marsh restoration, not as separate action.
- We revised the strategies under alternative B, objective 3.1 and our analysis in chapter 5 to provide some additional analysis of other shoreline modification and wave attenuation strategies, such as living shorelines and wave attenuation structures.
- We reduced, expanded, or modified different hunting strategies to be responsive to public concerns, be more consistent with state regulations, and eliminate confusion for hunters and non-hunters alike.
- We revised alternative B, objective 5.1a to no longer propose opening the refuge to white-tailed deer hunting on Prime Hook Creek.
- We revised alternative B, objective 5.1b to allow waterfowl hunting 4 days per week until 3:00 pm in all waterfowl hunting areas to be consistent with State hunting regulations.
- We modified our proposed waterfowl hunting areas under alternative B, objective 5.1b. Open areas now include:
 - * Unit I (open to free-roam hunting)
 - * Unit III (south of Prime Hook Road - open to free-roam hunting; lottery hunt area that now includes the area south of the Headquarters Ditch and six blind locations)
 - * Unit IV (disabled blind only)
 Closed areas now include:
 - * The area near Prime Hook Beach for disabled hunters is now closed and all disabled waterfowl hunting will be in the current wheelchair accessible blind in Unit IV.
 - * Areas of free-roam hunting along the Broadkill River and hunting west of Foord’s Landing on Prime Hook Creek are now closed.

- We revised alternative B, objective 5.1b to update information on the non-ambulatory waterfowl blinds on the Island Farm. We now propose to issue permits by preseason lottery drawing for first 2 days of each waterfowl season split; days thereafter will be first-come; first-serve.
- We removed the number of proposed waterfowl blinds sites under alternative B, objective 5.1b because the habitat is constantly changing. The number of blind sites will be a function of the habitat conditions when the CCP is implemented.
- We revised alternative B, objective 5.1 to permit snow goose conservation hunting in only wetland areas (no conservation order hunting in the uplands).
- We revised alternative B, objective 5.1d to allow turkey hunting until 1:00 pm on the refuge to be consistent with State hunting regulations.
- We revised alternative B, objective 5.1d to state that the number of turkey hunting numbers may be increased or decreased from the proposed five hunters based on trends in population data.
- We revised alternative B, objective 5.1 to require that all disabled hunters to have an assistant.
- We clarified our proposal for red fox hunting under alternative B, objective 5.1c. We propose to offer red fox hunting opportunities concurrent with deer hunting season. We will not allow chase hunting and will not permit centerfire and rimfire rifles.
- We revised alternative B, goal 5 to continue to allow year-round access to the western 4 miles of Prime Hook Creek for visitors engaged in uses such as wildlife observation, wildlife photography, and fishing.
- We updated the following information under alternative B, objective 5.2:
 - * We updated the number and length of existing and proposed trails to 14 trails covering 9.9 miles.
 - * We propose rerouting Slaughter Beach Trail due to changes in habitat, including adding a new parking area on the existing interior road and some minimal vegetation removal.
- We revised alternative B, objective 5.3 to allow fish and crabbing on the pull-offs along Prime Hook Road. We also clarified that the regulations for catch and release and use of barbless hooks will only occur west of Foord's Landing on Prime Hook Creek. These regulations may be revised as fishery population dynamics change.
- We have decided to permit the use of adulticides for mosquito control when there is a documented human disease threat, instead of only when a public health emergency is declared. We have modified a strategy under alternative B, objective 1.2 to state that we will allow the use of adulticides on the refuge once DMCS's surveillance program has detected a detected a mosquito-borne human health threat on the refuge or within the flight range of vector mosquitoes (approximately 5 miles from the refuge).

Our Regional Director will issue a final record of decision (ROD), after

- We provide the final CCP/EIS to interested or affected parties for a 30-day period of review, and
- Our Regional Director reaffirms that the final CCP supports the purpose and need for the CCP, achieves the purposes for which the refuge was established, helps fulfill the mission of the Refuge System, and complies with all legal and policy mandates.

Once she has signed and dated the ROD, we will publish a notice of the availability of the final documents in the *Federal Register*. That notice will complete the planning phase of the CCP process, and we can begin its implementation phase.

Summary of Comments Received

After the comment period ended, we compiled all of the comments we received, including all letters, e-mails, and comments recorded at public meetings. In total, we received 106 separate written responses and 18 oral comments from the public meetings. The separate written responses we received represent 150 different signatures. We also received 1,024 copies of a single form letter, as well as an online petition signed by 522 individuals.

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

- Delaware Department of Agriculture
- Delaware Department of Natural Resources and Environmental Control (DNREC)
- Delaware Department of Transportation (DelDOT)
- DNREC - Division of Fish and Wildlife, Mosquito Control Section
- Delaware Historical and Cultural Affairs
- Delaware State Senator Gary Simpson
- Sussex County Councilwoman Joan Deaver
- Town of Slaughter Beach, Delaware
- U.S. Environmental Protection Agency (EPA)

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

- Alliance of Bay Communities
- Broadkill Beach Preservation Association
- Canoe Cruisers Association of Greater Washington, D.C.
- The Center for Food Safety
- Defenders of Wildlife
- Delaware Audubon Society
- Delaware Chapter of the Sierra Club
- Delaware Riverkeeper Network
- Delaware Votes for Animals
- Delmarva Ornithological Society
- Ducks Unlimited
- The Humane Society of the United States
- The Pegasus Foundation
- Prime Hook Beach Organization
- Public Employees for Environmental Responsibility (PEER)

In the discussions below, we address and respond to every substantive comment we received. Substantive comments are those that suggest our analysis is flawed in a specific way. Generally, substantive comments meet at least one of the following criteria:

- Challenge the accuracy of information presented.
- Challenge the adequacy, methodology, or assumptions of the environmental or social analysis and supporting rationale.
- Present new information relevant to the analysis.
- Present reasonable alternatives, including mitigation, other than those presented in the document.

Our discussion does not include responses to non-substantive comments.

In order to facilitate our responses, we grouped similar comments together and organized them by subject heading. Directly beneath each subject heading, you will also see a list of unique letter identification (ID) numbers. Table X.1 at the end of this appendix relates each letter ID number to the name of the individual, agency, or organization that submitted the comment.

In several instances, we refer to specific text in the draft CCP/EIS and indicate how the final CCP/EIS was changed in response to comments. The full versions of both the draft CCP/EIS and the final CCP/EIS are available online at: <http://www.fws.gov/northeast/planning/Prime%20Hook/ccphome.html> (accessed December 2012). For a CD-ROM or a print copy, please contact staff at Prime Hook National Wildlife Refuge:

Prime Hook National Wildlife Refuge
11978 Turkle Pond Road
Milton, DE 19968
Phone: 302/684 8419

Service Responses to Comments by Subject

Comprehensive Conservation Planning and Process Planning Process

(Letter ID#:25, 30, 45, 61, 69, 81, 105)

Comment: One individual felt that since the CCP process for Prime Hook NWR started in 2005, “arbitrary and capricious management actions have predominated and prevailed from 2005 to 2012 refuge management.” Other commenters made similar comments.

Response: The CCP process is forward looking, to guide future management. It is difficult to respond with specifics to this statement because it is so general in its criticism. Some of the approaches in management which occurred prior to 2005 are being considered for re-institution, examined as Alternative C. Some of the refuge’s prior practices were challenged in court and led to changes in management, such as the cessation of the use of genetically modified seed, which is prohibited by national Service policy. Some former actions, such as restoring the dune separating Unit II from Delaware Bay, were attempted to be initiated, and after a court challenge, were allowed, only to fail within days in another storm. Some restoration of the dune is encompassed as a possible action under Alternative B, as a component of a major salt marsh restoration plan.

Although NEPA applies to many Federal actions, there are also some types of activities to which it does not apply. Page 5-6 of the draft CCP/EIS describes some of the actions that would be “categorically excluded” from further NEPA analysis if independently proposed, such as recurring and routine habitat management actions and improvements, constructing small projects, or issuing new or revised management or public use plans when only minor changes are planned. Furthermore, page 4-4 of the draft CCP/EIS specifies “Actions Considered but Eliminated from Detailed Analysis”, which include refuge boundary expansion, and specific engineering methods to stabilize the shoreline. The draft CCP/EIS does not complete the NEPA process, but is rather one part that continues the process through the Record of Decision.

Comment: A few individuals feel like the planning process for the CCP/EIS was incomplete because the document, “rather than define and describe the tactics by which the Fish and Wildlife expects to implement their preferred Alternative B, the CCP is replete with items that are such things as to develop more plans, initiate coordination, do more studies, build more models, etc. All of these things [should have been completed prior to releasing the draft CCP/EIS].”

Response: According to refuge planning policy, “the CCP is a document that describes the desired future conditions of a refuge or planning unit and provides long-range guidance and management direction to achieve the purposes of the refuge; helps fulfill the mission of the Refuge System; maintains and, where appropriate, restores the ecological integrity of each refuge and the Refuge System; helps achieve the goals of the National Wilderness Preservation System; and meets other mandates.” In other words, it is designed to be a broad umbrella document that is supported by subsequent planning efforts that will adhere to the guidelines and vision set forth in the CCP. “Step-down management plans will provide additional details (strategies and implementation schedules) necessary to meet goals and objectives identified in the CCP.”

Comment: A few individuals were interested in how much it cost to write the “1200 page CCP” and wondered if this money could have been better spent fixing the breaches. Several others were concerned about the length of time it took to prepare the draft CCP/EIS and the quality of the document.

Response: Typically it takes 3 years to produce a draft CCP. However, the Prime Hook plan was delayed several years for many reasons, including rapid habitat changes from storms and dune breaches, lawsuits against the Service for cooperative farming and dune repairs, and the complexity of issues requiring the thorough review of an environmental impact statement rather than an environmental assessment. Nationally, the costs to develop a CCP can range from \$200,000 to \$700,000 for an EA, and \$500,000 to \$1.5 million for an EIS. We estimate that the Prime Hook CCP has cost approximately \$900,000, primarily for Regional Office planning and refuge staff. Some of the estimated total figure also includes funds for consultants, travel and printing. Although some people may believe that this amount of money would be better spent on other activities, we are nevertheless required by law to develop a CCP that meets all mandates.

Comment: The Sierra Club writes, “Given the scale of sea level rise that the CCP seeks to address, fifteen years is an inadequate time frame to consider the long-term wildlife and habitat needs. We encourage the U.S. Fish and Wildlife Service to look beyond the immediate concerns presented in the CCP and consider a long-term strategy to habitat and wildlife protection.”

Response: Although the CCP is a long range plan that will guide management at the refuge over the next 15 years, we have seriously considered wildlife and habitat needs that extend beyond just the life span of the plan. As we state on page 1-2 of the draft CCP/EIS, “this CCP is designed to address management and protection of valuable natural resources into the future, a future where continued change is even more likely to occur.” Furthermore, the Service is developing a framework, called Strategic Habitat Conservation, upon which future conservation efforts will be built. It is primarily a field-based approach for making management decisions about where and how to deliver conservation most efficiently to achieve specific biological outcomes. Through adaptive management, we will constantly reassess and improve our approaches.

Public Involvement

(Letter ID#: 6, 24, 25, 45, 58, 75, 81, 100, 104, S18)

Comment: A few individuals were concerned with the amount of time given for public review, considering the length of the draft CCP/EIS.

Response: Generally, a minimum of 45 days is required for an EIS. In practice, many Federal agencies enhance the opportunities for public and agency participation in the NEPA process by allowing longer review periods, such as 60 days. For the draft CCP/EIS, we extended the public comment period to a total of 89 days. We also made available a newsletter that summarized the draft CCP/EIS, and provided open house events to provide additional clarification of the document.

Comment: Many commented on the requirement for the Service to respond to substantive public comments. For example, the authors of one letter wrote, “We expect that the FWS will follow NEPA requirements concerning comments received on this [draft CCP/EIS]....”

Response: This appendix includes our responses individually and collectively to comments received on the draft CCP/EIS. As many of the comments were very long and voluminous, we often summarized the substantive comments. Comments that are identical or very similar have been grouped. We follow NEPA requirements concerning all comments received on the draft CCP/EIS.

Comment: There was concern that the Service has already decided on its management direction and will ignore public input. One commenter writes, “it would appear to me that the term “draft” [CCP/EIS] is misleading. This is stated because it is likely that history will repeat itself with respect to ignoring public input regarding the “experts” proposal(s)...I’m going on record as suggesting that, unless input is consistent with the “preferred alternative”...said input will once again be ignored.”

Response: We have listened actively throughout this planning process, and will continue to do so even after we publish the final plan. We have considered many requests and, although we cannot satisfy every one of them, we have done our best to accommodate them when we could. For example, modifications to the hunting program between the draft and final plan came about largely from public comments. We want the public to feel that their voices have been heard in the modifications we have made. We recognize that increased outreach throughout the planning process might have alleviated some of the frustration voiced in the public comment period, and are committed to providing additional outreach in planning refuge activities in the future.

Document

(Letter ID#: 11, 24, 25, 27, 28, 65, 70, 80–Petition, 81, 104, 106, S5)

Comment: Several individuals pointed out statements in the draft CCP/EIS that they felt were inconsistent or incorrect:

- (1) On page B-92 of the draft CCP/EIS, we stated that we would “permit that natural replenishment of sediments...to allow the marsh to keep pace with sea level rise.” The authors of one letter felt this contradicted with other statements we made that “natural replenishment of sediments cannot occur at sufficient enough rates” and asked us to remove the sentence from page B-92.
- (2) The authors of this letter also felt that discussion on overwash in the draft habitat management plan is not reasonable and is therefore questionable. They asked us to delete this section because it discusses people’s feelings, which are not “germane” and are “prejudicial.”
- (3) The same authors felt that, “There is significant omissions in the CCP regarding the actions [the Service] will take in emergency situations. The CCP must be explicit as to the decision process [the Service] will employ in deciding when and what actions must be undertaken in cases of emergency ... the refuge manager’s authority to be exercised to undertake immediate repair of the breaches and mitigating the risk of further damage to the environment and public safety..”
- (4) Another individual pointed out that our discussion on mosquito control activities was placed under the heading “Other Recreation” on page 4-179 of the draft CCP/EIS.
- (5) Several commenters stated that the CCP is deficient because it does not address the impact of the visual changes and appearance changes resultant from the selection of each of the Alternatives.
- (6) Several commenters noted that in several places throughout the draft CCP/EIS, the Service states that habitat management programs, which were conducted on the refuge for several decades, had been stopped in recent years either “for various reasons” or “for a variety of reasons”. Not once does the Service articulate a single reason or provide any rationale for their actions (or in this case lack of action).

- (7) One individual points out that the correct Latin name for the marbled underwing is *Catocala marmorata* (page B-35 of draft CCP/EIS) and for the beach dune tiger beetle is *Cicindella hirticollis* (page D-1).
- (8) One letter pointed out that there is an inconsistency on page B-92, in the Habitat Management Plan in appendix B. It states that the use of “assisted accretion” may be appropriate where it is determined that natural replenishment of sediments is not sufficient. The commenter points out that this determination has already been made.
- (9) One individual stated, “There is a contradiction on *Phragmites* control in comparing the last paragraph on this page with the 8th bullet on Pg 101. Pg B-98 indicates control is needed for *Phragmites*, while Pg 101 indicates it should stop being treated to allow faster accretion in the salt marshes.”
- (10) One individual points out that the draft CCP/EIS “incorrectly state[s] new trails in hunting areas are closed on Sundays. I think you meant to write ‘except on Sundays’ (example page 4-177).”
- (11) One individual points out that several maps in the draft CCP/EIS “incorrectly imply that Petersfield Ditch and Headquarters Ditch are open (not closed) during hunting (example page 4-67).”
- (12) One individual feels that the CCP should include a spreadsheet or other chart showing the timing of actions proposed in the plan.

Response:

- (1) We do not agree there is a contradiction. This is one of many proposed strategies that address climate change and sea level rise adaptation. It is immediately followed by the statement “where it is determined this will not be sufficient to overcome elevational capital deficits, the use of artificial renourishment or ‘assisted accretion’ may be appropriate.” In other words, reliance upon natural replenishment alone may not be enough under the current situation.
- (2) We removed the referenced text from the Habitat Management Plan (HMP).
- (3) The Service determined the dune repairs were not an emergency, and that NEPA review should be conducted prior to restoring the marsh system including the dunes. The CCP/EIS is a part of that process. The basis for this decision dates back to the repeated need over the years to conduct similar work along the beach. In addition, repairing the dunes alone will not eliminate future flooding of Prime Hook Road during extreme high tide and storm events, since sections of the road are 18 inches below spring high tides and floodwaters enter the road and parts of the community through locations other than the existing breaches. Also, the flooding of the public road to Prime Hook Beach is not a unique situation in that several other public roads providing primary access to communities in coastal Delaware routinely flood during high tide and storm events.

Several factors help to reduce the risk of personal injury, loss of life, and property damage should a flood emergency occur. These include the National Weather Service’s warning system to provide residents advance warnings to take appropriate action before a major storm event and the availability of medi-vac helicopters services. The refuge’s online monitoring system also provides information to help members of the public assess when the road may be threatened with flood waters.

- (4) We removed the referenced text of mosquito control from “Other Recreation.”
- (5) In Chapter 4 “Developing Alternatives, Including the No Action Alternative” we explain the environmental baseline is difficult to fully access due to dramatic changes the refuge has and continues to go through. Alternative A serves as a baseline for comparing and contrasting Alternatives B and C. Although the draft CCP/EIS does not specifically mention the visual impacts, the document does address the loss of freshwater vegetation, stresses/dying trees, and other associated changes with the saltwater intrusion into the refuge. We have added appropriate text to chapter 5 of the final CCP/EIS “Wildlife Observation and Photography” sections to address potential visual and appearance effects.

- (6) In every instance referenced, the phrase was used in an attempt to be brief when referring to multiple programs in one sentence, which were stopped for different reasons. The reasons for recent changes in each of the management programs in question were always explained elsewhere, where that program was being discussed specifically. For example, the changes associated with wetland management are explained on page 4-1, in the subsection titled “The environmental baseline,” and again on in the introduction to Alternative C. The changes associated with the farming program are explained in detail in the introduction to Alternative C and also in the rationale for Objective 4.1 under Alternative C.
- (7) Thank you. We have corrected these errors.
- (8) This strategy bullet within the HMP has been clarified to indicate that it refers primarily to existing salt marsh in Unit I. In the last bullet for that objective, we address the expected creation of new salt marsh in Unit II and possibly Unit III, and direct the reader to Objective 3.1 for more details. Strategies in Objective 3.1 explain how refuge will pursue various strategies that will assist or accelerate accretion.
- (9) There is no contradiction. Pg. B 78 refers to *Phragmites* control in forested wetlands while pg. 101 refers to *Phragmites* control in saltmarshes.
- (10) Thank you. We made the change.
- (11) Thank you. We updated the maps.
- (12) We agree the proposed actions or timeline is often difficult to follow. While the objectives usually contain a time reference for implementation, many factors make it difficult if not nearly impossible to paint a fully accurate timeline. These factors include budgets, staffing, permitting, and adaptive management strategies.

Comment: One commenter states that the CCP has not integrated all new relevant knowledge and site conditions.

Response: Many portions of the CCP have been updated regularly throughout the CCP process, including during the final editing stage. All the most current data available regarding refuge programs and resources has been included and up-to-date research has been consulted.

Comment: One individual writes, “This CCP process began in 2005. Current management ([Alternative] A) baseline for impact analysis and environmental consequences should have been 2005.”

Response: We explain on page 4-1 and 4-2 of the draft CCP/EIS our rationale for the required no action alternative. Due to the habitat changes that naturally occurred on the refuge during the prolonged planning process, we assumed the baseline for our analysis to be the condition of the refuge as of mid-2012.

Statutory Authority: Laws, Policies, and Executive and Secretarial Orders

(Letter ID#: 21, 24, 27, 36, 62, 64, 70, 71, 80–Petition, 81, 82, 104, 105, 106, S1, S5, S9, S18)

Comment: One individual feels that the refuge should have had to write an EIS for its decision to not repair breaches at Fowler’s Beach, writing “It was the most significant environmental decision affecting the Refuge in its 50-year history, and yet, no environmental impact assessment was completed.”

Response: Determining whether or not an EIS was appropriate for the referenced past action is beyond the scope of this planning process, and CCP/EIS. However, an environmental assessment was completed, and efforts to restore the dune line one more time while management and restoration plans could be developed were made by DNREC, in coordination with the refuge, in September 2011.

Comment: Several individuals and groups feel NEPA and the Refuge Improvement Act may have been violated by constructing new trails and expanding refuge uses without compatibility determinations or public review. For example, the Humane Society charge the following changes were made without NEPA compliance or compatibility determinations: changes in the types of species hunted, changes in the number of hunting days, commercial farming, the use of genetically modified organism crops, trail improvements, new boardwalks, photography blinds, and trash collection areas. Similarly, one individual writes, “New trails...totaling over 6 miles, were planned, built and opened without a new CD/EA and required public review...”

Response: The Service recognizes that some trails, a public observation tower, and other facilities were constructed without following all compliance procedures a number of years ago. More recently, the Service tried to rectify this by the closing a boardwalk and tower, closing a deer hunting area, eliminating some duck blinds, and removing the recycling center. However, we respectfully disagree that we have not conducted an analysis of these programs during this planning process and the draft CCP/EIS. One purpose of the CCP process is to evaluate the environmental impact of facilities which may not have undergone earlier NEPA review and whether or not these facilities or activities are appropriate and compatible and whether or not, after evaluation, they should be constructed or opened, or removed or closed. Objectives and strategies can be found in Chapter 4, Objective 5 and the potential impacts are covered in the various sections of Chapter 5. Furthermore, compatibility determinations for *all proposed or existing uses* are updated and included as an appendix in this document.

Comment: The Humane Society of the United States, The Pegasus Foundation, and Delaware Votes for Animals feel that the draft CCP/EIS is inadequate because it fails to comply with Federal laws, including the National Environmental Policy Act and Council on Environmental Quality guidelines; the National Wildlife Refuge System Administration Act, as amended by the National Wildlife Refuge Improvement Act; and the Administrative Procedure Act. The reasons they cite include the following:

- The refuge has been pre-decisional and the draft CCP/EIS “seems designed to justify the decision that the [Service] has already decided to make...”
- The draft CCP/EIS fails to support the refuge’s purpose to provide “an inviolate sanctuary for migratory birds, and ensure wildlife conservation.”
- The draft CCP/EIS “fails to present viable alternatives to the increased or continued killing of wildlife and destruction of wildlife habitat...”
- The draft CCP/EIS “fails to comprehensively and candidly consider the impacts of the chosen alternative on refuge habitats or wildlife...”
- The draft CCP/EIS “fails to present required compatibility determinations for new or expanded potentially destructive uses of the PHNWR and fails to conduct the required analysis of the destruction and degradation that would occur to wildlife habitats and wildlife as a result of Alternative B.”

Response: The Service respectfully disagrees. The CCP/EIS presents viable alternatives in Chapter 4 and analyzes the impacts of those alternatives in Chapter 5. The compatibility determinations are located in Appendix E. More detailed responses to the above comments are found later in this appendix.

Comment: One commenter and the Town of Slaughter Beach noted “that the Refuge Improvement Act declares that all existing or proposed refuge uses must be ‘compatible’ with the refuge purpose and consistent with public safety... The plan fails to address public safety in critical areas.”

Response: Per Service policy 603 FW 2 a compatible use is defined as “A proposed or existing wildlife-dependent recreational use or any other use of a national wildlife refuge that, based on sound professional judgment, will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purposes of the national wildlife refuge.” Public safety is a primary concern for the refuge and is considered in our compatibility determinations.

Comment: Several commenters stated that the CCP is not compliant with Executive Order (EO) 11988 regarding floodplain management.

Response: EO 11988 Floodplain Management requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modifications of flood plains, and to avoid and indirect support of floodplain development where there is a practicable alternative. Under this order the federal agencies “shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains.” The CCP is consistent with EO 11988 because the implementation of the preferred alternative would assist in restoring the natural ecological values of Prime Hook’s barrier island and marsh system. Restoring the natural hydrological function of these units provides valuable ecosystem services such as a storm surge protection and flood protection.

Comment: Several commenters stated that the CCP is not compliant with Executive Order (EO) 13352 regarding the facilitation of cooperative conservation.

Response: EO 13352 seeks to ensure that laws relating to the environment are implemented “in a manner that promotes cooperative conservation, with an emphasis on appropriate inclusion of local participation in federal decision making.” Throughout the CCP process the public has been provided many opportunities to participate and/or comment on our plans (refer to chapter 6 for more information). In addition, as stated above restoring the natural hydrological function of the impounded marshes provides valuable ecosystem services such as storm surge protection and flood protection, which minimize the impacts of floods on the communities.

Comment: Several commenters noted “The CCP failed to address applicable NEPA regulations concerning the impact of actions on surrounding communities. In particular 42 USC§4331 states that it is the continuing responsibility of the Federal Government to use all practicable means ... to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may ...attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences. The alternative A and, to an unknowable extent (depending on the efficacy of ill-defined drainage actions), the preferred alternative B, will lead to continued flooding of the Prime Hook community and the roads leading into it.” Additional comments allege that the Service has an obligation to address public safety impacts due to coastal storms and flooding to development located on the barrier islands, with citations including 42 USC 4331 and other Executive Orders or policies.

Response: Alternative A is the no action alternative required by NEPA regulations, and serves as a baseline for comparing and contrasting alternatives B and C. Alternative B includes continued coordination with DelDOT, the state agency which is responsible for the access roads to the Prime Hook community. Hurricanes Katrina, Sandy, and other storms have increased public awareness of the risks from coastal storms and climate change to construction located in low-lying coastal areas. This has generated some calls for changes to existing FEMA and state and local programs. The Service’s mission charges it with protection and conservation of wildlife habitats and migratory birds; these other agencies are responsible for developing appropriate policies for existing development located on risky coastal areas such as barrier islands. We will continue to coordinate our habitat management with programs of other agencies. We believe that implementation of the preferred alternative would assist in restoring the natural ecological values of Prime Hook’s barrier island and marsh system, and restoring the natural hydrological function of these units provides valuable ecosystem services such as a storm surge protection and flood protection.

Some homes in the Prime Hook Beach community will continue to flood more than others due to a number of environmental factors that include the loss of water-absorbing marsh vegetation, the frequency and intensity of storm events, and sea level rise. Of the 140 homes recently surveyed at Prime Hook Beach, 40 percent were built below the 100-year floodplain as established by the State and the FEMA. In the long term, the Service's marsh restoration actions are expected to lessen, but not eliminate, the impact of sea level rise and storm events that contribute to flooding in the community. Impacts on health and safety are considered in the CCP/EIS as well as all compatibility determinations. We believe that the analysis presented in the CCP/EIS indicates that implementation of the preferred alternative would not result in any significant or negative human health or safety impacts.

Comment: "There is a significant omission in the CCP. The environmental impacts of non-actions by the FWS as well as actions must be fully addressed. The decision not to repair the breaches by the FWS is an example of an action/non-action by the FWS for which the full environmental impacts must be evaluated."

Response: The CCP/EIS outlines three alternatives and their associated impacts, of which one, Alternative A, the current condition or no action alternative is evaluated.

Comment: Several commenters pointed out that the FWS policy that requires that degraded environments be restored was not considered, and that this consideration influences the selection and support for tactics under the alternatives.

Response: We have integrated the principles and guidelines of the Service's biological integrity, diversity and environmental health (BIDEH) policy into all aspects of our comprehensive conservation planning and included them in crafting the alternatives, goals and habitat objectives in the CCP/EIS. We have especially focused on and considered the degraded environments and the lost and degraded elements of BIDEH of the refuge's various habitat types, especially of refuge wetlands. The foundation of our preferred alternative (B) is the proactive restoration of our degraded impounded wetland complex. This is completely consistent with the Service's BIDEH policy, which encourages that habitats be restored to environmental conditions prior to significant human intervention. We have based our analyses of restoring lost and degraded elements of our impounded wetland areas on refuge specific research data collected and a review of wetland health and restoration literature. We are continuing to collect more data and information to optimize the success of any specific restoration actions that we may conduct.

Comment: Several commenters noted that the Service's own policy of requiring staff to apply "adaptive management" protocols to the administration of its wildlife refuge resources as evidenced in this CCP should be graded "F" and stated that the Service needs to apply its own adaptive management standards to the draft CCP .

Response: There is no Service policy on adaptive management, but rather the Service functions under the Department of the Interior Policy regarding adaptive management (522 DM 1). Adaptive management is defined in the policy as "a decision process that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood." This explicit definition has been clarified in the beginning of chapter 4, of the final CCP/EIS, under Actions Common to All Alternatives, where adaptive management is discussed.

We have applied the Service's adaptive resource management standards by identifying management strategies and coupling them with monitoring targets to evaluate the success of actions once implemented. In fact, the refuge's proposed shift from failed freshwater impoundment management to restoration of natural salt marsh represents adaptive management in action, as we recognize what has not worked, propose various strategies that we will employ to achieve the restoration, and explicit programs to monitor success of those strategies as we go so that we may adapt as needed. We will develop a new inventory and monitoring plan, also required by Service policy, as a step-down from the CCP. This plan will further detail the what, when, and how often we will monitor habitats, abiotic factors and wildlife species and how we will record and analyze the data, in order to evaluate management and adapt as needed.

Purpose and Need

Refuge Purposes, Refuge Establishment, and Land Acquisition History

(Letter ID#: 2, 10, 27, 33, 35, 39, 42, 46, 48, 49, 54, 55, 61, 64, 66, 70, 71, 78, 80–Petition, 81, 82, 86, 88, 98, 102, 105, 106, S2, S4)

Comment: Numerous individuals commented on two press releases made by Secretary of the Interior Udall in February 1963. For example, one writes, “The first one states that Service needs to stabilize and maintain the barrier beaches to prevent against storm tides to protect freshwater impoundments for waterfowl management. The second states that the Service must make sure that the water management plans for the refuge do not interfere with farming on private lands adjacent to the refuge. These two press releases were promised to the citizens of Delaware. The primary purpose of the government is to serve and protect its citizens.” Similarly, the State of Delaware stated that the continued breach in the dunes is the result of management decisions, which are contrary to these press releases.

Overall, many felt that these press releases represent the original “purpose” and “vision” for establishing the refuge and constitute a “promise” to the citizens of Delaware. In general, they felt that not repairing the dune breach was contrary to the Secretary’s letter because it does not protect surrounding communities or provide freshwater habitat for waterfowl. They also feel the refuge is obligated to continue to maintain freshwater impoundments and stabilize and maintain barrier beaches to protect against storms and coastal flooding.

Response: The Service respectfully disagrees. In 1963 the Service did not understand sea level rise, climate change, the fact that barrier island roll-over/migration is how salt marshes maintain their storm attenuation functions to protect mainland areas, and what the adverse effects of trying to maintain freshwater wetlands would be in light of increasing sea levels. The goal of conservation of the resources of the refuge for present and future generation is stated clearly, so what the Service in 1963 was not contemplating is what would happen when changing conditions and decades of additional erosion made the maintenance of the barrier unsustainable. It’s a well-intentioned statement in the context of incomplete knowledge and the very human inability to foresee the future. Policies guiding refuge management, such as the Refuge Improvement Act, obligate the refuge to make science-based management decisions that adapt to changing conditions and thus preserve natural processes.

It would be neither responsible nor sustainable to attempt to maintain a static condition along this dynamic shoreline. We also respectfully disagree with the assertion that the continued breach in the dunes is a result of a management decision. On the contrary, we worked closely with DNREC to repair the dunes in 2011 to permit a more strategic planning process. That repair was delayed by litigation and ultimately was not successful because the amount of material available on-site for the repair was limited. The use of off-site material was not a viable option.

Comment: Several individuals point out that portions of the refuge were purchased with Federal Duck Stamp and Dingell-Roberts money and its purpose was to provide and improve impounded freshwater areas for waterfowl and shorebirds, as well as opportunities for hunting and fishing.

Response: The purpose of the refuge is explained in chapter 1 of the draft CCP/EIS: Prime Hook NWR “... was established under the authority of the Migratory Bird Conservation Act (16 U.S.C. 715–715r), as amended, on August 21, 1963, “*for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.*” We later expanded the boundaries of the refuge to include 934 acres of land purchased with funding from the Land and Water Conservation Fund, under the authority of the Refuge Recreation Act (16 U.S.C. 460k–460k-4), as amended, for the following purposes: “[*land*] suitable for (1) incidental fish and wildlife-oriented recreation development; (2) the protection of natural resources; and (3) for the conservation of endangered species.” The refuge has acquired 10,133 acres encompassing 100 tracts ranging in size from 0.4 acres to 1,600 acres from 73 landowners. Waterfowl species which concentrate in freshwater should continue to use the more brackish and freshwater portions of the refuge, although we do not know whether the same numbers will remain on site for as long. It will certainly continue to be a refuge for shorebirds, and the species of waterfowl which utilize marsh and open water areas may increase if the marsh restoration plans for Unit II are realized.

Comment: The Humane Society of the United States, The Pegasus Foundation, and Delaware Votes for Animals write, “There is no room in this instance for nuanced policy debate about the appropriate purpose of this refuge; Prime Hook NWR was established by statute expressly as an inviolate sanctuary for migratory birds... and the goal of protecting that specific refuge purpose trumps any conflicting activity. Yet, for many years, [this purpose]...has taken a back seat to various opposing commercial and recreational interests, all while statutory and regulatory mandates are consistently ignored.” Similarly, PEER states that based to their reading of the Refuge Improvement Act, the overarching mission and use of the refuge is conservation and that any conflict between conservation and wildlife-dependent uses “must be resolved in favor of conservation and/or implementing Prime Hook’s legislated purposes.”

Response: As noted in the response above, the purpose clearly states that not only was the refuge established as an inviolate sanctuary for migratory birds, but also *for any other management purpose* for migratory birds.

Alternatives

Alternatives - General

(Letter ID#: 2, 24, 27, 25, 45, 70, 80–Petition, 81)

Comment: One commenter speculates that any of the three alternatives will undoubtedly lead to protracted and expensive litigation.

Response: We hope that the CCP/EIS is not challenged in court, because we are aware of how our limited staff are diverted from other initiatives when litigation arises. We believe that this document fully meets our NEPA and other statutory obligations. We also recognize that many people have different views about how the refuge should be managed, which is why we have solicited public comment, conducted so many public meetings, and extended the public comment period. We recognize that we will not be able to manage the refuge in a fashion which meets the views of everyone.

Comment: An individual noted that, “At the various public meetings, the staff indicated that the final plan could mix and match from the three [alternatives] presented. Won’t this alter the analysis of the impacts listed in the CCP? Do you plan to rewrite the analysis of impacts and permit public review? If you mix and match among options, the cumulative impacts etc. will also change.”

Response: While engaging the public in dialog during our meetings, the staff encouraged the public to provide comments on what they liked and what they wanted changed on the various alternatives. This may include mix and matching strategies across the alternatives. If a strategy is added or deleted, then our impact analysis may change as well.

Alternative A

(Letter ID#: 2, 24, 33, 39, 42, 46, 48, 49, 66, 71, 81, 98, 107, S4)

Comment: The authors of one letter felt that key information about alternative A was missing from the draft CCP/EIS that “makes the basis of the CCP alternatives questionable.” They write, “The Plant Communities discussion on page B-33 is misleading and does not appropriately characterize the significant negative aspects of Alternative A with regards to Plant Communities. So many trees and species were killed off by the saltwater intrusion from the beaches. The Alternative A approach does not allow for the reintroduction of many indigenous species.” They also felt that this missing information is necessary to “make informed decisions” and provide the public “with a reasonable base of understanding.” They ask that the Service provide “data as to how much habitat will be added [in the other two alternatives] above what will exist in Alternative A...Also, under alternative A, won’t there be further losses in habitat over time?”

Response: The paragraph on plant communities has been clarified. This section of the HMP is not intended to address impacts of any particular alternative, but rather to simply describe refuge conditions. The vegetation map prepared for the refuge several years ago is still useful in many parts of the refuge, but not as much so in the wetlands. In this section, we do state that the summary of vegetation represents conditions present at the time of mapping, and it is acknowledged that this has changed. We have attempted to make this clearer. An effort is underway to work again with DNREC to update the vegetation map, but it will not be available before the Final CCP is completed.

Habitat changes resulting from each alternative have been estimated and quantified in numerous places throughout the draft and final CCP/EIS. For example, most of the CCP objectives under Goals 1 through 4 quantify the habitat changes expected under each alternative, and these are depicted in maps throughout the document. The potential for habitat loss under Alternative A, such as further conversion of wetlands to open water and the stress and loss of adjacent wetland forest habitat, is addressed in the Impacts to Vegetation section of Chapter 5.

Comment: Many individuals feel that alternative A is “a failure and should not be open for consideration” because of negative impacts on wildlife, refuge habitats, and surrounding agricultural and residential communities.

Response: Alternative A is the no action alternative required by NEPA regulations, and also serves as a baseline for comparing and contrasting alternatives B and C.

Comment: The State of Delaware writes, “Alternative A has a significant omission in that it must include continuing flooding of farm fields and septic systems, killing of trees and the development of an unstable salt water marsh system.”

Response: Chapter 5, on Environmental Consequences, recognizes the continued potential impacts to farm fields, septic systems and vegetation under Alternative A. The Service is cognizant that flooding of some areas of adjacent farmland has been a long-term problem which pre-dates the initial 2006 overwash in Unit I. Salt water intrusion and flooding are common phenomena on many coastal Delaware farms. Barrier beach inlet formation can be inappropriately labeled as the only cause of flooding of private property during storm events, yet there are many other causes that contribute to coastal flooding. Physical forces that affect coastal beach flooding include increased storms and storm intensities, heavier precipitation patterns, extreme wind and wave conditions, extensive run-off from uplands, low elevation of roads and private properties with respect to local mean sea level, local geologic features, sediment supply, and human activities including subsidence exacerbated by two centuries of ground water withdrawals. These factors increase the level of complexity of coastal flooding seen at the refuge and adjacent private lands.

Comment: One individual writes, “How then is your Alternative A, “no action” status quo miraculously transformed into “no human interference”? ... When and why did you abandon water level management in any of the impoundment without public notice? Was that legal?”

Response: The refuge has not abandoned water management. Water management has changed due the daily tidal influx of saltwater from the bay. Since we are still able to maintain some water management capability in Unit III, Alternative A, the “no action” alternative, continues this current activity, as long as feasible. Alternative C analyzes the infrastructure changes and environmental and fiscal costs of trying to return Unit II to pre-breach conditions. Alternative B recognizes that the efforts to artificially maintain a freshwater systems are unsustainable in light of 500 feet of shoreline loss over 80 years and a reasonable likelihood of greater rates of shoreline loss in the future, so it proposes to “fix the system once”, i.e. to return it to a functioning salt marsh which can naturally adapt to sea level rise, and then to let that sustainable and natural habitat be. We believe the CCP/EIS does an adequate job analyzing the current situation and our proposed management direction as required by NEPA.

Comment: PEER stated that the draft CCP/EIS falsely characterizes freshwater impoundment management in Alternative A (current management) as No Human Intervention, when in fact there have been human management actions associated with the freshwater impounded wetlands from 2008 to 2011. Recent human actions to protect freshwater wetlands cannot be categorized as “historic management” of Alternative C because these actions have uniquely occurred as part of current management and we think that they will continue. These include filling in breaches in September of 2011 under the project justification of protecting freshwater impounded wetlands.

Response: Alternative A portrays current management representing a “no action” alternative. Under NEPA, a “no action” alternative is one that prescribes no change to current management, not necessarily no action altogether. Under alternative A it does state that “natural ecological processes would be allowed to proceed with no human intervention.” With regard to the impoundments, this specifically means that under alternative A, there would be no direct moist soil vegetation management of the impoundments as was historically conducted for the decades prior to formation of the breaches in 2009. As of the release of the draft CCP/EIS, there is no such management taking place in Unit II because it is not possible, and therefore this alternative is consistent with the assertion that it is “no action,” no change to the current management. However, interventions such as adjustments to water control structures in response to heavy precipitation have taken place recently, and would continue under alternative A, to assist the refuge in complying with a 2.8 mean sea level water level deed restriction, so long as this capability remains in place. A strategy has been added to objective 3.1 under alternative A to clarify that such “storm water management” actions currently taking place now would continue.

Alternative B, the Service-preferred Alternative

(Letter ID#: 2, 8, 15, 18, 21, 25, 29, 33, 34, 35, 37, 39, 40, 41, 42, 45, 46, 48, 49, 53, 54, 62, 65, 66, 67, 68, 70, 72, 80–Petition, 81, 86, 89, 91, 100, 104, 105, 106, S2, S3, S4, S9)

Comment: Several individuals and organizations, including Duck Unlimited and the Canoe Cruisers Association, supported the Service’s preferred alternative B. They cite the following reasons:

- Managing refuge habitats, including reforested portions of the refuge
- Allowing natural processes, such as along the shoreline.
- Restoring salt marsh habitats
- Expansion of hunting opportunities

Response: We appreciate the support for our preferred alternative.

Comment: Many individuals did not support alternative B for the following reasons:

- Does not address public safety and impacts on surrounding communities and farms, such as saltwater intrusion and coastal flooding.
- Does not repair dune breaches and fails to restore freshwater marsh habitats for waterfowl and other wildlife species.
- Negatively impacts hunters because of losses in waterfowl habitat.
- Changes in hunting program, including free-roam hunting, hunting days and times, the hunting lottery, and impacts of hunting expansions on refuge habitats, waterfowl, and other wildlife.
- Changes in mosquito control.

Response: We respond to these concerns elsewhere throughout this appendix. Please see comments and response under “Local Communities,” “Hunting,” “Nuisance Species – Mosquito Control,” “Dune Breach, Marsh Restoration, and Shoreline Stabilization.” Also, based on the comments we received, we have made several changes to alternative B in the final CCP/EIS. We highlight these at the beginning of the appendix under “Introduction,” as well as our specific responses to those concerns.

Comment: Several feel that alternative B is inadequate because it relies on using dredge sediments from the U.S. Army Corps of Engineers; even though these sediments have not been secured yet.

Response: Alternative B does not rely on dredge sediment. We agree that it is important to consider alternative strategies, because there is no guarantee that the refuge wetlands will be the selected beneficial use site for the Main Channel Deepening sediments. The strategies outlined under objective 3.1 under alternative B in the draft CCP/EIS included a number of options that do not rely on dredge materials. We also consider other sources of dredge material, other than the Main Channel Deepening project. For example, maintenance dredging is also conducted routinely in the Delaware Bay. In the final CCP/EIS, we have further developed several of these restoration strategies and have evaluated and added additional strategies based on the comments we received.

Comment: Delaware Audubon Society feels that alternative B is being considered only because of the surrounding community and that the single best alternative, absent that community, would be to let nature take its course and to move the refuge inland, upland, westward.

Response: The presence of the surrounding community has an influence on how management strategies can be implemented because it is a reality of the current condition. However, the Service stands by the conclusion that alternative B is the most appropriate course of action for the degraded impounded wetland complex, and that this decision is well supported by the scientific data outlined in the rationale for objective 3.1. Letting “nature take its course” is the preferred approach in wetland areas of the refuge that are not so extensively degraded, such as in Unit I. Given the history of altered hydrology and the collapse of the peat substrate due to decades of saltwater exclusion, purposeful restoration of wetlands in the impoundment complex is the most ecologically beneficial alternative.

Comment: One commenter noted that alternative B leaves issues of commercial development, permits, all contracts, etc, to sole discretion of refuge manager; with no oversight, permitting, or community input involved.

Response: The refuge manager does have broad discretionary authority over the day to day operations of the refuge. However, existing discretionary authority has oversight in policies. As examples, NEPA documents, compatibility determinations, and service and construction contracts receive Regional Office and in some cases Washington Office review and signatures. NEPA documents and compatibility determinations also require public involvement.

Comment: One individual was concerned with habitat diversity under alternative B. He writes, “Diversity of habitats will be lost as upland habitat areas are allowed to go to climax vegetation. This will result is less habitat diversity, and less wildlife diversity on the refuge.”

Response: With alternative B of CCP/EIS the diversity of habitats will not be lost in upland areas because we will allow agricultural lands to revert to early successional grass, forbs and shrub-scrub plant communities. Proactive habitat management actions such as mowing, disking or using prescribed fire will be used in select fields to maintain and enhance natural early successional seral stages of upland areas. This is in addition to proactively managing existing forest and restore via reforestation of other select non-forested upland tracts to increase Delmarva fox squirrel population viability and also benefit forest interior dwelling birds. The specific habitat management actions described in upland management goals, objectives, rationales and habitat management strategies for alternative B as written in chapter 4 will result in enhancing upland habitat diversity on the refuge for a greater number of wildlife species.

More detailed upland habitat management strategies and prescriptions located in the Refuge Habitat Management Plan (Appendix B) explicitly describes how we propose to maintain, enhance and restore the native vegetation, biological diversity and ecological integrity of early successional upland habitats to create an assorted mosaic of early successional upland habitats mixed with transitional forested areas. These upland habitat management plans and actions will conserve a greater diversity of migratory birds, breeding landbirds, and endangered species while maximizing benefits for other priority wildlife species that would result in an increase of wildlife and upland habitat diversity on the refuge.

Comment: Several individuals feel that the costs of alternative B must be examined in order to justify recommending it for implementation. One writes, “There is no discussion of costs whatever in the CCP. The strategies may in fact be very costly, perhaps comparable to those of alternative C cited on page 3-54. It is inappropriate to recommend that taxpayer dollars be allocated for an alternative with no knowledge of its overall costs.”

Response: The Service agrees that the initial up-front planning costs associated with specific strategies of the preferred alternative B could be costly, and this amount will be more clearly defined once all monitoring data is collected. However, a cost of a self-sustaining salt marsh would be minimal when compared to the projected cost of continuous year-over-year maintenance required in alternative C. We believe that grant and cost sharing opportunities will become available through our partners and the Delaware Department of Natural Resources. It is also anticipated that the U.S. Army Corps of Engineers would become active partners, in addition to the traditional cost sharing partnerships, which allow and encourage those who benefit from the beneficial uses of dredge material. Appendix H (Refuge Operation Needs System (RONS) and Service Asset Maintenance Management System (SAMMS)), Appendix I (Regional Economic Impacts), and compatibility determinations do include estimated costs of alternative B. Please note that on the inside front cover of the document we also state that “... these plans detail program levels that are sometimes substantially above current budget allocations and, as such, are primarily for Service strategic planning and program prioritization purposes. CCPs do not constitute a commitment for staffing increases, operational and maintenance increases, or funding for future land acquisition.”

Comment: The EPA reviewed the draft CCP/EIS and rates the environmental impacts of the proposed action (Alternative B) as “Lack of Objections.”

Response: Comment noted.

Alternative C

(Letter ID#: 2, 3, 8, 10, 23, 28, 33, 35, 37, 46, 47, 49, 52, 55, 59, 64, 66, 80–Petition,88, 97, 108–Form Letter, S4)

Comment: The form letter, online petition, many individuals, and organizations, including the town of Slaughter Beach and the Alliance of Bay Communities, supported alternative C or a modified version of alternative C that includes immediately repairing dune breaches. Individuals specifically mentioned supporting the following actions proposed under alternative C because in their view Alternative C:

- Supports the original intent of the refuge, as outlined in the 1963 press releases.
- Supports the National Wildlife Refuge System mission.
- Restores freshwater marshes to provide breeding and wintering habitat for migratory waterfowl.
- Reinstates cooperative farming to provide foraging habitat for migratory waterfowl.
- Reconstructs and maintains dunes along the Delaware Bay to protect surrounding communities and farms from flooding and saltwater intrusion.
- Restores marshes to freshwater to benefit migratory birds and other wildlife.

- Provides desirable ecotourism and recreational opportunities, such as those for anglers, hunters, and bird-watchers.
- Has a “proven track record” of being beneficial to wildlife.
- Continues existing mosquito control program.

Response: We thank the respondents for their comments. We respond to these issues elsewhere throughout this appendix. Please see comments and response under “Local Communities,” “Nuisance Species – Mosquito Control,” “Dune Breach, Marsh Restoration, and Shoreline Stabilization,” “Refuge Purposes, Refuge Establishment, and Land Acquisition History,” and “Croplands and Cooperative Farming.” Also, based on some of these comments, we have made several changes to alternative B in the final CCP/EIS, as well as to alternative C. We highlight the changes to alternative B at the beginning of the appendix under “Introduction,” as well as our specific responses to those concerns. We also have clarified in the final CCP/EIS that we feel that dune restoration is a potential, and even likely, first step in our proposal to restore marsh habitat. We also reiterate that we would only plan to restore the dunes as part of the comprehensive marsh restoration, not as separate action.

Comment: One individual was opposed to alternative C, writing, “I believe it is the homeowners responsibility to bear the cost of relocation or protecting their property...It is not up to the taxpayers as a whole.”

Response: The Service is under no obligation to maintain private land. Decisions regarding the relocation of the homeowners are outside the scope of this CCP.

New Alternatives Proposed by Commenter

(Letter ID#: 24, 28, 64, 80–Petition, 82, 91)

Comment: One individual proposes Alternative D, “Best for All.” Several others, including the Town of Slaughter Beach and the online petition, stated that they support this alternative and would like the Service to adopt it as the preferred alternative in the final CCP/EIS. The major components of the proposal are:

- Repair dune breaches immediately. Also, develop a long-range plan for beach replenishment and extend beach eastward.
- Restore refuge shoreline to 1962 conditions, all freshwater impoundments, and vegetation
- Repair all private property and roadways
- Ensure protection of all towns, farms, and residential areas.
- Acquire non-developed private beach properties.
- Continue existing mosquito control program.
- Continue existing hunting programs.
- Reinstate cooperative farming.

Response: Shoreline stabilization and acquisition components referenced above are discussed in chapter 4 of the CCP/EIS section “Actions Considered but Eliminated from Detailed Analysis.” Hard armoring was eliminated from further consideration due to adverse impacts, lack of sustainability, inconsistency with BIDEH policies, and high cost. The existing mosquito control program, hunting program, and cooperative farming program were all thoroughly evaluated, and determined to not meet the refuge purposes and vision and goals as well as the programs as described in alternative B.

Comment: One individual proposes Alternative E, “Delaware/Sussex County Takeover.” This alternative is based on his proposed Alternative D, “Best for All.” The major difference is that under alternative E the State of Delaware or Sussex County would “take possession” of the refuge. Other elements of the alternative include:

- Establish a new not-for-profit entity with a board of directors including wildlife experts, technical experts, and area communities.
- Petition the Governor to declare an immediate State of Emergency.
- A Federal grant to conduct repairs and restoration of shoreline and marshes.

Response: Prime Hook NWR is land specifically set aside by Congress for conservation of wildlife, with the Service designated as the Federal agency responsible for conserving, protecting, and enhancing the fish and wildlife populations and their habitats. The proposal to turn operational and management functions over to another agency would undermine the values and legal obligations of the Refuge System. However, we will consider the use of Federal grants to assist with repairs and restoration of shorelines and marshes.

Comment: The authors of one letter propose Alternative R. The major components of this proposal are:

- Rebuild and maintain dunes to prevent flooding of roads, farms, and residences.
- Raise Fowler Beach Road or build a barrier or berm along road to prevent saltwater overwash.
- Manage Unit II and Unit III as freshwater marsh, if feasible, to protect adjacent landowners.
- Establish moist soil units in Units II and III.
- Use dredge materials from nearby sand bars or truck in sand.
- Develop a predator management plan to protect beach nesting birds.
- Continue existing mosquito control program.
- Continue existing hunting programs, with some minor expansions (including turkey hunting) and modifications.
- Reinstate cooperative farming, but convert some previously farmed areas to early successional habitat.

Response: The existing mosquito control program, hunting program, and cooperative farming program were all thoroughly evaluated, and determined to not meet the refuge purposes and vision and goals as well as the programs as described in alternative B. Managing Units II and III as freshwater marsh is also evaluated as a component of alternative C

Comment: One individual proposes Alternative P, “People’s Alternative.” The major component of this proposal is the development and execution of a Memorandum of Understanding between the Department of Interior—U.S. Fish and Wildlife Service and the State of Delaware—Department of Natural Resources and Environmental Regulation that would provide for the joint administration and management of Prime Hook National Wildlife Refuge. A “Refuge Stakeholder’s Advisory Consortium” would also be established to provide formal input into management decisions.

Response: As stated earlier, Prime Hook NWR is land specifically set aside by Congress for conservation of wildlife, with the Service designated as the Federal agency responsible for conserving, protecting, and enhancing the fish and wildlife populations and their habitats. DNREC has not suggested any interest in joint management of Prime Hook NWR. The public already has the opportunity to provide input into management decisions through the CCP and compatibility determination process, and through NEPA.

Comment: One individual proposed a new alternative that essentially “mix and matches” aspects of the three alternatives in the draft CCP/EIS. Major highlights of his proposal are:

- Repairing dune breaches and restoring freshwater marsh in Units II and III to benefit waterfowl and protect refuge neighbors.
- Installing a “robust berm or levy” north of Fowler Beach Road.
- Adopting alternative B’s proposed changes to the mosquito control program.
- Reinstating cooperative farming on 200 to 300 areas and developing “Food Plot Demonstration” areas.
- Continuing existing refuge hunt program, with some expansions including turkey hunting and handgun deer hunting.
- Expanding wildlife observation, interpretive, and environmental education programs.
- Better use and support of Friends Group and volunteers.

Response: While engaging the public in dialog during our meetings, the staff encouraged the public to provide comments on what they liked and what they wanted changed on the various alternatives. This may include mix and matching strategies across the alternatives. If a strategy is added or deleted, then our impact analysis may change as well. However, continuing the existing refuge hunt program, reinstating cooperative farming, and restoring freshwater marshes have been evaluated, and determined to not meet the refuge purposes and vision and goals as well as the programs as described in alternative B.

Global Climate Change

General Comments

(Letter ID#: 28, 69, 96, 104)

Comment: The Delaware Audubon Society writes, “What is required for all the constituents around PHNWR is a long-term retreat from Delaware Bay. Alternative B, acted upon outside the context of a comprehensive solution, will only delay the inevitable: a necessary retreat from the coastline.” Delaware Audubon requests the Service to address, quantify, and analyze each management option offered in the proposed CCP in terms of best return on investment associated with surviving a 100-year storm. In particular, for analytical purposes, apply the results of the storm that immediately preceded the creation of the refuge itself, the Storm of 1962.

Response: It is outside the scope of the CCP to do a detailed quantified evaluation of specific storm magnitude impacts for each alternative. Hydrodynamic modeling underway will include modeling of a 20-year storm, which will help with the evaluation of several potential restoration scenarios. However, the Service stands by the assertion that alternative B, a restoration of natural salt and brackish marsh habitat and functions in the impounded wetland complex and along the refuge shoreline, will provide the most resiliency possible to the effects of future storms of any magnitude.

Comment: The Delaware Chapter of the Sierra Club writes, “Given the scale of sea level rise that the CCP seeks to address, 15 years is an inadequate time frame to consider the long-term wildlife and habitat needs.... They continue, “For example the CCP should include a strategy for acquiring additional lands in the refuge... to replace...habitat lost to sea level rise...the Service should prepare for facilitating a natural transition of ecosystem communities and a plan for landward transgression of protected forests and wetlands.”

Response: Through its recently released “Conserving the Future: Wildlife Refuges and the Next Generation” vision document, the Service has recognized the need to improve the CCP process in the future. Specifically, Recommendation 1 from this guiding document, regarding the next generation of conservation plans, states that the Service will “ensure these new plans view refuges in a landscape context and describe actions to project conservation benefits beyond refuge boundaries.”

Comment: Defenders of Wildlife writes, “[Climate change] is an undeniably important issue for [Prime Hook Refuge]. Defenders developed criteria for evaluating how well climate change is incorporated into final CCPs. We recommend the planning staff refer to these criteria.”

Response: We have reviewed the climate change criteria, and have incorporated suggestions where appropriate. We will also consider these criteria in any future revisions to the CCP.

Sea Level Rise

(Letter ID#: 21, 24, 25, 27, 28, 33, 45, 64, 69, 70, 75, 76, 79, 80–Petition, 82, 83, 85, 87, S1, S3, S13)

Comment: Several commenters suggested that because the CCP is intended as a 15-year planning document, only 2 inches of sea level rise should be considered, based on recent local sea level rise estimates.

Response: Sea level rise is not necessarily a linear process: therefore, it would be inappropriate to assume that only two inches of sea level rise will be experienced locally. It is not simply the rate of local sea level rise that the refuge is basing management decisions on, but rather the consequences of sea level rise and climate change on refuge shorelines. There are multiple synergistic effects associated with climate change include rising ocean temperatures, more frequent storm surges, increasingly higher spring tides, land subsidence, and annual local beach erosion rates. In particular, one manifestation of sea level rise which results in combination with other factors, such as increased storm intensity and frequency, is the rate of shoreline erosion on the refuge. Shoreline erosion has demonstrably increased, and has a direct impact on refuge management capability and options. Analysis of refuge shoreline position and erosion rate data has been incorporated into chapter 3 of the final CCP/EIS, in the section on “Climate Change Adaptation and Vulnerability Assessment of Refuge Wetland Impoundments.” In the coming 15 years, even small amounts of sea level rise will increasingly impact low-lying coastal refuge areas in combination with more frequent storm surges. The refuge is obligated to respond to these locally documented changing conditions affecting the refuge.

Comment: One letter questioned why the confidence interval associated with the local sea level rate was not included.

Response: The refuge relies specifically on the tidal data collected at the nearby Lewes NOAA tide gage. The margin of error associated with this local sea level rise rate was not initially included in the text of the CCP in order to simplify the presentation of the data, not in an attempt to hide the minor variability associated with the data. It was already included in the draft CCP/EIS in the heading of Figure 3-4. The final CCP/EIS has been updated to indicate the range of local sea level rise estimates (2.92 – 3.48 mm/year, 95% confidence interval).

Comment: Several commenters, including the town of Slaughter Beach, questioned why there was any reliance on global rather than local sea level rise rate information, why refuting information regarding global sea level rise was not included, or why the refuge cites a value of 1.3 feet in 100 years rather than the local rate of 1.05 in 100 years.

Response: Although estimates of global sea level rise do vary, depending on the source, multiple widely-accepted peer-reviewed research papers are cited to set the stage for the discussion on climate change and related consequences experienced by the refuge. The Service stands by its conclusion that climate change poses a very real threat to the conservation and management of our trust resources. Ultimately, the data the refuge relies on most directly to guide refuge management decisions are that which are measured and collected locally, and are undeniable. The evidence of increasing local sea level rise and shoreline erosion are discussed in the “Influence of Climate Change on Physical Environment and Refuge Management” section of chapter 3 of the CCP/EIS, including updated information in the final CCP/EIS regarding local shoreline erosion rates, which is one manifestation of climate change. The refuge is obligated to respond to the documented changing conditions affecting the refuge. The dissenting evidence provided by commenters included opinion blogs, reports, website links, and news articles, which are not directly relevant to the local environment.

This reference to a sea level rise rate of 1.3 feet in 100 years in chapter 1 occurs in a description of the work undertaken by the U.S. Climate Change Science Program to examine sea level rise in the Mid-Atlantic in particular. In describing this work we explained that the researchers utilized 1.3 feet in 100 years as the “current rate” for their modeling, an average they view as applicable to the region. This was not labeled by the refuge as the “current rate.” There is no place in the draft or final CCP/EIS where we are directly relying on a rate of 1.3 feet in 100 years as the local rate of relative sea level rise. On the contrary, we repeatedly cite the local sea level rise rate measured by NOAA in nearby Lewes as the data that we are relying on most directly for our evaluation of management options.

Comment: One set of comments was critical of the refuge’s use of the Sea Level Affecting Marsh Model (SLAMM) results in evaluating management options and impacts. In particular, it was noted that a more recent version of the SLAMM model exists, that the refuge should not have used global rather than local sea level rise rates in the modeling, and that the draft CCP/EIS did not sufficiently acknowledge the limitations and assumptions associated with the SLAMM model results.

Response: The SLAMM analysis for the refuge was conducted before version 6.1 was developed. At the time, few SLAMM analyses utilized local elevation data, and in that manner the SLAMM analysis conducted for the refuge was more advanced than the SLAMM analysis otherwise available at that stage of planning. Its limitations are acknowledged in the Key Issues section of chapter 1, under the subsection on Sea Level Rise. Its limitations are also discussed in chapter 2 in the subsection of “Other Scientific Information Guiding the Project” devoted to SLAMM. Additional acknowledgment of SLAMM’s limitations has been added to chapter 3 of the final CCP/EIS.

The sea level rise rates modeled within the SLAMM analysis incorporate a range of possible future scenarios based by default on IPCC scenarios, and do not attempt to predict with certainty which rate of sea level rise may occur. The lowest rate of rise modeled by the SLAMM analysis is 0.5 meters, which is 1.64 feet, and indeed substantially higher than the current rate of sea level rise. It may in fact be informative to utilize SLAMM to evaluate the impacts over time of the current rate of sea level rise, or about 1.05 feet in 100 years. However, for future evaluations of the impacts of climate change, the refuge intends to rely instead on data collected locally regarding rising water levels, retreating shoreline position, and insufficient wetland elevation, particularly as they are compiled into a local hydrological model.

The discussion on the SLAMM analysis in chapter 2 already acknowledged that modeling results should be “considered with caution” due to uncertainty. This has been revised to state that the uncertainty is “high.” The final CCP/EIS also states that, although the SLAMM analysis results are one consideration, they are not the primary factor driving management decisions. We have ample local data and an upcoming site-specific hydrodynamic model to assist both now and in the future with refuge management decisions. Regardless of the exact amount of each various habitat class that the refuge has the potential to lose under these changing conditions, the refuge stands by its assertion that such modeling efforts signal a substantial potential impact to refuge habitats that we must prepare for, and indeed have already seen in portions of the refuge.

Comment: Commenters noted that SLAMM should not be referenced to make statements about hydrology because it is not a hydrological model.

Response: The referenced section in chapter 5 has been revised in the final CCP/EIS. That does not change the refuge’s assertion that climate change has already had, and will continue to have, an impact on the refuge’s coastal hydrology. We rely for now on the data collected thus far regarding current sea level rise, retreating shorelines, and insufficient wetland elevation to substantiate our expectation that an additional conversion to open water is likely. The refuge is working currently to develop a hydrodynamic model which will more accurately and closely model local hydrological behavior, and enable us to predict the outcome under various specific restoration scenarios. This modeling, and not SLAMM, would ultimately be used to further guide refuge management.

Comment: Several individuals felt that, “The alternatives in the CCP/EIS...insufficiently analyzed...optimal management response to sea level rise uncertainty.” They suggest that, “The FWS should utilize the full range of likely sea-level rise projects and determine the outcomes and costs of the optimal strategy set under each scenario...The CCP should incorporate true anticipatory adaptive planning: undertake actions that stabilize current conditions, rather than the alternatives it proposes—which are irreversible actions that preclude adjustment and actively and aggressively monitor for more information, thus allowing for development of the correct response strategy, once better knowledge is available. This is better for the refuge and for the taxpayer. Due to the projected gradual onset, there will be time to make corrections as improved technology makes possible more scientific certainty...[The best alternative given the short time span of the CCP and the uncertainty of sea level rise projects] would be to undertake only a version of the CCP recommendation for the immediate future... on page 1-19: Fill inlets and fully reestablish dunes along Unit II...Undertake actions common to all alternatives as discussed beginning on page 4-8 couples with other monitoring, as needed...”

Response: The CCP is a long range plan that will guide management at the refuge over the next 15 years. Nevertheless, we have seriously considered wildlife and habitat needs, and climate scenarios, that extend beyond just the life span of the plan. As stated on page 1-2 of the draft CCP/EIS, “this CCP is designed to address management and protection of valuable natural resources into the future, a future where continued change is even more likely to occur.” Furthermore, the Service is developing a framework, called Strategic Habitat Conservation, upon which future conservation efforts will be built. It is primarily a field-based approach for making management decisions about where and how to deliver conservation most efficiently to achieve specific biological outcomes. Through adaptive management, we will constantly reassess and improve our approaches. Hydrodynamic modeling underway will also include modeling of a 20-year storm, which will help with the evaluation of several potential restoration scenarios.

Comment: The authors of one letter were concerned with the accuracy of information on climate change and sea level rise in the draft CCP/EIS. They write, “Sea level rise is [treated throughout the draft CCP/EIS] as a certainty and not as a topic over which there is considerable ongoing scientific debate. The only bibliographic sources given are those that support the FWS’s premise. There are many scientific reports that refute the FWS premises...” They also provide several bibliographic references. Similarly, another individual feels that “early ‘scientific observations and measurements’ [of sea level rise and climate change] were politically motivated towards indicting man as the primary culprit. Newer data has exploded many of these theories.”

Response: We believe the information in the CCP/EIS to be accurate and supported by current scientific research. Although estimates of global sea level rise do vary, depending on the source, multiple widely-accepted peer-reviewed research papers are cited to set the stage for the discussion on climate change and related consequences experienced by the refuge. The Service stands by its conclusion that climate change poses a very real threat to the conservation and management of our trust resources. Ultimately, the data the refuge relies on most directly to guide refuge management decisions are that which are measured and collected locally, and are undeniable. The evidence of increasing local sea level rise and shoreline erosion are discussed in the “Influence of Climate Change on Physical Environment and Refuge Management” section of chapter 3 of the CCP/EIS, including updated information in the final CCP/EIS regarding local shoreline erosion rates, which is one manifestation of climate change. The refuge is obligated to respond to the documented changing conditions affecting the refuge. The dissenting evidence provided by commenters included opinion blogs, reports, website links, and news articles, which are not directly relevant to the local environment, or have suspicious and unsupported claims.

Comment: Several commenters state that the draft CCP/EIS failed to acknowledge “the actual growth (vs. loss) of the beachfront on Broadkill from the section designated as North Shores 2 at California Avenue, northward past the area designated as Back Bay Cove.”

Response: The commenter is referring to private land/beach associated with the Broadkill community and the private subdivision, Back Bay Cove. It is beyond the scope of this CCP to analyze the shoreline of these communities. The Service acknowledges some areas along the shoreline are accreting sand. Barrier islands are dynamic by nature. Losses in one area may mean gains in another. However, the overall trend is the landward migration of the shoreline.

Comment: One individual writes, “The CCP does not acknowledge that the ongoing destruction to private communities and farmland is resulting from coastal-storm caused unrepaired breaches in the dune line at Fowler Beach on Prime Hook National Wildlife Refuge proper and not from sea level rise...there is no stated evidence linking these storms to climate change and therefore no reason to question the premise of relatively stable sea level over the shorter term.”

Response: The storms, dune breaches and flooding that have led to adverse impacts to farmland and private properties have also adversely impacted the refuge. We do believe that there is clear linkage between the frequency and intensity of storms and global climate change, and that sea levels are in fact rising. We worked closely with DNREC to repair the dunes in 2011 to permit a more strategic planning process. That repair was delayed by litigation and ultimately was not successful because the amount of material available on-site for the repair was limited. The use of off-site material was not a viable option.

Refuge Administration

General

(Letter ID#: 24, 28, 97, 99)

Comment: One individual commented on communications, writing “Due to communication problems and bad cell phone coverage, the FWS should do a complete overhaul of all field communications equipment ensuring all cars [and] boats have dependable radios for emergency [and] weather info. Portable units should be required. Also, work with local cell providers to improve transponders so the refuge with have better cell signal.

Response: The Service believes our communication equipment is adequate. The refuge does have portable units that can be utilized in vehicles or in the field.

Comment: One individual urges the refuge to pursue access to the refuge property on the east side of Unit III. He writes, “The refuge is supposed to have access via N. Bay Shore Dr. to these lands, but [it] has been denied... This item needs to be resolved [with the Back Bay Cove Trust] to ensure refuge staff access.

Response: Legal issues with private landowners are beyond the scope of this CCP. However, the Service continues to work towards a successful conclusion to access issues.

Budgets and Costs

(Letter ID#: 21, 28, 97, 104, 108–Form Letter)

Comment: One individual writes, “Management is poor due to 80% of the annual operating budget being spent on employee salaries, leaving only \$100,000 to maintain the refuge...The priority should be on the best managed property and the wildlife it benefits.”

Response: The Service has tried to assure that national wildlife refuges have sufficient funds for management activities, above and beyond the funds needed to pay for permanent salaries. Today, most refuges in the country have 75 to 80% of their operating budgets dedicated to staff salaries. This is not due to poor management, but to the economic realities faced by governmental agencies to reduce waste and trim costs where possible.

Comment: One individual asks, “What is the source and availability of funding? The Plan proposes adding seven (7) employees to the staff. These will more than double annual operating costs. With the current federal emphasis on reducing costs and the House Appropriations Committee trying to slash the Fiscal ’13 Refuge Budget by 10%, where is the money coming from to support additional staffing of seven folks?”

Response: Staffing levels for core refuge activities (core staffing), measured in full-time employees (FTEs) which includes operations, maintenance, and fire management, is derived from the President's budget allocation from the resource management appropriation for each fiscal year. The preferred alternative B addition of five FTEs is contingent upon an increase in appropriations for the refuge. Beyond receiving financial resources, refuges also can receive in-kind donations from nonprofit groups, for-profit companies, and other organizations and reprioritize refuge funding to ensure the completion of required conservation plans.

Comment: One individual felt that the CCP should include estimated costs for proposed actions. Another individual and the Delaware Audubon Society feel that the refuge should analyze and compare the overall costs, benefits, and risks of each of the three proposed alternatives in the draft CCP/EIS.

Response: Appendix H (Refuge Operation Needs System (RONS) and Service Asset Maintenance Management System (SAMMS)), Appendix I (Regional Economic Impacts), and compatibility determinations do include estimated costs of alternative B. Please note that on the inside front cover of the document we also state that "... these plans detail program levels that are sometimes substantially above current budget allocations and, as such, are primarily for Service strategic planning and program prioritization purposes. CCPs do not constitute a commitment for staffing increases, operational and maintenance increases, or funding for future land acquisition." Initial up-front planning costs associated with specific strategies of the alternatives B and C could be costly. However, a cost of a self-sustaining salt marsh would be minimal when compared to the projected cost of continuous year-over-year maintenance required in alternative C. We believe that grant and cost sharing opportunities will become available through our partners and the Delaware Department of Natural Resources. It is also anticipated that the U.S. Army Corps of Engineers would become active partners, in addition to the traditional cost sharing partnerships, which allow and encourage those who benefit from the beneficial uses of dredge material. Outside of relative costs, we have also evaluated and compared the various impacts, benefits, and risks of each of the proposed alternatives in chapter 5 of the CCP/EIS.

Staffing

(Letter ID#: 13, 28, 36, 81, 98)

Comment: We received several comments on law enforcement, and what appears to be a lack of law enforcement on the refuge. One individual asks, "Where is the law enforcement" when birdwatchers are blocking the gate to Island Farm, people sneak into Island Farm, and rabbit hunters are hunting in closed areas. The State also suggests, "If Fowler Beach is opened to night fishing, a provision should be made for increased enforcement presence during that time." Another suggests that law enforcement efforts be increased during hunting season to remind hunters to follow safety rules, wear proper clothing, and follow State and refuge regulations.

Response: Law enforcement staff is essential. Currently, the refuge has no authorized law enforcement staff, but is scheduled to receive a full-time officer. The law enforcement position at Bombay Hook NWR currently covers Prime Hook. Delaware Division of Fish and Wildlife Law Enforcement and Service law enforcement staff continue to work together to provide law enforcement needs for the refuge. Also, we agree with the State that we should increase law enforcement if night fishing is allowed.

Comment: One individual was concerned by reductions in staff at Prime Hook National Wildlife Refuge. He writes, "[If the CCP is so important,] why then did the regional office of [the U.S. Fish and Wildlife Service] reduce the refuge staff by 4 positions...immediately after filing the [notice of intent to prepare the CCP]." He continues, "Another self-inflicted problem was the Service's decision to remove three personnel who could have been key to getting the CCP finished in less than seven years."

Response: In 2007, the need to implement a workforce plan was due to the nationwide budget decline in the National Wildlife Refuge System which continued to erode field station management capability. These declines have limited the ability for stations to complete mission critical projects, and with the institution of base budgets and continually declining budgets, refuges would not have the ability to pay staff salaries. At the Regional level, it was clear that we would no longer be able to continue the practice of making every field station "whole" at the beginning of each year; based on the permanent staff they had on board.

The Northeast Region implemented a plan to effectively and responsibly manage natural, financial and human resources with declining federal budgets.

During that period the Service took a hard look at the future budget for refuges in Region 5. We stressed the need to do less with less; we emphasized the need to focus on high priorities only; we informed stations that we will be going to base budgets; and finally, we developed our list of refuges that will stay strong and a list that might go into preservation status.

By proposing a 75/25 funding split for salary and operational dollars, we have been able to manage through this dilemma. While developing the downsizing plan, we analyzed the planned FTE loss and salary savings, and accounted for savings from stations placed in preservation status, which was the first step in achieving a 75/25 budget ratio. This plan identified a reduction of approximately 22 field positions throughout Region 5, which was the first step/phase in facilitating the move to base and providing our field stations with the capability to manage through the budget decline. The Director supported this plan.

Comment: One individual wanted to know what the job duties of the proposed additional public use staff.

Response: To meet the increasing demand for outdoor recreational experiences in this area for environmental education and interpretation and their connection with other priority public uses such as wildlife observation, photography, hunting, and fishing, the final CCP/EIS supports the addition of public use personnel if appropriated funds become available.

Volunteers and Friends Group

(Letter ID#: 24, 28)

Comment: One individual and the authors of another letter suggest the following, “Work hand in hand with Friends group on the development of a refuge volunteer plan and handbook.”

Response: The development of a refuge volunteer plan and handbook is discussed as a strategy to fulfill Objective 6.3 in Alternative B. The Friends of Prime Hook NWR will play an important role in the strategies to achieve many of the objectives outlined in the CCP as discussed in “Actions Common to All Alternatives” in Chapter 4.

Comment: One individual writes that “The Friends Store storage space should also be increased to accommodate more visitors and display space.”

Response: A project to expand the office is included in our databases. Hopefully, future renovations would include additional space for the Friends store and storage.

Comment: One individual feels that refuge management need to put more of the Friends Group resources to use and should continue to recognize volunteers through the volunteer banquet and cookout, as well as seeking other ways to reward and recognize the important work of volunteers.

Response: The refuge recognizes the outstanding support the Friends group and the volunteers have provided over the years. The refuge recognizes their contributions annually at the volunteer banquet.

Partnerships and Community Outreach

(Letter ID#: 27, 28, 33, 39, 42, 46, 48, 49, 64, 66, 72, 80–Petition, 82, 91, 98, 104)

Comment: Several commenters recommend establishing a formal public-private partnership among Prime Hook NWR and the communities of Prime Hook Beach, Slaughter Beach, Broadkill Beach, impacted farms, and other key stakeholders. Another individual felt that “a collaborative relationship with stakeholders will also help address the CCP comments that detail a lack of public trust with the FWS.”

Response: An informal advisory partnership with numerous academic professionals and representatives of other agencies was expanded this past spring to include representatives of the Alliance for Bay Beach Communities (ABC), the Prime Hook Beach Organization (PHBO), and the local farming community, who were included in a wetland restoration workshop. As described in the strategies associated with Objective 3-1, we envision that we will continue to gather these partners in some combination, along with members of the public, again after the CCP is finalized to discuss the next steps in wetland management and restoration. As also described, we intend to host public forums to share restoration plans as they are developed, in order to seek public feedback and involvement. In addition, the refuge has recently taken steps to expand its formal partnerships beyond the successful partnership it has maintained with the DNREC Coastal Program, responsible for considerable monitoring and data collection that has been pivotal for guiding management decisions and contributing to upcoming modeling efforts. As now described in the rationale and strategies associated with Objective 3.1 in the Preferred Alternative of the Final CCP/EIS, efforts are underway to formally partner with the Partnership for the Delaware Estuary (PDE) regarding the potential application of living shoreline techniques in appropriate areas of the wetland complex. Regarding a formal private-public partnership between the refuges and the neighboring communities directly, the purpose, structure, and mechanism for a formal partnership between the refuge and private community entities would need to be examined with the assistance of our Solicitor and other partnership experts within USFWS. However, this is an option that could be explored further following finalization of the CCP.

Comment: One letter states, “What needs to happen is a coordination of efforts across government agencies, involving FEMA: <http://www.fema.gov/pre-disaster-mitigation-grant-program>. Through programs like the Pre-Disaster Mitigation program linked above, the community of Prime Hook may be able to benefit from a program that analyzes the probability of disaster and quantifies the risks to the community. It is clear that even if USFWS is successful with implementing Option B, this community will continue to be at great risk for five-year storm events, let alone 100-year storm events. The hazards the community currently experiences during each flood event are well documented.”

Response: Comment noted. The refuge has included community representatives and several state agencies in recent discussions regarding wetland restoration and management, and will continue to do so after the CCP is finalized and the next steps of CCP implementation begin to take shape. The Pre-Disaster Mitigation program is targeted toward state, tribal, and local communities, and the community of Prime Hook Beach is welcome to pursue such funding opportunities. Although we would be willing to partner with them on such an effort, that would be entirely independent of the refuge’s CCP.

Comment: Several commenters believe the Service should recognize in the final CCP the relevance and importance of these complimentary state activities, such as the 10-year Bay Beach Management Plan and the Bay Beach Work Group, and ratchet up the level of collaboration and resource sharing with these endeavors, for example, the ongoing hydrology and drainage studies and economic analysis and utilize and integrate all relevant data and findings.

Response: The Delaware Bay Beach Work Group was formed for examining issues such as beach erosion, marsh drainage in the Delaware Bay Beach communities, resulting in recommendations for how the governmental agencies might address these issues. The Service currently is a member of this work group. The Service continues to utilize any relevant data and continues to collaborate with its partners and academia.

The analysis conducted as part of the 10 year Bay Beach Management Plan, did not include the undeveloped portions of the Bay. Although this information provides valuable information for the communities, it provides limited utility for the refuge.

Comment: The Alliance of Bay Communities, Sussex County, and several individuals asked the refuge to fully participate in the Delaware Bayshore Initiative. They write, “We believe the recently launched Delaware Bayshore Initiative -a federal-state partnership, serves to reiterate [the] promises [from the 1963 press releases] and the necessity for responsible stewardship of the beaches, marshes, lands, and wetlands that comprise the PHNWR and impact the surrounding communities that proves to be mutually beneficial to all parties.

Response: The Service is proud to be a part of the Delaware Bayshore Initiative, and looks forward to a productive partnership that addresses responsible stewardship of the natural resources found in the state.

Comment: Several individuals and the Prime Hook Beach Organization suggest additional partnership opportunities, including partnering with the following organizations and agencies:

- U.S. Army Corps of Engineers to obtain suitable sediment for shoreline and marsh restoration.
- U.S. Army Corps of Engineers and the EPA to obtain Section 404 permits.
- Governor Markell’s Sea Level Rise Advisory Committee to develop adaptation strategies for coastal Delaware.
- Other State, Federal, and local agencies—such as DNREC, DelDOT, Delaware Emergency Management Agency—to help implement the plan and conduct adaptive management.

Response: The Service reiterates Goal 6 of the CCP/EIS: “Collaborate with the local community and partners to complement habitat and visitor service programs on the refuge and the surrounding landscape.” Furthermore, we have already been working closely with these entities to evaluate marsh management and restoration options, as outlined under Objective 3.1 of the CCP.

Comment: The Prime Hook Beach Organization writes, “The National Wildlife Refuge System Improvement Act of 1997 [states in Section 6. Compatibility Standards and Procedures that] the Secretary shall not initiate or permit a new use of the refuge or expand, renew, or extend an existing use of the refuge, unless...[that use is consistent with public safety.] ... the refuge manager’s failure to fix the dune breaches, which the refuge has done in the past, results in a new use, i.e., an ongoing tidal flooding of salt water that did not exist before the breaches and is incompatible with public safety Furthermore, the context of the CCP statement ignores its role of “community partnership” and its “stewardship ethic” as stated in the Refuge’s vision statement.

Response: Per Service Policy 603 FW 3 a compatible use is defined as “A proposed or existing wildlife-dependent recreational use or any other use of a national wildlife refuge that, based on sound professional judgment, will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purposes of the national wildlife refuge.” The breaches and subsequent changes to the marsh do not constitute a use as defined by policy.

Comment: The authors of one letter write, “The refuge has not been in compliance with Federal Law ... which requires the federal government to use all practicable means to create and maintain conditions under which man and nature can exist in productive harmony. Section 102 requires federal agencies to incorporate environmental considerations in their planning and decision-making through a systematic interdisciplinary approach. Specifically, all federal agencies are to prepare detailed statements assessing the environmental impact of and alternatives to major federal actions significantly affecting the environment.

Response: Among other things, NEPA requires that Federal agencies “Utilize a systematic, interdisciplinary approach... in planning and decision-making...” and “... insure that presently unquantified environmental amenities and values... [are]... given appropriate consideration in decision-making along with economic and technical considerations...” Prior to making a decision to undertake a proposed action, agencies are to consider a range of reasonable alternatives and the effects of their implementation. We have prepared this CCP and environmental impact statement in compliance with NEPA.

Comment: One individual suggests using an outside consultant of university group to conduct an evaluation of the effectiveness of current outreach techniques because outside groups “tend to look at the broader picture and will include local observations and thoughts.”

Response: The extensive scoping process, public involvement and use of an interdisciplinary planning team all allow for a broad look at the refuge and the issues it faces, and includes local observations and thoughts into the plan.

Comment: One individual proposes a Bayshore Initiative Partnership project called the “Fowler Beach Demonstration Project.” He feels that this proposal will protect neighboring communities and benefit wildlife. The major components of the proposal are:

- An agreement between the Service and private shoreline owners
- A memorandum of agreement between the Service, DNREC, DelDOT, the Army Corps of Engineers, and the University of Delaware to address road maintenance, dune maintenance, shoreline management and monitoring, and to conduct pilot study projects on “fortifying the shoreline” with dunes, engineered solutions, or living shoreline techniques.
- Funding for dune restoration, restoration of Fowler Road, parking lots, observation areas, appropriate signage, and the shoreline fortification project.

Response: The Delaware Bayshore Initiative builds on existing partnerships to conserve, protect, and restore critical wildlife habitat and waterways, and provide world-class low-impact outdoor experiences, while inspiring generations of Delawareans to take pride in Delaware’s wild side.

DBI is comprised of a three-part strategy:

- (1) Conservation, restoration, and protection of critical native habitats and waterways, including landscape-scale preservation through acquisition or easements of unprotected lands
- (2) Recreation and connectivity within and among urban and rural areas by enhancing access to Bayshore sites and promoting low-impact recreation including hunting, fishing, wildlife observation, photography, hiking/walking, biking, canoeing, kayaking, and other recreation opportunities
- (3) Engagement and marketing of the region by, promoting local economic development, encouraging volunteerism, environmental education, improving key facilities, and engaging residents, businesses, community groups, schools, and civic organizations to instill a sense of local stewardship.

The Service continues to work with its partners (DNREC, DelDOT, U.S. Army Corps of Engineers, Partnership for the Delaware Estuary, etc.). The Service and its partners are looking into restoration options for the Prime Hook marshes to include living shoreline techniques, potential dune restoration, road and culvert issues. We are always looking out for potential funding opportunities. It should be noted that the Service’s alternatives do not include shoreline fortification (hard armoring) or restoration of Fowler Beach Road. DelDOT has authority over Fowler Beach Road.

Facilities – Roads and Culverts

(Letter ID#: 24, 28, 62, 65, 70, 71, 80–Petition, 81, 104, 108–Form Letter)

Comment: The form letter states, “Prime Hook Beach Road can be rebuilt. It was built 65 years ago on nothing more than marsh land. It has had only minimum maintenance which any county road would get in Sussex County. Fowlers Beach Road was probably built the same way many years before Prime Hook Road. Both roads have never had more than the minimal maintenance until the breaches in the barrier beach at Fowlers broke through. Rebuilding the barrier beach would stop the salt water from entering Unit II. A lower water table could be held; therefore both roads could be rebuilt.”

Response: DelDOT has maintenance authority over the road. Per DelDOT, the marsh substrate the road rests on cannot support additional elevation (weight). Actually, adding additional material may result in a loss of elevation through subsidence.

Comment: One commenter stated that the elimination of Fowler Beach Road further exposes Unit I to adverse impacts.

Response: The potential elimination of Fowler Beach Road is simply one strategy and scenario we may use to restore the hydrological connection between Unit I and a restored salt marsh in Unit II. For example, removing the physical obstacle of the road between the units would likely improve water circulation and drainage in Unit I and divert more sand and other sediments into Unit II that currently accumulates on top of Fowler Beach Road. Sand on top of the road is lost to a back-barrier marsh system that is currently sediment starved and could use more sediment transport dropping sand into the marsh instead of on top of the road. The Service would not advocate for this step unless our modeling work and restoration monitoring indicated that it would be beneficial, and this caveat has been clarified in the final CCP/EIS. Similarly, we would not encourage the removal of the road if we have concerns about the timing of such a step. However, ultimately the fate of Fowler Beach Road rests with DelDOT, which has authority over its maintenance.

Comment: PEER writes, “Other wetland-road management actions related to road maintenance of Fowler Beach or Prime Hook Roads taken in 2008 and 2009 were and still are directly linked to refuge wetland management and/or have direct impacts to the conservation of refuge wetlands. The characterization or labeling of the DelDOT maintenance actions of 2008 and 2009 as “No Human Intervention” related to freshwater wetland management on these two roads is simply not accurate. Adverse direct, indirect and cumulative hydrological impacts of wetland-road maintenance actions of 2008 and 2009 to the biological integrity, diversity and environmental health of the then existing refuge freshwater impoundments were never considered or analyzed or even remotely connected to the federal actions taken by the Service that supposedly had to occur “to protect freshwater impounded wetlands” [Dune EA (2010)].”

Response: DelDOT, not the refuge, has authority to maintain the road. These actions are not considered refuge actions, and therefore are not labeled in the CCP as direct refuge management strategies under any of the alternatives, including Alternative A. Rather, we routinely include strategies to continue working with DelDOT to encourage road maintenance decisions that will not interfere with the conservation and management of refuge habitats and resources. Furthermore, road maintenance actions taken by DelDOT in 2008 did not hinder successful management of the freshwater impoundments in spring and summer of 2009, as documented by vegetation response, and thus are not viewed as primary factors in the hydrological changes the wetland system experienced following the formation of large inlets in the fall of 2009.

Comment: PEER writes, “Road maintenance occurred in the past and will continue in the future, so why does the CCP/DEIS fail to adequately discuss the full ramifications of road maintenance actions and conduct a full environmental consequences analysis in the CCP/DEIS?” Another individual writes, “DelDOT efforts to fix the road are minimal and short term—the CCP needs to address a longer term effort and how to deal with this in the meantime.”

Response: DelDOT, not the refuge, has responsibility for maintaining the roads. We cannot predict what actions they will decide to take on any particular road that crosses the refuge, and therefore cannot evaluate impacts from road maintenance actions explicitly for any alternative in the CCP. The CCP addresses actions to be taken by the refuge. As stated in several places in the CCP, we will continue to work with DelDOT to encourage road maintenance decisions that will not interfere with the conservation and management of refuge habitats and resources. We have some opportunity for minor environmental review through state permit process, such as for culvert additions, but not for most road work like hauling gravel for the shoulders. They have the authority to conduct road maintenance under the conditions of an easement established prior to refuge acquisition of the land.

Comment: PEER writes, “PHNWR has presided over the rapidly destruction of the health and integrity of national wildlife refuge freshwater wetland habitats by failing to mitigate adverse impacts and find more wetland friendly road maintenance solutions.”

Response: As explained in the Key Issues and Concerns section of Chapter 1 of the CCP, the Service attempted to mitigate the impact of sudden saltwater intrusion into the impounded wetland complex by working with DNREC on a temporary, though ultimately unsuccessful, repair of the breaches that formed in 2009. Because road maintenance is the responsibility of DelDOT, it is not within the authority of the USFWS to “find... road maintenance solutions.” We have been in communication with DelDOT about possible future options, but they maintain the authority to conduct road maintenance as they deem necessary to meet their mandates.

Comment: One individual writes, “How do you justify the compatibility of maintaining BIDEH of refuge wetlands that culverts on a maintenance-easement has already in the past and will continue to with very significant adverse impact on wetland health and integrity and refuge wetland management capability?”

Response: The culverts did not result in the adverse impact to the impoundments. The saltwater intrusion from the Bay, because of the breaches, has resulted in the loss of the freshwater integrity of the impoundments. A list of potential restoration scenarios that would be evaluated through a modeling effort can be located under Objective 3.1. Various restoration experts and state officials have suggested both reduced and increased flow under Prime Hook Rd. as potential strategies for wetland management, and so both are listed in the referenced statement as scenarios to be evaluated in the modeling exercise.

Comment: One individual suggests, “In accordance with your plans summarized on page 4-167, wouldn’t it be more logical to place the culverts under Fowler Beach Road and drain the water that direction? This would permit salvage of the Unit III impoundment as a freshwater impoundment.”

Response: We respectfully disagree. The low road elevation and lack of drainage to the north may have detrimental impacts to Unit I. The topography of Unit II will always allow for southerly flow through the culverts under Prime Hook Rd. Historically Slaughter Creek flowed to the south and entered the Bay just north of Prime Hook Road.

Comment: One individual writes, “If FWS and the state intend to rebuild the dunes to reduce flooding, why would there be a need for additional, larger PHB culverts? The two actions are very connected environmentally. Do you intend to do an EA/compatibility review and public review of this project? Or do you and the state intend to hide the work as repair and replace of existing structures? Larger PHB culverts are not replacing existing structures.”

Response: We have always stated that dune work/breach closure was a possible, and indeed likely, first step toward restoration of the salt marsh in order to attenuate water velocities and sustain the sediment while marsh plants are becoming established. However, repairing the dunes alone will not eliminate future flooding of roads and agricultural lands during extreme high tide and storm events, since floodwaters can enter these areas through locations other than the existing breaches. Rather, restoring the natural hydrological function of historic refuge salt marshes has many different strategies; this may include larger culverts under Prime Hook Rd. As stated earlier the marsh restoration planning may require additional environmental assessments as the modeling and other data become available. We continue to work with DelDOT, DNREC, and the communities to strive for a positive outcome for all parties.

Comment: One individual writes, “Additionally, recent news articles have reported that the state (DelDOT) has received \$640,000 to replace culverts under Prime Hook Road. Where is this discussed in the CCP? This project will have serious negative impacts on the refuge by degrading and destroying the BIDEH of Unit III. It will make any return of Unit III to some semblance of a healthy marsh, or even parts of the unit to freshwater impossible.”

Response: You are correct in stating DELDOT received a grant to replace the culverts under Prime Hook Rd. We listed this as a potential strategy under Objective 3.1 of Alternative B. Hydrodynamic modeling underway will include impacts of replacing the existing culverts with larger culverts (increased flow). We further state in Objective 3.1 that the marsh restoration planning may require additional environmental assessments as the data becomes available. However, the Service stands by the assertion that Alternative B, a restoration of natural salt and brackish marsh habitat and functions in the impounded wetland complex and along the refuge shoreline, will provide the most resiliencies possible and restore BIDEH of the Unit.

Comment: PEER writes, “The increased water flows and significant volumes of water from Unit I culverts entering Unit II from re-established culverts along with other temporary alterations to hydrology from digging drainage ditches at Fowler Beach Road were major contributing hydrological factors that aided in punching out new breaches in Unit II during the November Nor’easter.”

Response: We find this comment to be pure speculation. There is no way to claim with any certainty that maintenance along Fowler Beach Rd. was a factor in the formation of shoreline breaches during a storm event that caused flooding all along the Delaware Bayshore. Road maintenance actions taken by DelDOT in 2008 did not hinder successful management of the freshwater impoundments in spring and summer of 2009, as documented by vegetation response, and thus are not viewed as primary factors in the hydrological changes the wetland system experienced following the formation of large inlets in the fall of 2009.

Comment: One individual writes, “The existing culvert could have been fitted with flap gates to keep “most” salt water in Unit II. The marsh elevation could be helped to recover by conducting a project similar to what Blackwater NWR did – place hay bales in the open water areas to collect silts etc. as well as clean the marsh channels (drains) and pump the water slurry inside the area with hay, thus raising the elevation of the Unit III marsh and restoring healthy freshwater wetland habitats for migrating and wintering waterfowl and other wildlife is completely ignored in proposal B.”

Response: Retrofitting flap gates and/or stop logs structures on the culverts elevating water levels in Unit II was never evaluated in the 1980’s. The EAs developed in the 1980’s acknowledged the hydrological connection between Units II and III. It is unclear whether restricting the flow may have negative impacts to upland habitats, the road, and the Prime Hook community and if the purpose of such a project is to return the unit to a freshwater marsh, as soon as the next large storm inundates these structures, the freshwater vegetation would be killed again, which is why trying to maintain a freshwater system is unsustainable.

Objective 3.1 lays out many short-term strategies including living shoreline techniques such coconut logs or hay bales for salt marsh restoration. We question the use of such a technique for freshwater wetland restoration, since the larger issues of sustainability still arise. The refuge acknowledges that the best management for Unit III is not yet clear, as it has always had higher freshwater inputs. The overarching objective is for it to be more sustainable for the long-term. Clearly, it cannot continue to be managed in exactly the current manner, which has left it vulnerable to subsidence and wetland collapse in large portions. Without the results of hydrodynamic modeling currently in development, and other further analysis, it is difficult to know yet if salt marsh restoration would succeed, or if a return to impoundment management is even feasible given the many factors involved.

Comment: One individual writes, “The Prime Hook Road, which carries traffic, presents a different problem. This road has no significant base, is low and continues to sink. The alternates are: elevate the low sections and add a water control structure, elevate the road and incorporate a water control structure, or build a berm or levy on the north side, with appropriate water controls. Probably adjustments will be required on the Petersfield Ditch structure and the Prime Hook Creek structure as well.”

Response: Comment noted and the Service agrees. We recognize that community safety is important to all concerned. We will continue to work with the State of Delaware on any road improvements that will alleviate flooding while ensuring that Refuge resources are not significantly impacted. Prime Hook Beach Road is maintained by the Delaware Department of Transportation (DelDOT). Maintaining the road to adequately function during storm events is a DelDOT responsibility, and the refuge will continue to work with DelDOT to address the situation.

Comment: A commenter noted that page B-101 of the draft CCP/EIS states, “Work with DelDot on abandonment and removal of Fowler Beach Rd to improve tidal flow between Units I and II.” The respondent writes, “Unless there is better drainage out of Unit I, the result will be that additional water will flow into Units II and III, leading to greater need for drainage along both Primehook Rd as well as Broadkill Rd. The COE’s assistance is needed to repair the Mispillion jetty (which is currently silting in) that would then speed drainage of Unit I. Despite the jetty being off-Refuge, it is having a very adverse impact in overall drainage of Unit I.”

Response: The commenter likely oversimplifies the necessary resolution to the problem. Marshes of a given acreage require inlets and outlets of sufficient capacity to move all water coming off the land and from the bay within a tidal cycle or two. A myriad of man-made factors contribute in varying degrees to reduced drainage of the PHNWR marsh, including numerous jetty’s designed to stabilize shorelines and inlets running from Slaughter Creek to Lewes, roads (with or without culverts) crossing the marsh that serve as dikes, and permanent closure of the main channel of Prime Hook Creek to the Bay. Retaining the existing infrastructure, or adding more highly engineered impediments to the free-flow of lunar tides and overland runoff, may serve as a short-term solution at best.

Comment: Several commenters requested that we take actions on either Prime Hook Road, Fowler Beach Road, or both, such as more culverts, road raising or replacement, conversion to floating roads, or berms along the roads. Failure to include such specific strategies is regarded as a significant omission in the CCP.

Response: As stated in the strategies associated with alternative B, objective 3-1, we will continue to work with DelDOT to explore options, which address road flooding concerns in a manner consistent with refuge management objectives. The impact of road changes on local hydrology will be evaluated in ongoing hydrodynamic modeling. DelDOT has indicated that the marsh substrate Prime Hook Road rests on cannot support addition elevation (weight) and that adding additional material may result in a loss of elevation through subsidence. DelDOT has proposed replacement of culverts along Prime Hook Road, and we are working with them to ensure that any work they do would not have a detrimental impact on refuge resources and that their work may benefit from our hydrodynamic modeling. However, DelDOT ultimately has maintenance authority over both roads and it is outside the jurisdiction of the USFWS to propose or conduct management strategies involving changes to state roads, such as culvert replacement or raising of the roads. DelDOT has not expressed any interest in or intention to raise or otherwise improve Fowler Beach Road.

Comment: One letter pointed out that a statement on page 4-100 of the draft CCP/EIS regarding closing the Prime Hook Road culverts is inconsistent with other parts of the CCP, which call for additional flow of water under Prime Hook Road.

Response: The statement referenced included a list of potential restoration scenarios that would be evaluated through a modeling effort; this list was not intended to describe definite plans. Various restoration experts and state officials have suggested both reduced and increased flow under Prime Hook Road as potential strategies for wetland management, and so both are listed in the referenced statement as scenarios to be evaluated in the modeling exercise.

Comment: The Delaware Audubon Society and one individual were concerned about activities conducted by DelDOT on or along refuge property. The individual writes, “DelDOT only has a [50]-foot easement to ‘maintain [Prime Hook and Fowler Beach Roads].’ How is they were allowed to dig ditches...on Service lands and in fragile salt marsh, without a permit/CD or environmental review?” The Audubon Society concurs, writing, “Shouldn’t there have been an EA or CD on whether or not these culverts were in the best interests [of the refuge]?”

Response: DelDOT obtained a 50’ easement for a road prior to refuge establishment. The easement states “...A permanent easement and right to grade and slope the lands and premises hereinafter described for the purpose of relocating, constructing, widening, improving, and maintaining the existing State Highway... for the grading an sloping of said land and, the right to grant a public utility permit franchise or easement to install and maintain its facilities or permitting a public utility to install and maintain its facilities in, on, over, or across said lands and premises.” DelDOT, through the easement, has the right to maintain the road. Although past mistakes were made in their routine management (such as depositing spoils from a ditch clean out on the wetland), DelDOT has acknowledged that such approaches should not be repeated. DelDOT, DNREC, the Service, and the Corps of Engineers worked together to insure that the situation was rectified. Although we cannot undo the past, lessons learned have improved communications and sound management practices by and among all parties.

Road maintenance and culvert replacement for Fowler Beach and Prime Hook Roads do not require a compatibility determination. Service policy 603 FW 2(B)(1) states “Exceptions may apply when there are rights or interests imparted by a treaty or other legally binding agreement, where primary jurisdiction of refuge lands fall to an agency other than us, or where legal mandates supersede those requiring compatibility. Where reserved rights or legal mandates provide that we must allow certain activities, we should not prepare a compatibility determination.” However, these activities may require further environmental review such as wetland permits. The Service, DNREC, and DelDOT continue to work together during these review processes when they arise.

In 1990 the Service and DelDOT entered into a memorandum of agreement (MOA), which states “whereas, it is desirable for both parties to establish a cooperative agreement for replacement of these culverts...” The Service and DelDOT have worked cooperatively in the past and will continue to look for the best solutions for Prime Hook Rd. and the refuge’s marshes. Should the modeling work determine that replacement of the culverts is an appropriate and refuge-compatible project, the Service can issue a limited special use permit for the work to be performed if it is necessary for it to encompass more than the 50 foot easement.

Comment: One organization questioned why the Service did not address adverse impacts that would impede and interfere with the refuge’s capacity to conduct water level management and continue to protect the freshwater integrity of an established wetland system, referring specifically to the summer of 2008 and claiming that the Service made the choice to not maintain the freshwater integrity of Unit II impounded wetlands by allowing the re-establishment of the culverts under roads crossing the refuge wetlands.

Similarly, another individual writes, “FWS completely ignores a thorough environmental analysis of impacts that PHB culverts has on critical factors that adversely impacts BIDEH of current and future wetland condition and management of Unit III. How is this possible? Not very credible in CCP and violates BIDEH policy. FWS present a credible 15 year plan and HMP with zero discussion about immediate and cumulative impacts that PHB culverts has already had and will continue to have on Unit III. Bigger culverts will materially interfere with the refuge wetland management capability of Unit III endorsing the current refuge position to permanently degrade Unit III marshes.”

Response: We respectfully disagree with your conclusions. In 2008, the dunes were repaired and the Units were restored to freshwater. Restoring the dunes reduced the flow of saltwater from the bay, hence lowering salinity levels. In 2009, we had excellent production of moist soil vegetation, which has been well-documented. It was during the Veteran’s Day storm of November 2009 that dunes were overwashed again. The overwashing of the dunes and erosion of the shoreline are primary factors contributing to the loss of the man-made freshwater impoundments.

The breach immediately north and south of Fowler Beach Road has formed inlets in the past few years. Those inlets flooded the managed freshwater impoundments with saline bay water. That saline bay water flows through the culverts and periodically over the roads. According to past annual refuge management plans, salinity levels can range from 0 to 12 ppt. With salinities regularly above zero, the system cannot be a true freshwater system. Salinity has always been a factor in the management of these manmade freshwater units. The inlets, as seen today, continue to provide daily tidal exchange of saline bay waters. Although culverts influence the hydrology, they, alone, are not responsible for the current situation the marsh faces.

It is true roads, ditches, and culverts have an impact on the hydrology of an area. Many of these impacts occurred prior to refuge ownership and continue to influence the hydrology of the marshes today. DelDOT obtained an easement for a road prior to refuge establishment. The easement states "...A permanent easement and right to grade and slope the lands and premises hereinafter described for the purpose of relocating, constructing, widening, improving, and maintaining the existing State Highway... for the grading and sloping of said land and, the right to grant a public utility permit franchise or easement to install and maintain its facilities or permitting a public utility to install and maintain its facilities in, on, over, or across said lands and premises." DelDOT, through the easement, has the right to maintain the road which includes culvert replacement. In 2008 DelDOT replaced the existing culverts. Although past mistakes were made in their management of the culverts, such as depositing spoils from a ditch clean out in the wetland, DelDOT has acknowledged that such approaches should not be repeated. DelDOT, DNREC, the Service, and the Corps of Engineers worked together to insure that situation was rectified. Although we cannot undo the past, lessons learned have improved communication and sound management practices by and among all parties.

Road maintenance and culvert replacement within the 50 foot right of way for Fowler Beach and Prime Hook Roads are not actions that the Service is in a position to "allow" or "deny" and therefore they do not require a compatibility determination. Service policy 603 FW 2(B)(1) states "Exceptions may apply when there are rights or interests imparted by a treaty or other legally binding agreement, where primary jurisdiction of refuge lands fall to an agency other than us, or where legal mandates supersede those requiring compatibility. Where reserved rights or legal mandates provide that we must allow certain activities, we should not prepare a compatibility determination." However, these activities may require further environmental review, such as wetland permits. The Service, DNREC, and DelDOT continue to work together during these review processes when they arise.

Land Protection and Acquisition

(Letter ID#: 54, 104)

Comment: Multiple organizations urge the Service to continue and possibly expand the use of land acquisition from willing sellers to protect existing habitats and to provide future habitats for wetland migration.

Response: Expansion of the refuge's acquisition boundary is a necessary future step to meet habitat needs for trust species such as migratory waterfowl, shorebirds, and neotropical migrants, and to contribute to the network of conservation lands and wildlife resources in the regional landscape. However, with input we received from the public during scoping, coupled with reduced land acquisition funding, we are not planning any major refuge boundary expansion as part of this CCP/EIS. Approval to explore refuge boundary expansion comes from the Service's Director, and then expansion requires development of a Land Protection Plan (LPP). We will continue to consider minor acquisitions adjacent to the refuge from willing sellers if the lands are determined to be biologically important, or provide connections with other protected lands. As sea level rise inevitably continues, should owners of surrounding farmlands determine that their lands are too soggy or salty for productive farming, the Service will certainly remain open to willing sale purchases as such lands may hold wildlife value as well as providing an ecological transition protecting lands farther inland. Land protection efforts that emerge outside of this planning process will include significant public involvement in decision making, involve partners in the protection effort, and will utilize the full range of protection methods, including management agreements, conservation easements, and fee acquisition.

Historic and Cultural Resources

General

(Letter ID#: 44, 108)

Comment: The Delaware Nation inquired whether a cultural resource survey or archaeological assessment was included in the draft CCP/EIS for Prime Hook NWR.

Response: We did complete a thorough “Archeological, Historical, and Geomorphological Study of Prime Hook National Wildlife Refuge” in December 2004 (through a contract with Tetra Tech FW, Inc.) at the beginning of our planning process, and reference it throughout the CCP. The primary sections of the draft CCP/EIS document that pertain specifically to cultural or archeological resources can be found in Chapter 3 (page 3-20), Chapter 4 (page 4-34), and Chapter 5 (page 5-15). We did not include the Tetra Tech report in the public draft of the CCP due to the sensitive nature of the resources. Copies of the report were shared with the Delaware Nation and the State Historic Preservation Office.

Comment: The State of Delaware Historical and Cultural Affairs office appreciates the “spirit of stewardship” for historic, archaeological, and cultural resources in the draft CCP/EIS. They look forward to continue to consult with the Service on cultural and historic resources once the Service selects an alternative for implementation. They also suggest the following cultural and historic resource protection strategies:

- Due to anticipated impacts on cultural resources from climate change, please consider the protection of archaeological sites when planning countermeasures to storm events and saltwater intrusion. Conduct evaluation testing on archaeological sites that might be affected. Some sites may be regionally or nationally significant and eligible for the National Register of Historic Places; such sites may need to be protected or documented through excavations.
- Consider conducting systematic auger core testing to identify the presence or absence of Native American sites in refuge wetlands.
- Arrange site visits with the State of Delaware Historical and Cultural Affairs office to known archaeological sites on the refuge.

Response: We look forward to cooperating with the State of Delaware Historical and Cultural Affairs office when we develop the step-down Cultural Resource Management Plan to determine how sites will be treated as they are inundated in the future, and how much survey we will do for new sites that might be inundated. The Service will continue to value the Historical and Cultural Affairs office’s review and advice during the planning of specific cultural resource undertakings at the refuge, and subsequent consultation with the office under Section 106 of National Historic Preservation Act.

Socioeconomics and Local Community

Socioeconomics

(Letter ID#:21, 39, 47, 55, 63, 64, 68, 80–Petition, 81, 82)

Comment: Several individuals feel that the draft CCP/EIS fails to adequately address the economic losses to local communities in its economic analysis, including economic losses to local farmers, landowners, retail shops, builders, wholesale suppliers, and other businesses from coastal flooding, saltwater intrusion, damage to beaches, and changes in habitat. For example, one local farmer writes, “The financial impact today and the potential impact of tomorrow on my family’s farm can only be described as devastating. I have completely lost over 40 acres to salt contamination with another 40 to 80 acres negatively impacted by cutting crop yields in half. I calculated a value of ten thousand dollars per acre.” Another writes, “The assumptions and social and financial impacts [discussed in Appendix I of the draft CCP/EIS] address only positive revenue enhancements to the local community [from the refuge]. Conspicuously absent...are those costs that can be...attributed to flooding in the surrounding communities.” Several also suggest that the refuge refer to DNREC’s draft economic analysis published on May 11, 2012 for additional information.

Response: We refer the commenter to the recent economic analysis conducted by DNREC for the Bay Beach communities. Some commenters may have misinterpreted the recent findings. The analysis included four different scenarios or alternatives, including no action, beach nourishment, and two strategic retreat options. The risk of flooding remains under all alternatives, as flood waters can enter the system from other sources such as the Broadkill and Mispillion Rivers. By their nature, barrier islands are dynamic and they move through the forces of sea level rise, storms, and erosion. Overwashes and inlets (breaches) are continually being created and closed due to these forces, as illustrated along the Delaware Bay shoreline in appendix J. Aside from the physical damage to the built environment which was shown so dramatically by Hurricane Sandy, sea level rise entails the inevitable landward expansion of wetter and saltier conditions in soils located near the coast. 500 feet of shoreline retreat since 1926 does not automatically translate into changes of upland areas 500 feet inland, as the rates of subsidence from ground water pumping and hydrological conditions also affect local conditions.

The Service believes restoration of the marshes provides the best solution for long-term sustainability in the face of changing environmental conditions.

Comment: One individual feels that economic losses to local homeowners from flooding (e.g., frequent repairs from flooding, severely decreased home values, difficulty selling homes, damage to septic systems) since the dune breaches constitutes an economic “takings” by the government. He writes, “This cost burden placed on homeowners by the management decision of the Refuge should be considered a “taking” requiring compensation to homeowners. Prime Hook Beach Organization echoes this sentiment, writing, “There has been no responsibility taken for the financially-compensable emotional toll on residents of adjoining communities...[There has been no] attempt to negotiate financial compensation with those who have been adversely affected.”

Response: The Service is concerned about the increase in flooding as it impacts the refuge as well as the communities and other neighboring landowners. However, as stated above the alternatives being considered in the economic analysis and the CCP/EIS will not reduce the risk of coastal flooding. The Service is attempting to develop sound ecological strategies to reduce the adverse impacts from such events by restoring the habitats which naturally buffer inland areas. The conundrum facing property owners on Prime Hook beach and other areas is that their houses are built on a very low-lying barrier island which has been eroding for decades. The risk to structures built in such environments was dramatically illustrated by Hurricane Sandy. Since barrier islands naturally “roll over”, i.e. migrate landward, as sea levels rise, structures placed on such ephemeral features are subject to substantial risk. We empathize with the stressful and difficult situation owners are confronting now. It is very appropriate for such homeowners to consider their options, but the Service is not the agency designated by Congress to address flood risk, so we urge homeowners to confer with their insurance carriers and FEMA.

Comment: One individual feels the CCP does not adequately address economic losses to the community from the expanded hunting program. In particular, he feels that hunting conflicts with other uses such as canoeing and kayaking and closures due to hunting will hurt local businesses that cater to non-consumptive refuge users.

Response: The Service does not believe there will be any economic losses to the community. On the contrary we believe there will be gains under our preferred alternative due to proposed increases in opportunities for all wildlife-dependent recreation including wildlife observation and photography. Canoeing, kayaking, and fishing on the western portion of Prime Hook Creek will continue to be permitted year round, which is discussed in the “Introduction” as a change from the draft version. Areas where various hunts would be expanded do not include trails that cater to non-consumptive users currently.

Local Community

(Letter ID#: 12, 20, 24, 27, 28, 33, 39, 42, 46, 47, 48, 49, 56, 59, 61, 63, 64, 65, 66, 70, 75, 76, 79, 80–Petition, 81, 82, 83, 85, 87, 94, 102, 104, S1, S2, S3, S8, S9, S19)

Comment: Several individuals felt that Service negatively portrayed local landowners, farmers, communities, showed a lack of concern for adjacent landowners, and blamed local communities for human disturbances to wildlife and habitats. For example, one person commented on the following text on page B-54 of the draft CCP/EIS: “development of homes and cottages are a threat to Refuge species because of residents build structures, desire artificial dune replenishment, increase pedestrian traffic, and let dogs run at large.” The person writes, “The fact is that nearly all residents are responsible stewards of the beach, participate in numerous conservation activities, and clean the beach of harmful debris.” Similarly, Delaware Audubon writes, “The statement implies that the homes and cottages themselves are causing damage to the habitat protection that is the refuge’s mission. As such, analysis of the future costs to the refuge in maintaining homes in this dangerous area is warranted.”

Another writes, “Many of these homes predate the refuge and we, the human disturbances, have tried to be good neighbors to the refuge and its wildlife preservation mission.” Another feels like the draft CCP/EIS, “Instead of addressing the problem, the plan actually blames property owners in what it calls ‘flood prone and vulnerable locations’...the insulting attitude and lack of concern expressed by a federal agency...is a breach of public trust.”

Response: We do appreciate the endeavors that local residents have made to assist the refuge and conscientiously maintain their own environment. We did not intend to cast aspersions upon them. The referenced statement was comparing current habitat conditions to those that existed historically prior to European colonization of the area. We describe the presence of neighboring development, most of which occurred before refuge establishment, as one of many human-associated factors that influence the ecology of refuge habitats. We evaluated the impacts of these factors because they are part of the current environmental conditions. However, it is not within our jurisdiction to make decisions about private properties and land-use decisions. Private landowners and local governments retain the right to make decisions regarding development that is adjacent to, but not on, refuge lands.

Comment: One commenter noted that page 2-9 of the draft CCP/EIS “the plan identifies that managing human population growth (more than 11 million) while maintaining functional natural ecosystems is the greatest conservation challenge in Area 44” and suggests that the USFWS views this as a motivation for eliminating towns adjacent to the refuge.

Response: The plan this statement is referring to is not the CCP/EIS, but rather the Partners in Flight (PIF) Plan for the Mid-Atlantic Coastal Plain Physiographic Region (also referred to as PIF Area 44). This plan was developed through a cooperative effort involving Federal, state, and local government agencies, non-profit institutions, professional organizations, the academic community, and interested private individuals. The plan acknowledges a number of large-scale conservation challenges, such as human development and population growth. This challenge is outside the scope of the CCP, and we do not address this challenge directly or indirectly in the CCP and do not wish to eliminate the towns and communities adjacent to the refuge.

Comment: The Town of Slaughter Beach commented on the town’s Comprehensive Land Use Plan and the importance of local farms in preserving and protecting the town. They write that “14 farms...adjacent to the refuge voluntarily participate in Delaware’s Farmland Preservation Program. The Town fully supports this program and its participating farmers. The two main goals of the Program are aimed at preserving croplands, forests and open space and providing farmers with an opportunity to preserve their land and avoid development pressures and decreasing commodity values. Failure to protect these farms from flooding and salt water intrusion contravenes the intentions of the Town’s [Comprehensive Land Use Plan] and the State’s Farmland Preservation Program.

Response: We understand local communities' concerns about flooding and salt water intrusion. We believe that our proposal to restore refuge impoundments to healthy, brackish marsh and salt marsh, as identified under our Service-preferred alternative B, will encourage the conditions most resilient to sea level rise, while providing valuable habitat for waterfowl, salt marsh obligate passerines and waterbirds, shorebirds, and other wildlife. Furthermore, additional healthy salt marsh in the refuge's wetland complex would provide benefits to neighboring human communities that the freshwater impoundments could not provide, or certainly could not provide in a self-sustaining manner. The presence of salt marsh vegetation in coastal marshes can reduce shoreline erosion by reducing wave energy. Wave heights are reduced by 60% within the first twenty feet of the marsh, which in turn also increases the potential for sediment deposition (Morgan et al. 2009, Broome et al. 1992). Because they are perennials, salt marsh plants develop extensive root systems that improve soil stability through deposition of below-ground biomass; thus, over time salt marshes will accrete vertically to better keep up with sea level rise (Cahoon et al. 2009, Reed et al 2008, Knutson 1988) and serve as a buffer to adjacent uplands. Through greater stability and resilience, a healthy salt marsh will provide neighboring communities with more flood protection than an artificially sustained freshwater wetland or open water.

We would also like to note that barrier beach inlet is not the only cause of flooding of private property during storm events. There are many other extenuating causes and effects involved, such as increased storms and storm intensities, heavier precipitation patterns, extreme wind and wave conditions, extensive run-off from uplands, low elevation of roads and private properties with respect to local mean sea level, local geologic features, sediment supply, and human activities. These factors increase the level of complexity of coastal flooding seen at the refuge and adjacent private lands.

The opening and closing of overwashes is a natural part of salt marsh systems. The shoreline along Unit I has breached and closed repeatedly over past decades (figure 1-1). This process likely accounts for the adequate vertical accretion that Unit I has experienced, keeping pace with sea level rise. As such, permitting overwashes is the best way to ensure the salt marsh remains able to provide a buffer for storms and flooding. In the time immediately after the 2006 Unit I breach formed, but before the Unit II breaches formed, the salt marsh in Unit I was thriving. We may consider closing this breach if needed for marsh restoration in Unit II. Breaches, in time are likely to close, but without more geomorphological investigations, we cannot predict how soon this might occur. Any additional stress experienced by Unit I is related to the fact that the wetlands in Unit II are degraded and unable to absorb the quantity of water from the Unit II breaches. The best solution for Unit I is ultimately the restoration of a healthy marsh within Unit II. The flow of water in this part of the wetland complex has been well documented, and is from Unit II into Unit I, not the other way around. We believe restoring the marshes would provide the best solution for long-term sustainability.

Comment: The Delaware Audubon Society asks, "For each alternative offered, A, B, and C, would there be any difference in decision recommendations if the homes of Prime Hook were removed and the homeowners relocated? In other words, would USFWS continue to recommend [Alternative] B and the costs thereof if there were no humans along the barrier island?"

Response: The purpose of the draft CCP/EIS is to analyze reasonable alternatives for managing the refuge over the next 15 years given current and foreseeable future conditions. Therefore, we did not consider or evaluate any alternatives based on extreme hypothetical circumstances that are not currently present. Whether or not the alternatives or decisions would be any different if the homes were not present along the barrier island is not relevant to the evaluation of proposed alternatives. Rather, we evaluate the impacts of the alternatives on the current condition, which includes the presence of neighboring communities. However, we do refer the commenter to the recent economic analysis conducted by DNREC for the Bay Beach communities.

Comment: The Delaware Audubon Society writes, "If USFWS is charged with putting forward a CCP in light of the constituents and communities around PHNWR, shouldn't a true long-term plan consider the financial analysis of an optimal solution for the area, including home relocation? There is no option that addresses this issue."

Response: It is outside the scope of the CCP, and beyond the Service's authority, to propose any alternative which would recommend the relocation or removal of private homes adjacent to the refuge or to conduct a detailed economic analysis of such options. However, we feel that it is entirely appropriate for the Service to evaluate management options within the capability of the refuge to implement. Alternative B has the most potential to enhance habitats which provide better storm buffering protection to upland areas than current conditions, and if we can expand the extent of healthy salt marsh this will be beneficial to neighboring landowners.

Comment: Several commenters write "that a de facto determination by the FWS in the CCP/EIS has been made that in effect finds - by exclusion in the CCP from the list of designated compatible uses - that the Prime Hook Beach community and any other NWR-adjointing community (Broadkill Beach and the Town of Slaughter Beach) do not constitute 'compatible uses' in the NWR as defined in 16 U.S.C. 668dd-668ee. Accordingly, we request that this issue be forthrightly addressed in the final CCP. If hunting, fishing, and trapping are fully compatible uses within refuges under the statute, communities residing in peaceful harmony next to a refuge also must be deemed compatible."

Response: While community members regularly use the refuge, the existence of the neighboring community itself is not a refuge use as defined by policy. According to Service Policy (603 FW 3) a compatible use is defined as "A proposed or existing wildlife-dependent recreational use or any other use of a national wildlife refuge that, based on sound professional judgment, will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purposes of the national wildlife refuge." This policy only applies to uses occurring on refuges and is not intended to apply to neighboring communities or uses on lands adjacent to the refuge.

Comment: The authors of one letter write, "In selecting alternatives or management strategies that could put human habitats such as Prime Hook Beach at possible catastrophic risk or subject them to extreme public safety hazards and property damage, the Service somehow chooses to define "community" as hunters and fishers, birders, photographers, recreational visitors, and incorporated municipalities e.g., Milton and Milford - places far removed from the impacts of the CCP"

Response: The commenters are referring to the use of the word "community" as defined by the U.S. Geological Survey (USGS) for their survey of refuge visitors and the local community. For the survey, USGS interviewed visitors to the refuge and individuals living in the communities surrounding the refuge in 2004 and 2005 to determine visitor and community attitudes and preferences about the refuge. Surveys were randomly distributed to both consumptive and non-consumptive-use visitors and to a stratified random sample of "community" members in adjacent and surrounding areas which included Slaughter Beach, Broadkill Beach, Prime Hook Beach, Milton, Lewes, Milford, and surrounding communities.

Comment: Several individuals question why other beaches in Delaware have been restored and replenished with sand, but not the beaches at Prime Hook Refuge. One writes, "Broadkill and Slaughter Beach are being replenished...You are neglecting some residents and not others?"

Response: The Prime Hook Beach community is currently a private beach community and is not participating in the State's beach replenishment program. The refuge and State have never replenished any of the undeveloped areas in Delaware Bay.

Refuge Habitats and Vegetation

General

(Letter ID#: 70, 80-Petition, S16)

Comment: One commenter noted that the CCP is direct conflict with stated refuge goals because it does not protect the "dynamic beach island."

Response: We believe that restoration of healthy shoreline and salt marsh processes will allow the beach island to function in the dynamic manner that is natural. A dynamic barrier beach island is exactly that, dynamic, with the formation and natural closure of breaches and inlets. This has been evident along the refuge shoreline for decades (figure 1-1 and Appendix J). Protecting this habitat does not necessarily imply continuous dune construction and manipulation to maintain a static shoreline condition, but rather allowing natural processes to occur without interference and, if natural conditions have been altered by human actions, intervening only to restore the system to a more natural condition.

Comment: One individual suggested that the refuge use the following management techniques to improve wildlife habitat on the refuge: food plots, early successional management, timber stand improvement, freshwater impoundment management, and moist soil units.

Response: (See also comments and responses under “Early Successional Habitats, Including Grasslands and Shrublands,” Croplands and Cooperative Farming,” and “Impoundments”). We believe our objectives and strategies under our preferred alternative include many of these techniques mentioned above.

Forested Habitats

(Letter ID#: 22, 98, 107)

Comment: One individual asks that the refuge cease active forest management, stating that, “It [is] very expensive for all those vegetative tree treatments...It is best to let the trees fall naturally...They need to be left in place and they are used by wildlife.” She also feels that commercial forest management is not a compatible use of the refuge, writing, “keep and save the trees which are necessary for bird and wildlife homes.”

Response: We respectfully disagree. Active management is needed to strive to meet the desired forest conditions and our migratory bird and endangered species objectives.

Comment: The State of Delaware writes that it “in general supports the Service’s timber practices, but recommends that the Service amend the CCP to include a statement identifying a range of dates that encompasses the breeding season for the largest majority of birds occurring on the Refuge, such as April 1 through July 31, and preclude forest alteration practices during this time of year restriction.”

Response: Thank you. We added this as a strategy under objective 2.1 in the final CCP/EIS.

Early Successional Habitats, Including Grasslands and Shrublands

(Letter ID#: 22, 65, 80–Petition, 81, 93, 107, S18)

Comment: One individual was concerned about the potential impacts of prescribed burning to maintain early successional habitat on wildlife. In particular, she felt that prescribed burning during the springtime could kill young birds and other animals.

Response: Many early successional habitats are fire-dependent communities. Fire rejuvenates desired vegetation communities and eliminates undesirable plant communities. It also releases valuable nutrients back into the soil. It is true some wildlife may be injured or killed if they are unable to get out of the fire’s path. However, the refuge works closely with Service fire program staff to carefully plan all prescribed burns on the refuge to minimize impacts on wildlife (e.g., only burning at certain times of year to protect nesting areas and animals) and to ensure public and fire staff safety.

Comment: One individual writes, “Under “Prescribed Burning,” [on page B-115 of the draft CCP/EA] it seems likely that unless greater emphasis is placed on removal of all the dead and dying vegetation, both trees and shrubs, there will be so much additional fuel for fires that the risk of performing prescribed burning getting out of control would be greatly increased under Alternatives A and B.

Response: Experts in fire management have developed fire models incorporating fuel load, fuel type, fuel moisture, ambient humidity and other factors to determine whether a prescribed fire would fall within safety limits. Sometimes other methods of reducing fuels are conducted alone, or in concert with prescribed fire, such as mowing, chopping, or removal of woody vegetation.

Comment: One individual urged the refuge not allow the upland fields along the refuge entrance road to transition to shrubland or forest, writing, “These fields are valuable for grassland wildlife species and provide a diversity of habitat. What about security of your office and shop complex? If they are hidden from view, vandalism is more likely.”

Response: We agree that managing for early successional shrubland habitat may provide greater biological diversity and biological integrity. As outlined under the Service’s preferred alternative, objectives 4.1 and 4.2, we propose to continue to manage several fields (approximately 120 acres), including those referred to in the comment, as early successional habitat. However, we have decided to allow some other fields transition to shrubland and forest because we believe these habitat types will provide higher quality habitat for refuge wildlife. As outlined in chapter 3, the grassland bird study conducted by the refuge resulted in some of the lowest abundance of grassland birds and the lowest relative contributions of obligate grassland birds in these fallow fields. Prime Hook NWR showed some of the lowest densities, much less than Midwestern habitats or other refuges in the region.

Comment: Several commenters asked that the refuge manage early successional habitats for migratory birds. A representative for the Humane Society of the United States stated that the refuge should manage for a variety of habitats and species, including early successional species. The Delmarva Ornithological Society asked that the refuge retain most of the former agriculture lands as early successional habitat over the long term to benefit declining bird species including “American woodcock, northern bobwhite quail, brown thrasher, eastern towhee, yellow-breasted chat, field sparrow, grasshopper sparrow, and eastern meadowlark.” They stated that the refuge manager informed them that only a portion of these agricultural fields are going to be maintained as early successional habitat, even though the table for alternative B in the draft CCP/EIS said this entire area was going to be early successional habitat. Similarly, the Delaware Division of Fish and Wildlife also “encourages the Service to develop and maintain early successional habitat” in formerly farmed fields. Although they agree that reforestation of portions of former farmed lands will benefit some migratory birds, “early successional habitats... are fragile habitat components important to many rare species” including “eastern meadowlark, grasshopper sparrow, American kestrel, and possibly Henslow’s sparrow.”

Response: As mentioned in our previous response, under our preferred alternative, we propose to continue to manage 120 acres of grassland on the refuge. We discuss this in more detail in the Habitat Management Plan (HMP) in appendix B of the draft CCP/EIS. We also propose to actively manage additional fields as shrublands, permitted to revert to shrub cover naturally, or expected to provide shrub habitat during the successional process as forest cover develops. The objective prescribes early successional management for at least 200 acres on the refuge at any time. The HMP also explains how we identified priority focal species for early successional habitats, including Henslow’s sparrow.

Comment: A commenter noted on our discussion on page B-70 of the draft CCP/EIS. He writes, “in order to manage the grassland bird species, habitats at the Refuge have to support a diversity of terrestrial insect species from grasshoppers to beetles and caterpillars, which in turn are prey for bird populations. Also, the grassland species require food such as mice, voles, shrews, rabbits, groundhogs and snakes for predators listed in Table 13. Mostly, these prey species would become far scarcer as the salt marsh expands, which would occur under alternatives A and B.”

Response: We project, that over the 15-year life of the CCP, our restoration of former agricultural fields will increase these species abundance on the refuge. However, we agree that, as sea levels rise over time, the refuge’s terrestrial habitats will diminish in size and quality.

Wetlands

(Letter ID#: 24, 70, 80–Petition, 81)

Comment: One commenter noted that the CCP is direct conflict with stated refuge goals because it does not maintain the “wetland impoundment complex.”

Response: A wetland can be part of an “impounded wetland complex” without being a freshwater impoundment. In fact, most managed impoundments in Delaware are brackish, rather than freshwater. As explained in the rationale for objective 3-1 under alternative B in the draft CCP/EIS, the presence of the roads and associated water control structures and culverts mean that portions of the refuge wetlands will always be impounded or semi-impounded. This is the wetland impoundment complex referenced in the refuge goal.

Comment: One commenter claimed that the CCP states “Marsh management techniques may increase the amount of open water on the refuge” and expresses concern that open water does not provide the same level of flood protection and wildlife benefits that marsh does.

Response: We feel that alternative A is the only alternative in the CCP/EIS that would likely lead to an increase in open water over the long term. The Service’s preferred alternative, alternative B, would actively restore marsh and would not increase the amount of open water over current conditions. Given the SLAMM and other models, transition to open water may occur across wide areas of the refuge simply due to sea level rise, and it is uncertain whether Alternative C—relying upon natural processes to provide sufficient sediments to “catch-up”—will be effective within the timeframe of the CCP.

Comment: The authors of one letter write, “The CCP draws conclusions without a proper basis. The CCP does not contain a wetland restoration plan. How can the Alternatives be fairly evaluated if it is not clear as to what FWS will do to provide for this wetlands restoration?”

Response: The CCP guides the refuge management in a broad and long term framework, and the details of a particular restoration plan were outside the scope of the CCP process. Detailed restoration plans of comparable scope elsewhere in the country have routinely taken years to develop; accounting for the time needed to collect data, model habitat conditions, evaluate restoration options, and prepare the plan. Admittedly, most restoration plans are prepared with the benefit of a stable situation, rather than in a reactionary context. We did not want to delay the release of the entire CCP until a detailed restoration plan could be developed. As the commenters noted, many restoration concepts would need to be developed further by engineers for more detailed analysis, a process that is time-consuming and requires rigorous data. The partnership to move such plans forward and the necessary analysis to further develop options have already started. Furthermore, the final CCP/EIS does incorporate additional details about strategies that we will be poised to act upon once the CCP is completed. The Service acknowledges it does not have all the information collect yet to develop a restoration plan. We continue to work with our partners in collecting the appropriate data. The hydrodynamic modeling is one component needed for the restoration plan. The Service also recognizes additional environmental analysis and permitting will be needed.

Comment: One individual writes, “This CCP falls far short of planning how to manage this refuge’s wetlands for the next 15 years. One of the refuge staff, at an open house, stated that we need freshwater wetlands, but in the middle of the state. He chose not to address if the impoundments at Bombay Hook should also be allowed to revert to salt marsh. There is a larger issue here that the CCP ignores. What is causing the sudden rapid loss of beach from Kitts Hummock in the north to Broadkill Beach in the south? You need to know and understand the bigger picture of what is causing the accelerated erosion from Mispillion Inlet down to Cape Henlopen before you can meaningful fix any problem on the refuge.”

Response: DNREC has done some modeling work in Delaware Bay and may have some of the answers to these questions. We, along with our partners continue to look at these issues at a landscape scale. However, we acknowledge that there are existing information gaps that can be further addressed.

Dune Breach, Marsh Restoration, and Shoreline Stabilization

(Letter ID#: 1, 2, 4, 8, 15, 18, 21, 23, 24, 25, 27, 28, 29, 33, 34, 38, 39, 40, 41, 42, 43, 45, 46, 47, 48, 49, 50, 52, 54, 55, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 74, 75, 76, 78, 79, 80–Petition, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 94, 95, 96, 98, 100, 101, 102, 104, 107, 108–Form letter; S1, S2, S3, S4, S8, S10, S13, S16, S17)

Comment: Numerous commenters asked that the refuge close the dune breaches and restore freshwater marshes to protect neighboring communities and farms from salt water intrusion and coastal flooding and to provide freshwater impoundments for waterfowl and other wildlife. Of these comments, many wished to see the breaches closed immediately. For example, the State of Delaware reiterated their position that the breaches “must be closed in the short-term to allow a managed and phased approach to achieve long-term marsh restoration, as well as mitigate the impacts on neighboring farmland and homes, and preserve them as closed until a functioning, self-sustaining tidal marsh can be established in Unit II, [and consider marsh restoration options for Unit III that will provide quality and diverse habitat (addressed below)]. Our goal of closing the breaches has been frustrated by a number of factors over the last few years, but the state is prepared again to contribute toward a solution.” Several other commenters agree, stating that given the length of time likely for finalization of the CCP, the FWS needs to affect a temporary solution to close the breaches immediately to preserve all options, protect the health and safety of neighboring persons as well as farmlands.

Response: It was our intent to maintain short-term stability for Unit II by reestablishing the dunes, as explained in the November 2010 Dune EA and FONSI. However, the site conditions have changed dramatically and there is no longer enough sand on site to reestablish the dunes. That EA also evaluated the use of off-site sediment, but the costs of this approach would have to be borne by the State or others. We did not specifically exclude filling the breaches under alternative B. Rather, any work we conduct along the shoreline will be part of a more comprehensive marsh restoration; as the means to an end, not as the end goal itself. We believe restoring the marshes would provide the best solution for long-term sustainability. We have always stated that dune work/breach closure was a possible, and indeed likely, first step toward restoring the salt marsh. We have reworded a strategy in the draft CCP/EIS to state this more clearly. In the strategies under Objective 3.1 of alternative B in the draft CCP/EIS, we outlined many short-term strategies that we may use to restore the marsh and hopefully reduce the flooding. We have also recognized that during the marsh restoration process there may be a need to close the breaches while affecting restoration. By their nature, barrier islands are dynamic and they move through the forces of sea level rise, storms, and erosion. Overwashes and inlets (breaches) are continually being created and closed due to these forces, as illustrated along the Delaware Bay shoreline in appendix J.

We also acknowledge that State assistance in finding material to complete marsh restoration will be critical, and greatly appreciate their offer to contribute to a solution.

Comment: One individual writes, “The time required to develop plans, resolve uncertainty in their effectiveness and determine costs, the truly best alternative for the taxpayer would be to undertake only a version of the CCP recommendation for the immediate future laid out on page 1-19: fill inlets and fully re-establish dunes along Unit II as needed to allow for time to ascertain what site-specific workable and effective plans for marsh restoration can be developed, and determine their costs.”

Response: Recently, the Service started collecting data to understand marsh transition to help make science-based management decisions. The results indicate the need for a detailed marsh restoration planning effort, which will outline strategies to rebuild a resilient mix of salt marsh (dominated by *Spartina alterniflora* with significant areas of *Spartina patens*), brackish marsh, and freshwater marsh. This approach is the appropriate sustainable option to help the refuge adapt to the realities of sea-level rise and the changing estuary environment. Prior studies in similar estuary systems suggest that a firm understanding of the hydrodynamic characteristics is essential to making restoration and management decisions.

Filling the breaches along Unit II is identified as a possible strategy under Objective 3.1 of Alternative B. However, we only plan to fill the breaches if we determine that such a step would support our salt marsh restoration objective. As mentioned in our previous response, we do feel that filling the breaches is likely a potential first step in comprehensive marsh restoration. For example, the construction of a dune may be necessary to prevent bay waters from entering the restoration site during project implementation. We will base our decision on whether to filling the breaches on hydrodynamic modeling that is underway and by further consultation with the State and wetland experts.

Comment: Several commenters felt that the breach north of Fowler Beach Road in Unit I poses a threat to the stability of the adjacent salt marsh, and suggest that the refuge consider closing that breach in all of the alternatives. Form letter says, “Rebuild the barrier dune both north and south of Fowlers Beach Road. This would reduce the amount of salt water entering the refuge in Unit II. This would leave only Slaughter Canal where water would enter from the north end as it has done for 100 years. Prime Hook Creek and Peterfield Ditch would still be the main outlets to the south and east in Unit III....” The form letter then continues, “Rebuilding the barrier beach would not only save the beach communities, the agricultural land to the west and restore the freshwater marshes, it would protect the natural area for the horseshoe crabs to lay their eggs and the shore birds to feed on them.” Several individuals state that man-made, engineered projects have successfully protected shorelines elsewhere and would work to protect Prime Hook Refuge habitats and adjacent landowners.

Response: The opening and closing of overwashes is a natural part of salt marsh systems. The shoreline along Unit I has breached and closed repeatedly over past decades (figure 1-1). This process likely accounts for the adequate vertical accretion that Unit I has experienced, keeping pace with sea level rise. As such, permitting overwashes is the best way to ensure the salt marsh remains able to provide a buffer for storms and flooding. In the time immediately after the 2006 Unit I breach formed, but before the Unit II breaches formed, the salt marsh in Unit I was thriving. We may consider closing this breach if needed for marsh restoration in Unit II. Breaches, in time generally close if there is an adequate sediment supply, as it is a natural function. Any additional stress experienced by Unit I is related to the fact that the wetlands in Unit II are degraded and unable to absorb the quantity of water from the Unit II breaches. The best solution for Unit I is ultimately the restoration of a healthy marsh within Unit II. The flow of water in this part of the wetland complex has been well documented, and is from Unit II into Unit I, not the other way around.

Comment: Several commenters expressed concern that no short-term or “shovel ready” strategies are included in the CCP/EIS, and that restoration appears to focus only on the long-term with no regard for short-term marsh stabilization.

Response: As stated in the list of strategies for Objective 1-1 and Objective 3-1 in Alternative B of the draft CCP/EIS, we recognize that short-term shoreline stabilization may likely be the first step of comprehensive marsh restoration. We have reworded this section in the draft CCP/EIS to state this more clearly. Again, we would only conduct shoreline stabilization as part of a more comprehensive marsh restoration. We feel that, without further salt marsh restoration efforts, the refuge’s wetland ecosystem of the refuge would continue to suffer. We also feel that the duneline would continue to be vulnerable due to the elevation deficit and the presence of only open water or unvegetated mudflat behind it.

Several strategies under objective 3-1 under Alternative B could be implemented as soon as the CCP is finalized and the necessary resources secured. We apologize for this confusion, but acknowledge that it was presented in a manner that suggested they may not be pursued immediately. The final CCP/EIS clarifies that we intend to initiate appropriate, short-term restoration projects within the first year of (perhaps within months of) CCP finalization, and that we have already started conducting site evaluations and building partnerships to facilitate these projects. Although we do not expect these short-term strategies to achieve large-scale restoration, we believe they would provide incremental improvement and benefits. We have provided additional details on these strategies in the final CCP/EIS, and also evaluated additional strategies recommended by commenters.

Comment: One individual writes, “I question if [the U.S. Army Corps of Engineers] sand is used why Alternative C would be cost-prohibitive?”

Response: Alternative C would be cost prohibitive due to the costs of perpetual maintenance as sea level continues to rise.

Comment: One individual writes, “The refuge manager, and others, recently, while this CCP is under review, has stated that in the near future, sand (from the Delaware River Project?) will be brought in to rebuild the dunes/breaches. Where is that discussed in the CCP? What will the impact be on your preferred option? Is this secret project covered by the dune repair EA? If so, once again, whatever happened to Option B?”

Response: We presented information on this proposal under objective 3.1 of Alternative B in the draft CCP/EIS and analyzed the impacts of this proposal in Chapter 5 in the draft CCP/EIS.

Comment: Several commenters expressed concern that the refuge and the Service were not working proactively enough with DNREC and the Army Corps of Engineers regarding the potential use of dredge material, such as from the Main Channel Dredge Deepening project, for wetland restoration, or had not clearly prioritized restoration at Prime Hook NWR over the Kelly Island project. The Service is accused of “waiting for permission rather than working for a more immediate response and compromise.” Another writes, “Without DNREC’s agreement, [this proposal] is mostly meaningless.”

Response: We respectfully disagree and have been communicating with both the U.S. Army Corps of Engineers (Army Corps) and DNREC about the use of these dredge spoils. In June 2011, we communicated directly to the Army Corps about our concerns regarding the Kelly Island project, as it had been previously proposed and approved. By letter, Project Leader Michael Stroeh explained that there would be better uses for the material on the Coastal Delaware NWR Complex and asked the Army Corps to consider those alternatives. Throughout fall 2011, we met with staff from DNREC and the Army Corps to discuss Kelly Island and alternative projects. The Army Corps requested summaries of alternate sites statewide, an effort to be led by DNREC. We promptly sent a summary of the proposed Prime Hook NWR project to DNREC. At DNREC’s request, we later submitted an updated summary of the proposed Unit II marsh restoration for them to submit to the Army Corps for further consideration.

As we have explained in the CCP and in public forums, it is the State of Delaware, through DNREC, that has the task of prioritizing the list of projects in the state and coordinating the decision process with the Army Corps. From an early time, we have repeatedly expressed interest in using these materials for marsh restoration. We have also proactively incorporated using these materials into the CCP to help fulfill NEPA requirements, and we continue to take steps to prepare to make use of the material if we can get it (e.g., through our hydrological modeling work). However, we cannot force DNREC or the State of Delaware to prioritize Prime Hook NWR marsh restoration as a beneficial use project for the Main Channel Deepening project, or any other sediments, dredged from the bay. DNREC and other officials within the State of Delaware will make a decision about the placement of sediment from bay dredging projects, such as the Main Channel Deepening project, based on many factors. We believe we will be well positioned with regard to NEPA requirements and the modeling and data necessary to move the project forward.

Comment: Some noted that there is no alternative tactic provided if sediment from the Main Channel Deepening project is not available. Several also suggest dredging from sandbars and/or trucking in sediment from an inland source.

Response: We agree that it is important to consider alternative strategies, because there is no guarantee that the refuge wetlands will be the selected beneficial use site for the Main Channel Deepening sediments. The strategies outlined under objective 3.1 under alternative B in the draft CCP/EIS included a number of options that do not rely on dredge materials. We also consider other sources of dredge material, other than the Main Channel Deepening project. For example, maintenance dredging is also conducted routinely in the Delaware Bay. In the final CCP/EIS, we have further developed several of these restoration strategies and have evaluated and added additional strategies based on the comments we received.

As far as trucking sand from an inland source, DelDOT has told us that the road to Fowler Beach cannot accommodate the quantity of truck-hauled material that would be necessary for sufficient dune repair work. Because of this, we do not consider trucking in sand a viable option.

Comment: Several commenters stated that filling the breaches should not require an EIS, since the Service had previously written an EA and FONSI for filling breaches. Additionally, several commenters stated that the use of spoils from the dredging of the channel offshore of the Slaughter, Fowler, and Prime Hook Beaches should not require an EIS since the Army Corps of Engineers has already done this EIS and are ready to move forward with this dredging.

Response: The EA and FONSI we wrote in November 2010 (USFWS 20120) only assessed the impacts of truck hauling sand and scraping sand from the landward side of the dunes. It did not examine the impacts of using dredge material on Prime Hook's shoreline and marshes. Similarly, the U.S. Army Corps' of Engineers EIS for the main channel-deepening project only examined the impacts of the dredging the main channel on the Bay, the Broadkill Beach renourishment project, and the proposed Kelly Island project. The EIS did not consider the impacts of marsh or shoreline restoration on Prime Hook NWR. We will still need to complete an additional EIS that evaluates the use of this dredge material and assesses the impacts of marsh restoration to comply with NEPA. However, that document can tier from these other documents and incorporate much of the information contained in this EIS into that one. So, the scope of the other document may be able to be reduced.

Comment: The Delaware Riverkeeper Network is concerned about the use of spoils dredged from the main channel of the Delaware River by the U.S. Army Corps of Engineers to restore dunes and/or dikes at Prime Hook Refuge. They write, "Disposing of soils from the deepening project is unwise due to the contaminants known to be present within those spoils..." They also state that if the refuge considers using these spoils, they would need to draft a much more rigorous and complete EIS and that the U.S. Army Corps of Engineers would also have to update their EIS for the 45' Main Channel Deepening Project before the refuge could accept those soils.

Response: The Service has reviewed the Corps' documentation regarding contaminants. From the data we have received for Reach E there are no contamination issues. The Service will continue to work with the Corps of Engineers to make sure no contamination will occur from the dredge material. As stated earlier the marsh restoration planning may require additional environmental assessments as the modeling and other data become available.

Comment: Several commenters stated that it is their understanding that Kelly Island as a depository for channel dredging spoils is not favored by the USFWS, and that therefore, there should be no question as to the placement priority, as indicated by the Fish and Wildlife Service for the dredge spoils offshore of the Slaughter, Fowler, and Prime Hook Beaches should be made available for Impoundment II.

Response: It is true we have concerns with the proposed Kelly Island project. We, along with DNREC, have expressed those concerns to the Army Corps in writing and in person at several meetings. Because of our concerns, we have also recommended using the material originally intended for Kelly Island on Prime Hook NWR instead. Although all parties were receptive to the idea, many areas along the Bayshore are in need of sand and sediment. The decision regarding the use of dredged material for restoration rests with DNREC. We remain hopeful that if the Main Channel Deepening project proceeds as planned, the refuge will receive some sand and/or sediment from the project.

Comment: One individual writes, “Far greater emphasis on drainage outlets needs to be addressed in...the CCP.”

Response: We agree that specific information on drainage is an important component of our proposed marsh restoration. We will include specific information about drainage when we develop a final marsh restoration plan.

Comment: One individual writes, “How and where are lowered water tables anticipated? It seems unclear that only freshwater water tables are being discussed.”

Response: We discuss restoration of fresh water table in prior converted wetlands via filling ditches. We also discuss lowering of salt/brackish interstitial water in saltmarsh via creating ditches in chapters 3, 4 and 5 of the CCP/EIS.

Comment: One individual writes, “On Pg 4-49, the CCP sets the goal of keeping water levels at Unit III at or below 2.8 feet mean sea level from October to March 10. Without adequate drainage of all of the Units, it is difficult to see how this goal would be attained.”

Response: We agree. Restoring the natural hydrology is critical to meeting our restoration objectives.

Comment: Numerous individuals and organizations commented on the impacts of the dune breaches on neighboring communities and farmlands. They specifically mentioned the following: damage to houses and roads from flooding, damage to farm fields from saltwater intrusion, public safety concerns due to flooded roads, and pollution from overflowing septic systems.

Response: We understand local communities’ concerns about flooding and salt water intrusion. We believe that our proposal to restore refuge impoundments to healthy, brackish marsh and salt marsh, as identified under our Service-preferred alternative B, will encourage the conditions most resilient to sea level rise, while providing valuable habitat for waterfowl, salt marsh obligate passerines and waterbirds, shorebirds, and other wildlife. Furthermore, additional healthy salt marsh in the refuge’s wetland complex would provide benefits to neighboring human communities that the freshwater impoundments could not provide, or certainly could not provide in a self-sustaining manner. The presence of salt marsh vegetation in coastal marshes can reduce shoreline erosion by reducing wave energy. Wave heights are reduced by 60% within the first twenty feet of the marsh, which in turn also increases the potential for sediment deposition (Morgan et al. 2009, Broome et al. 1992). Because they are perennials, salt marsh plants develop extensive root systems that improve soil stability through deposition of below-ground biomass; thus, over time salt marshes will accrete vertically to better keep up with sea level rise (Cahoon et al. 2009, Reed et al 2008, Knutson 1988) and serve as a buffer to adjacent uplands. Through greater stability and resilience, a healthy salt marsh will provide neighboring communities with more flood protection than an artificially sustained freshwater wetland or open water.

We would also like to note that barrier beach inlet is not the only cause of flooding of private property during storm events. There are many other extenuating causes and effects involved, such as increased storms and storm intensities, heavier precipitation patterns, extreme wind and wave conditions, extensive run-off from uplands, low elevation of roads and private properties with respect to local mean sea level, local geologic features, sediment supply, and human activities. These factors increase the level of complexity of coastal flooding seen at the refuge and adjacent private lands.

Comment: The State of Delaware Department of Agriculture contends that by not closing the breaches and allowing salt water intrusion to continue, the Refuge is operating counter to its own recommendations associated with forging new community partnerships and strengthening existing ones.

Response: This past spring, we expanded an informal advisory partnership with numerous academic professionals and representatives of other agencies to include representatives of the Alliance for Bay Beach Communities (ABC), the Prime Hook Beach Organization (PHBO), and the local farming community. We also included all of these groups in a wetland restoration workshop. As described in the strategies for objective 3-1 under alternative B in the CCP/EIS, we envision that we will continue to work with these partners, along with members of the public, once the CCP is finalized to discuss the next steps in wetland management and restoration. We also intend to host public forums to share restoration plans as they are developed, in order to seek public feedback and involvement. In addition, we have recently taken steps to expand its formal partnerships. We also plan to continue our successful partnership with the DNREC Coastal Program, which has been responsible for considerable monitoring and data collection that has been pivotal for guiding management decisions and contributing to upcoming modeling efforts. As further described in the rationale and strategies associated with Objective 3.1 in the preferred alternative of the final CCP/EIS, efforts are underway to formally partner with the Partnership for the Delaware Estuary (PDE) regarding the potential application of living shoreline techniques in appropriate areas of the wetland complex. Regarding a formal private-public partnership between the refuges and the neighboring communities, the purpose, structure, and mechanism for a formal partnership between the refuge and private community entities would need to be examined. However, this is an option that could be explored further following finalization of the CCP.

Comment: The State of Delaware Department of Agriculture stated that the continued breach in the dunes is the result of management decisions which negatively impacts private farmland and facilitates expansion of salt water intrusion.

Response: We recognize the negative impacts of coastal flooding and salt water intrusion on local communities and farmlands. We acknowledge the impacts of tidal flow through the breaches in various sections of chapter 5 of the draft CCP/EIS. Barrier islands are naturally dynamic and are shaped by the forces of sea level rise, storms, and erosion. Overwashes and inlets (breaches) are continually being created and closed due to these forces, and there is a demonstrated history of this along the refuge shoreline (appendix J). We respectfully disagree with the assertion that the continued breach in the dunes is a result of a management decision. On the contrary, we worked closely with DNREC to repair the dunes in 2011. That repair was delayed by litigation and ultimately was not successful because the amount of material available on-site for the repair was limited. The use of off-site material was not a viable option as the roads cannot support heavy truck traffic.

We have always stated that dune work/breach closure was a possible, and indeed likely, first step toward restoration of the salt marsh. However, repairing the dunes alone will not eliminate future flooding of roads and agricultural lands during extreme high tide and storm events, since floodwaters can enter these areas through locations other than the existing breaches. Rather, restoring the natural hydrological function of historic refuge salt marshes would provide valuable ecosystem services such as storm surge protection and flood protection, which minimize the impacts of floods. In addition, the flooding of roads and agricultural lands is not unique to the Prime Hook NWR area, several other areas in coastal Delaware routinely flood during high tide and storm events.

Comment: The State of Delaware stated that the continued breach in the dunes causes ditches to act as a conduit bringing salt water further inland.

Response: We agree that these ditches act as conduits for salt water intrusion. These ditches were originally created to drain agricultural land, and they can now provide a conduit for saltwater intrusion and flooding as sea levels rise. In order to prevent this from occurring, landowners may need to install flood control devices in the future. Such adaptations have been necessary on coastal agricultural land elsewhere.

Comment: Several commented on the negative impacts of the dune breach (including conversion of freshwater impoundments to brackish water) on wildlife, such as waterfowl, fish, horseshoe crabs, reptiles and amphibians, and invertebrates. One writes, “Has the service considered the negative impact on wintering waterfowl numbers over the entire refuge area since the loss of freshwater impoundments? If so, what benefits will returning the entire marsh to saltwater incur on wintering waterfowl numbers?”

Response: Yes, the Service has acknowledged the potential reduction in waterfowl numbers. Actually BIDEH policy recognizes that at times we may be sacrificing biological diversity at the local scale for biological diversity and biological integrity at the landscape scale.

Comment: One individual writes, “Brackish tidal creek shrub swamp is a good habitat for target ROCS: the prairie warbler, the short-eared owl, the sedge wren, and the coastal plain swamp sparrow. Heavy tidal flooding associated with storm surges is the most likely cause of heavy damage to this habitat and its associated species.”

Response: Potentially true, however restoration of former agricultural fields may offset the conversion of habitats to brackish-saline types. Short-eared owls would readily use high saltmarsh if not dominated by *Phragmites*.

Comment: The authors of one letter write, “The lack of strong control for the waters flowing in and out of these breaches caused the FWS to fail to both accomplish its stated mission as well as meet its guiding principles. Will the FWS modify the [preferred] alternatives...to provide for a means by which the water levels in the impoundments will be controlled to both sustain and protect wildlife?”

Response: The Service’s preferred alternative B proposes to allow natural processes, including inlet formation, sand migration, and overwash development, to change and shape barrier beach habitat on the refuge. These natural processes will continually shape the structure and functioning of coastal landforms and habitats (including sandy beach, overwash tidal flats, dune and grasslands, and mudflats) along nearly 3.5 miles of shoreline in all refuge management units. Both the Delaware State Wildlife Action Plan and the BCR 30 Plan identify the dune habitat system, with overwashing and ephemeral inlets, as a key wildlife habitat of special conservation concern. Wildlife species that benefit from this habitat type include spawning horseshoe crabs, nesting American oystercatcher, other State- and federally listed beach nesting bird species, and foraging and staging sanderlings, whimbrel, and other migratory shorebirds. Because of the benefits to species of conservation concern, we feel that our proposal is consistent with the Service’s stated mission and meets its guiding principles.

Comment: One respondent felt that the draft CCP/EIS failed to acknowledge the dramatic degradation of the refuge habitats and BIDEH (biological integrity, diversity, and environmental health) from saltwater intrusion through breaches on uninhabited shoreline that the refuge now mostly controls.

Response: We acknowledge how the breaches change and impact wetland habitat throughout the “Influence of Climate Change on Physical Environment and Refuge Management” section of Chapter 3 of the draft CCP/EIS, as well as in the “Impacts of Alternative A” sections of Chapter 5 devoted to Vegetation, Hydrology, and Soils/Sediment. We summarized the steps the refuge took to partner with DNREC to fill the breaches and stop the influx of saltwater under the discussion on “Soft Engineering Methods to Stabilize Shoreline” under “Actions Considered but Eliminated from Detailed Analysis” in Chapter 4. The 2011 breach closure effort included an attempt to fill the breaches on both refuge and private land with the only available sediment, that which was onsite. Although the refuge now owns additional tracts along the affected shoreline, this has only been the case for a few months. The juxtaposition of the remaining private land along the refuge-owned shoreline will continue to be a factor in shoreline management decisions.

Comment: One individual was concerned about the impacts on wildlife and refuge habitats under alternatives A and B from the dune breaches and associated salt water intrusion and permanent open water. He states the following:

- Permanent open water under alternative A in Units II and III will result in decreasing terrestrial, marine, and freshwater insect species populations.
- Saltwater intrusion will decrease plant diversity under alternatives A and B, which in turn will lead to decreased insect abundance and diversity, including the following species: golden beach heather; little glassy wing, Delaware skipper; and their host plant eastern red cedar; marbled underwing, little wife underwing, and their host plant swamp cottonwood; bronze copper; common firefly; sedges, rushes, and blue irises; little wife underwing and its host plant southern bayberry; and great purple hairstreak.
- Alternatives A and B could greatly reduce the number of pollinators on the refuge due to habitat loss.
- Salt water intrusion will have greater than minor negative impacts on reptiles and amphibians, including the carpenter frog.
- Permanent open water under alternative A will attract increasing snow geese populations which are destructive for marsh development.
- The refuge's overall BIDEH will be impaired under alternative B because of the potential for huge losses in overall diversity of species, including reptiles, amphibians, and terrestrial and freshwater aquatic invertebrates.

Response: In response to concerns about invertebrates and their host plants, we acknowledge that the refuge's insect and plant communities under alternatives A and B are likely to shift as habitats change: from species characteristic of native freshwater marshes to species that live in native brackish marsh and salt marsh. We recognize this in the draft CCP/EIS, writing "This could include changes in the abundance, distribution, or composition of local terrestrial wildlife populations." We also recognize the following in the draft CCP/EIS that "Allowing passive conversion to salt marsh and open water in refuge coastal wetland habitats as proposed in alternative A or proactive salt marsh restoration as proposed in alternative B will both result in drastic changes in emergent wetland vegetation communities as freshwater plants are replaced by halophytic marsh plants. As relatively few plant species are halophytes (less than 2 percent of all plant species) the transition from freshwater to brackish and salt water salinity regimes across the refuge's wetlands will also result in a decrease of wetland plant diversity." However, although insect and plant diversity may decrease in the refuge's coastal wetland habitats, under alternative B the conversion of hundreds of acres of row-cropped agricultural fields to native plant communities will increase the overall invertebrate community diversity refuge-wide.

In response to specific species concerns, southern bayberry will withstand a certain degree of intermittent tidal flooding. A properly designed marsh restoration should have limited impact especially if the bayberry component of the marsh/upland habitat is allowed to migrate landward with rising sea levels. However, the current use of adulticides under Alternative C within and adjacent to the Delaware Bay communities may account for the limited records of the little wife underwing moth in these areas.

Also, in terms of pollinators, we feel several of our proposals under alternative B will positively impact pollinators, including reducing adulticide use for mosquito control and restoring native plant communities in hundreds of acres of row-cropped agricultural fields.

In response to the comment on snow geese, there appears to be limited correlation between the extent of open water and snow goose feeding habits. Snow geese on Prime Hook NWR, as well as Bombay Hook and Forsythe NWRS, have created large open water areas through overgrazing. In most cases, these open water areas were associated with a sanctuary affect (i.e. lack of hunting pressure that permitted excessive grazing in relatively confined areas of habitat).

In response to concerns about impacts on amphibians and reptiles, we weighed the benefits to reptiles and amphibians against adverse impacts on the refuge landscape as a whole. We weighed the restoration of row-cropped farmland, increased connectivity between once isolated habitats, and improving surface water quality against habitat losses due higher salinities in Unit II and the lower reaches of Unit III. Overall, we consider the impacts to reptiles and amphibians minor to moderate.

In response to concerns about BIDEH, the Service's BIDEH does not strive for maximum species diversity, but rather a sustainable native ecosystem. BIDEH policy states, "The highest measure of biological integrity, diversity, and environmental health is viewed as those intact and self-sustaining habitats and wildlife populations that existed during historic conditions." Historic conditions are generally considered to be pre-European settlement. As recently as the 1950s, much of Units 2 and 3 were dominated by brackish marsh and salt marsh, as indicated by vegetation surveys conducted by DNREC. The freshwater marshes located in Unit 2 and the eastern portions of Unit 3 have been artificially maintained since the 1980s. Prime Hook Creek historically flowed to the bay, allowing for tidal exchange in its lower reaches. We have no reason to believe the populations of several species mentioned by the commenter (e.g., little wife underwing moth, southern bayberry, beach heather, carpenter frog, and great purple hairstreak) did not exist prior to impoundment construction in the 1980s so they may persist if capable of shifting upstream with the salinity gradient.

We feel that the refuge's overall BIDEH will be enhanced under alternative B because the salt marsh and natural hydrological restoration actions proposed in alternative B will repair hydrological and coastal geomorphological functioning to Units II and III by restoring severely degraded wetland integrity and health within impounded areas, consistent with our BIDEH policy. We feel that this restore these areas to close to their historical conditions and support a wide range of native species. Under alternative B, we also propose to improve BIDEH by restoring hundreds of acres formerly farmed areas from nonnative croplands to native plant communities.

Comment: One individual asks, "Has the service studied any alternative methods to return area III to a freshwater impoundment other than perpetual repair of the dunes?"

Response: During our wetland restoration workshop, we consulted a wide array of wetland restoration and management experts. We were openly seeking alternate ideas for management of Unit III and the consensus was generally that it is going to be very difficult to maintain Unit III as a freshwater impoundment given the presence of Prime Hook Road and limited options for modifying that road. We are still evaluating the most effective means to manage Unit III sustainably, and have not ruled out any specific strategies yet. These discussions are ongoing. However, we feel that we need to make changes to our current management of the marsh because salt marsh areas subjected to long-term fresh water inundation and then returned to saline conditions are vulnerable to marsh collapse and degradation due to the loss of the peat layer. Please also see the comment and response below regarding Unit III.

Comment: Several individuals point out that beach nourishment, dune rebuilding, and other engineered shoreline protection projects are used throughout the world and appear to be successful elsewhere. They suggest the refuge should include these types of projects in its preferred alternative.

Response: We still propose shoreline work only in conjunction with stabilizing conditions for the purposes of marsh restoration, not as a temporary or permanent measure on its own. Without restoration of the marsh behind the dunes, any dune work would remain vulnerable to future overwash due to the elevation deficit, and routine supplementation would continue to be necessary. There are no quick, inexpensive, short-term solutions to deal with the magnitude of wave dissipation needed along the shoreline itself. The use of off-site dredged sediment was already included as a potential strategy for short-term shoreline stabilization in conjunction with marsh restoration. In response to these comments, several options that could be considered are described in the final CCP/EIS. For example, we have further evaluated other engineered wave attenuation solutions designed specifically for such applications (rather than the use of jersey barriers, which are not designed for the purposes of wave attenuation). This discussion has been added to alternative B Objective 3-1 and in appropriate portions of Chapter 5 on Impacts.

As the commenters noted themselves, the determination of which specific strategies may work best under the conditions present in the wetland complex require additional expert analysis. Both engineering firms we have discussed the refuge's situation with agree that hydrodynamic modeling is the first step before making substantial restoration recommendations or shoreline alterations. This analysis has already begun so that we may be poised to move forward on appropriate actions pending finalization of the CCP, but this would have taken too long to complete without a delay to the CCP release. Additional research and discussions with restoration experts about the likely sufficiency and success of the strategies suggested above have been incorporated into the final CCP under alternative B Objective 3-1.

Comment: One individual commented on the following statement on page B-101 of the draft CCP/EIS: "Evaluate the option of deepening and widening the existing inlets in Unit II." He writes, "Unless some hard engineering work, such as electrically controlled gates, is done to control what tidal surges are allowed to enter the new salt marsh, the further expansion of this salt marsh would seem to be practically guaranteed. The COE is needed not only to provide dredging material to support areas adjacent to the breaches, but also to install gates that could control water flow in and out of the marsh."

Response: Hardening of refuge shorelines does not support the objectives and goals under alternative B or the draft Habitat Management Plan because periodic tidal surges are necessary to sustain healthy salt marsh habitat. Coastal zone management and restoration experts have proposed deepening or widening the inlets to help facilitate marsh drainage at low tides and/or transport sediment into the marsh. Regardless of what plan we adopt, assuming that the substrate is at the appropriate elevation, salt marsh will ultimately expand on the refuge due to sea level rise, as well as elsewhere along the Atlantic Coast. As sea levels rise, inland salt marsh migration and saltwater intrusion will continue. If the substrate is not at the necessary elevation, then the former marshes will convert to open water conditions.

Comment: One individual writes, "With the dune breaches being plugged, the Fowler Beach Road and the Prime Hook Beach Road flooding events will be reduced. Because Unit I will remain a salt marsh, open to storm intrusion, constructing a robust levy or berm on the north side of the road will stop flood waters from running into Unit II. Appropriate adjustments to the water control structure at Fowler Beach will prevent back flow into Unit II."

Response: Barrier beach islands and coastal salt marsh habitats are priority conservation habitat types within the Delaware Bay and the mid-Atlantic coastal region. Unit I represents one of the remaining undeveloped coastal saltwater wetlands in Delaware and supports the greatest diversity of species of conservation concern, while beach overwash and dunes provide habitats for some of the State's and region's most critically rare and threatened species. Saltwater marsh and sandy overwash beach habitats also support a shorebird migration that has worldwide ecological significance. Installing a berm on the north side of Fowler Beach Road would disrupt natural hydrologic function within the unit, potentially jeopardizing the function and value of the wetland.

The water control system as originally conceived in the 1980s included a one-way flap gate system which closed to prevent incoming water from Unit I. It still functions to drain Unit II when water levels are high enough that waters flow into Unit II over Fowler Beach Road, via Slaughter Canal, or through the breaches. It is unclear at this time whether or not the State or landowners north of the refuge will install flap gates or take other measures to reduce the flow and salt water intrusion via Slaughter Canal, but, as explained elsewhere, the most sustainable approach to reducing flood impacts on surrounding uplands is to have a robust salt marsh in Unit II.

Comment: A number of commenters recommended that the refuge use materials and structures such as geotubes, biologs, cocoa mats, and jersey barriers to temporarily fill the breaches or otherwise assist with marsh restoration. One letter specifically recommends a modified Service-preferred alternative that incorporates "living shorelines" on the bay coast at the breaches as well as along the interior marsh borders and roads and other accepted approaches.

Response: We identified some of these living shoreline strategies under objective 3.1 of the alternative B in the draft CCP/EIS and evaluated their potential impacts. We added some further evaluate these strategies in the final CCP/EIS, as well as describing our discussions with the Partnership for the Delaware Estuary (PDE) regarding potential implementation of living shoreline projects.

However, we only proposed these types of projects as potential short-term restoration strategies for inland wetlands, such as along the road and along the interior marsh interface. We do not consider these long-term solutions for the shoreline because it is well-established by restoration professionals that living shoreline techniques are not appropriate for the high energy dynamics of the bay shoreline. We still propose shoreline work only in conjunction with stabilizing conditions for the purposes of marsh restoration, not as a temporary or permanent measure on its own. Without restoration of the marsh behind the dunes, any dune work would remain vulnerable to future overwash due to the elevation deficit, and routine supplementation would continue to be necessary. There are no quick, inexpensive, short-term solutions to deal with the magnitude of wave dissipation needed along the shoreline itself. The use of off-site dredged sediment was already included as a potential strategy for short-term shoreline stabilization in conjunction with marsh restoration. In response to these comments, we consider and describe several options in the final CCP/EIS. For example, we have further evaluated other engineered wave attenuation solutions designed specifically for such applications (rather than the use of jersey barriers, which are not designed for the purposes of wave attenuation). This discussion has been added to alternative B, objective 3.1 and in appropriate portions of chapter 5.

As the commenters noted themselves, the determination of which specific strategies may work best under the conditions present in the wetland complex require additional expert analysis. Both engineering firms we have discussed the refuge's situation with agree that hydrodynamic modeling is the first step before making substantial restoration recommendations or shoreline alterations. This analysis has already begun so that we may be poised to move forward on appropriate actions pending finalization of the CCP, but this would have taken too long to complete without a delay to the CCP release. Additional research and discussions with restoration experts about the likely sufficiency and success of the strategies suggested above have been incorporated into the final CCP under alternative B, objective 3.1.

Comment: One individual suggests the following: "For Unit II, construct and maintain a robust dune of sufficient height and depth to withstand most of the Nor'easter type storms. This includes adding a levy or similar structure on the north side of Fowler Beach Road and elevating, hardening Fowler Beach Road and protecting adjacent farming interests. Convert this unit back to a freshwater marsh. Provide a levy or similar structure on the north side of Prime Hook Beach Road, with water control capabilities as required." He continues, "For Unit III, convert this unit back to freshwater marsh. Repair/modify and or replace water control structures as required...[to fulfill refuge mission because] waterfowl counts indicate that a freshwater marsh is much more productive than a saltwater marsh...[and] assuming an increase in sea level rise, they will provide critical habitat for wading birds, dipping ducks, geese and shorebirds. They will be [a] buffer for storms and help hold storm runoff water, filter pollutants and are a highly productive nursery."

Response: We have always stated that dune work/breach closure was a possible, and indeed likely, first step toward restoration of the salt marsh. However, repairing the dunes alone will not eliminate future flooding of roads and agricultural lands during extreme high tide and storm events, since floodwaters can enter these areas through locations other than the existing breaches. Rather, restoring the natural hydrological function of historic refuge salt marshes would provide valuable ecosystem services such as storm surge protection and flood protection, which minimize the impacts of floods. In addition, the flooding of roads and agricultural lands is not a unique situation in that several other areas in coastal Delaware routinely flood during high tide and storm events. It was our intent to maintain short-term stability for Unit II by reestablishing the dunes as was explained in the November 2010 Dune EA and FONSI. However, the site conditions have changed dramatically and there is no longer enough sand to reestablish the dunes. Filling of breaches is not specifically excluded from Alternative B. Rather, any work along the shoreline would be conducted in the context of comprehensive marsh restoration, as the

means to an end, not as the end goal itself. The Service believes restoration of the marshes provides the best solution for long-term sustainability. We have always stated that dune work/breach closure was a possible, and indeed likely, first step toward restoration of the salt marsh and have reworded a strategy to specifically acknowledge the potential and likely first step of closing the breaches to complete marsh restoration. Installing a berm on the north side of Fowler Beach Road would disrupt natural hydrologic function within the unit, potentially jeopardizing the function and value of the wetland. In addition, if a “berm of sufficient height and depth to withstand most of the Nor’easter type storms” were constructed, this would need to be a very large engineered dune, likely far higher and wider than the elevation and width of the Prime Hook community or other portions of the current barrier system. To the extent that such a dune system might deflect flood and tide waters, it could focus storm activity to other land. Many artificial shore protection measures cause other adverse impacts to adjacent or downdrift areas.

The refuge acknowledges that the best management for Unit III is not yet clear. The overarching objective is for it to be more sustainable for the long-term. Clearly, it cannot continue to be managed in exactly the current manner, which has left it vulnerable to subsidence and wetland collapse in large portions. Without the results of hydrodynamic modeling currently in development, and other further analysis, it is difficult to know yet if salt marsh restoration would succeed, or if a return to impoundment management is even feasible given the many factors involved.

Comment: The State of Delaware stated that the continued breach in the dunes is contrary to the letter of February 20, 1963 by then Department of Interior Secretary.

Response: We respectfully disagree. The letter states that the goal of the refuge is to conserve refuge resources for present and future generations. However, in 1963, the Service did not understand the mechanics and impacts of climate change and sea level rise. In particular, they did not know that it would be unsustainable to maintain coastal freshwater wetlands in the face of decades of coastal erosion and changing conditions due to climate change. The Service also did not fully understand the ecology of coastal habitats, including that salt marshes provide storm attenuation functions that protect mainland areas and are maintained by barrier island rollover and migration. Although, the letter was well-intentioned, at the time the Service had incomplete knowledge and was unable to foresee the future. Management decisions made in the 1960’s were based on the science and knowledge of the times, which did not account for the increasing rate of erosion, rising of water levels in the Delaware Bay, or increases in coastal storms that have created the current management challenge. Also, the refuge’s management is now guided by more up-to-date Service policies and new laws, such as the policy on biological integrity, diversity, and environmental health and the Refuge Improvement Act. These require the refuge to make science-based management decisions that adapt to changing conditions and thus preserve natural processes. Because of these changes—changes in the refuge environment, better science, and these new policies—we feel it would be neither sustainable or responsible to attempt to maintain a static condition along this dynamic shoreline.

Comment: The State of Delaware suggest isolating Unit III to maintain it as a freshwater complex as they believe it has sufficient base flow to maintain it as a freshwater/slightly brackish wetland, its management infrastructure has not been as compromised, and the management capabilities are still somewhat intact unlike the other units within the refuge.

Response: Our overarching objective for Unit III is for it to be more sustainable for the long-term. Clearly, we cannot continue to manage it exactly as we have, which has left it vulnerable to subsidence and wetland collapse in large portions. Without the results of hydrodynamic modeling (currently in development) and other further analysis, it is difficult to know yet if salt marsh restoration would succeed, or if a return to impoundment management is feasible given the many factors involved. We respectfully disagree with the assertion that the management infrastructure is not very compromised, because Prime Hook Road is at such a low elevation and has free-flowing culverts that connect it with Unit II, and because we have found the elevation of water control structures along Broadkill Beach Road to be well below their designed elevations.

Comment: The authors of one letter request that the refuge close the breach in that area north of Fowler Beach Road because it is threatening Unit I and Unit II and could negatively impact horseshoe crabs and nesting birds. They suggest, “There are many engineering options to do this that the CCP should consider, such as an interior dike or berm.”

Response: The opening and closing of overwashes in a healthy salt marsh is a natural part of the system. The shoreline along Unit I has breached and closed repeatedly over past decades (see figure 1-1 in the draft and final CCP/EIS). This process likely accounts for the adequate vertical accretion that Unit I has experienced, keeping pace with sea level rise. As such, permitting overwashes is the best way to ensure the salt marsh remains able to provide a buffer for storms and flooding. In the time immediately after the 2006 Unit I breach formed, but before the Unit II breaches formed, the salt marsh in Unit I was thriving. Closing this breach may be considered, if needed for marsh restoration in Unit II. Breaches, in time generally close, as it is a natural function if there is sufficient sediment in the system. Any additional stress experienced by Unit I is related to the fact that the wetlands in Unit II are degraded and unable to absorb the quantity of water from the Unit II breaches. The best solution for Unit I is ultimately the restoration of a healthy marsh within Unit II. The flow of water in this part of the wetland complex has been well documented, and is from Unit II into Unit I, not the other way around. . Installing a berm may disrupt natural hydrologic function within the units, potentially jeopardizing the function and value of the wetland.

Comment: Several individuals suggest the following:

- Removing the dike parallel to Route 16 if the breaches at Fowler’s Beach are not closed and/or the impoundment in Unit III remains as salt marsh. They suggest using the materials from this dike to help restore the marsh stating that “The material for this dike was trucked in [and therefore] must be eco-friendly.”
- Removing water control structures from Unit III if the breaches at Fowler’s Beach are not closed and/or the impoundment [in Area III] remains as salt marsh, because they were installed “only to capture and hold freshwater. If there is no freshwater marsh...then there is no reason to hold any water in that section.”
- Re-examining groundwater levels, which are much higher than they were prior to installing the dike and water control structures, and how they impact refuge neighbors. They write, “This has had an impact [on] sewage systems and building lots on Broadkill.”
- Regardless of the decision about closing the breaches, opening or expanding culverts along Route 16 to allow incoming water from the north to drain more readily. They write, “The refuge has demonstrated a great capacity to capture and retain water; [but] almost no capacity to remove or drain it [causing flooding].”

Response: As stated in the strategies associated with alternative B, Objective 3-1, we will continue to work with DelDOT to explore options, which address road flooding concerns in a manner consistent with refuge management objectives. The impact of road changes on local hydrology will be evaluated in ongoing hydrodynamic modeling. Alternative B includes active restoration (e.g., improving wetland elevation and increasing historic flow and hydrology within refuge impounded wetlands) to ameliorate damage and facilitate the healthy succession to a brackish/salt marsh. A functioning salt marsh results from the interactions of salt marsh plants species diversity that flourish in response to specific patterns of tidal flooding. The ability of these systems to thrive is dependent upon the salt marsh’s link to the bay. Many factors influence groundwater levels, seas level rise, precipitation, irrigation, etc. Currently, the Service is not proposing to remove the water control structures.

Comment: One individual writes, “If you close the breaches, where will the water come from to support a salt marsh? If the water will come from removing the water control structure and removing the [Fowler Beach Road] roadbed, why not just leave the breaches alone and build up [Fowler Beach Road] as a dike? Have you thought about the impact that removing the roadbed will have on public use? Impacts on new surf fishing? Impacts on wildlife observation?”

Response: Unit I and Unit IV have received water from the Mispillion and Broadkill Rivers during lunar tides and storm surges. The Service is not currently proposing to remove the water control structures. Installing a berm on the north side of Fowler Beach Road would disrupt natural hydrologic function within the unit, potentially jeopardizing the function and value of the wetland. Adaptive management is necessary if Fowler Beach Road, from Slaughter Canal to its terminus at the Delaware Bay, is abandoned by DELDOT and donated to the Service. If, upon DelDOT's removal of the existing layer of asphalt overlying unconsolidated fill, the walking trail will serve its purpose of public use until marsh vegetation and hydrologic function reclaim the trail and the formally bisected habitat (Units I & II) function as one unit. When conditions are deemed unsafe, access will not be permitted to Fowler Beach for public use opportunities such as wildlife observation, wildlife photography, and fishing.

Comment: One individual writes, "Regarding the breaches in the dunes and the impoundments, I support an approach that recognizes the dynamic nature of the beach/dune interface, and recognizes that sea level rise is occurring. It would be pointless to attempt to close the breaches and attempt to restore the impoundments to a non-tidal condition. The impoundments should be restored to tidal marsh habitat, subjected to regular tidal exchange. I realize this is a difficult thing to achieve, given the low elevations of the former impoundments, the erosive energy caused by the dune breaches, and the limited sediment supply. I would recommend that the Service work with the State of Delaware to explore the possible installation of artificial reef/wave attenuation structures that will reduce wave energy and promote accretion of sand, which will help to buy time and be complementary to efforts to build a tidal marsh."

Response: Thank you for your support. The Service continues to work with all our partners to achieve the desired outcome.

Comment: A number of commenters expressed concern that the CCP/EIS did not contain sufficient detail regarding the marsh restoration strategies, or a specific restoration plan, and that the lack of detail prevents fair or complete evaluation of the alternatives. For example, one letter states, "The strategies to be undertaken within impoundment II for the preferred alternative B are too incompletely developed to justify the recommendation that this alternative be chosen—in fact they are not developed at all. The overarching strategy is to restore impoundment II to tidal brackish/salt marsh, through improving wetland elevation by the addition of dredged sediment, and increasing historical flow and hydrology (among other strategies, see table 4.5 and discussion objective 3-1). Yet there is no plan put forward as to how to achieve the three components of this strategy. [1.] There is no discussion of how much sediment is needed for sufficient elevation, and extent to which the "dredged" sediment (a reference to sediment potentially obtained from ACE dredging of the Delaware River channel) will suffice, or the source of additional sediment, if needed. [2.] There is no discussion of how to achieve the drainage, which would lead to stability necessary to realize the flood protection benefits claimed on page 4-97. [3.] Further, mention is made of the fact that flood protection benefits may be needed to assist in restoration, yet without discussion of types and costs. Indeed, the identified strategies (beginning page 4-99) cite "working with an advisory team" to develop restoration plans and further studies. It is wholly inappropriate to propose expending taxpayer dollars on vague overarching strategies without known plans."

Response: The CCP provides the "big-picture" of refuge management, and the details of a restoration plan were outside the scope of the CCP process. Similar marsh restoration plans of comparable scope and detail elsewhere in the country have routinely taken years to develop; accounting for the time needed to collect data, model habitat conditions, evaluate restoration options, and prepare the plan. Admittedly, most restoration plans are prepared with the benefit of a stable situation, rather than in a reactionary context. We did not want to delay the release of the entire CCP until we could develop a detailed restoration plan. As the commenters noted, many restoration concepts would need to be developed further by engineers for more detailed analysis, a process that is time-consuming and requires rigorous data. The partnership to move such plans forward and the necessary analysis to further develop options have already started. Furthermore, the final CCP/EIS does incorporate additional details about strategies that we will be poised to act upon once the CCP is completed.

Additionally, the Service has recently begun to collect data to understand current marsh transitions in order to make science-based management decisions. Results indicate the need for a detailed marsh restoration planning effort, which will outline strategies to rebuild a resilient mix of salt (dominated by *Spartina alterniflora* with significant areas of *Spartina patens*), brackish, and freshwater marsh.

In order to return the Unit II wetlands to a diverse, resilient, and dynamic ecosystem, the proposed wetland restoration project within Unit II being studied by the refuge and a private consulting firm stressed in the CCP the importance of restoring inherent ecological processes, improving sustainability and resiliency to adapt to climate change and other environmental changes. A better understanding of the potential impacts of climate change (e.g., sea level rise and possible changes to extreme precipitation events) on the Unit's wetlands will help accomplish this objective. The study's models will simulate the hydrologic conditions in a watershed model including the hydraulic conditions of the wetlands. These models are applied under various climate change scenarios to existing wetland conditions and proposed wetland restoration alternatives. The results of the models, along with supporting references, are used to improve understanding of the potential climate change impacts to habitats under different restoration scenarios and aid in helping the refuge select the optimal restoration design. Once all the data is collected, the refuge will prepare additional Environmental Assessments for the proposed work that includes a detailed discussion of how much sediment is needed for sufficient elevation, flood protection benefits, shoreline protection and cost.

Comment: Several individuals were concerned that the draft CCP/EIS did not address what would occur if the strategies under alternative B failed. One writes, "The uncertainty of the outcomes of B should be evaluated, along with the benefits and costs, for comparison with C. For example, if, for any reason, [Service] is not able to obtain dredge materials from the channel-dredging project, there is no discussion of an alternative source for these critical materials."

Response: We agree that there is a level of uncertainty with any management decision. Because of this, we try to use an adaptive management framework. Adaptive management is a proactive process of learning what works on the ground by constantly adjusting strategies to respond to new information, spatial and temporal changes, and environmental and climatic events, whether foreseen or unforeseen, measured against a clearly defined goal or set of conditions. In addition, to minimize the potential for uncertainty, we developed CCP goals, objectives, and strategies for all the alternatives using a thorough assessment of available science derived from scientific literature, on-site refuge data, expert opinion within and outside the Service, and sound professional judgment. Please refer to the section on "Adaptive Resource Management" in chapter 4 of the CCP/EIS for more information.

Comment: PEER asks, "Does the Service intend to fill in breaches before or after the finalization of the CCP?"

Response: We identify filling the breaches along Unit II as a possible strategy under objective 3.1 of alternative B. We do not intend filling the breaches unless, and until, we determine that such a step would support either salt marsh restoration or comprehensive marsh restoration. We will base our decision on hydrodynamic modeling that is underway and by further consultation with the State and wetland experts.

Comment: Several commenters pointed out that Chapter 1 of the draft CCP/EIS states that "for the immediate future, the refuge has proposed to fill inlets and re-establish dunes along Unit II to maintain short-term stability," and noted that this immediately required action is specifically excluded from the preferred alternative.

Response: It was previously our intent to maintain short-term stability for Unit II by reestablishing the dunes, as explained in the November 2010 Dune EA and FONSI (USFWS 2010). However, site conditions have changed dramatically since then and there is no longer enough sand onsite to reestablish the dunes. This was included in an earlier draft of chapter 1 of the CCP, which predated the implementation and ultimate failure of the dune repair work, and was left in the chapter inadvertently. We apologize for any confusion and clarified this in the final CCP/EIS. We do not specifically exclude filling the breaches under alternative B. Rather, we would only conduct such work along the shoreline in the context of comprehensive marsh restoration, as the means to an end, not as the end goal itself.

Comment: One letter pointed out that a statement on page 4-97 of the draft CCP/EIS is misleading because “greater stability” is claimed, and that open access to the bay is envisioned by the Alternative, which will leave the area unstable.

Response: The statement was referring to “greater stability” associated with salt marsh restoration, and we stand by our assertion that a restored salt marsh will provide greater stability to adjacent lands than the current condition— a heavily managed impoundment that has already experienced degradation from decades of hydrological alteration and would require frequent shoreline maintenance. We also establish, in the referenced paragraph, that the presence of a salt marsh will dissipate water energy from the bay. Under alternative B, we do not envision “open access” to the bay, but rather plan to restore healthy shoreline dynamics that would naturally include overwashes and inlets that form and which are likely to close on their own over time, as they have along the refuge shoreline many times over past decades (See figure 1-1). Such dynamics enable the salt marsh to build elevation vertically and keep pace with sea level, in order to reduce the odds that exactly the kind of marsh collapse that has occurred in Unit II could occur again in the future.

Comment: Several commenters, including the Prime Hook Beach Organization and the town of Slaughter Beach, pointed out that the CCP does not address the risk associated with leaving the breaches open if there is an oil spill in the Bay and are concerned that oil could then enter the impoundments.

Response: We agree that the draft CCP/EIS was lacking in this regard, and have corrected this omission in the final CCP/EIS. The Delaware Bay has been, and will continue to be, vulnerable to oil spills and other pollutants. It is nearly impossible to provide a thorough evaluate of impacts of a potential spill because our analysis would greatly depend on what was spilled, how much was spilled, and the weather and tidal conditions at the time of the spill. We have added a discussion regarding impacts from potential oil spills near the refuge under each alternative to the “Impacts on Water Quality and Hydrology” section of chapter 5. We also added strategies to chapter 4 address the refuge’s oil spill preparedness.

Comment: One commenter pointed out that the freshwater pond Silver Lake in Rehoboth and the town of New Orleans are evidence that freshwater ponds are sustainable along the coast.

Response: We respectfully disagree that these examples are relevant for comparison to the highly managed impoundments on the refuge. Silver Lake is currently surrounded by an intact nourished and developed beach on its east side, a road on its west side and several housing developments. There are no sources of saltwater intrusion into the pond at this time. DNREC responds to occasional fish kills when dissolved oxygen concentrations become low during periods of summer heat. Otherwise, no active management is used to maintain its freshwater integrity other than rainfall that naturally is collected and retained. The same holds true for New Orleans. The freshwater integrity of areas in New Orleans are maintained if no physical changes occur that result in saltwater intrusion. However more often than not there are several areas in New Orleans where freshwater integrity of many natural and diked marshes are being compromised because of salt water incursions either from dike breaches, ground water depletion, salt water plumes migrating further landward and other causes. New Orleans remains constantly vulnerable to damage by storms and hurricanes.

Comment: One commenter noted that, while the CCP mentions a current easement restriction, it does not consider the impact of this easement, nor discusses the pros and cons of altering this restriction. The individual suggests that the Service evaluate the current easement restriction to a height of 2.8 feet (MSL) and likely change the easement.

Response: We agree. Our water management will likely change as we develop a marsh restoration plan based on data collection and modeling. Based on this, we may need to remove or renegotiate the easement restriction. We added a strategy to revisit the easement restriction, once the marsh restoration plan becomes available.

Comment: One individual writes that on page 100 of the draft CCP/EIS, states-”use Christmas tree fences to reduce beach erosion.” This contradicts the recommended practices of DNREC, which indicates that tannins leaching from dead Christmas trees are detrimental to beach grasses that are the primary plants of value for protecting the dunes from storms and erosion.”

Response: The statement in the draft CCP/EIS actually refers to fostering sediment deposition in the marsh. It says, “Use coconut logs, Christmas tree fences, other living shoreline techniques within Unit II to slow wave fetch across large expanses of open water, which may reduce marsh erosion and facilitate the deposition of sediment and establishment of salt marsh vegetation.” The Christmas trees would be placed in the water, not on the beach, so they would not affect beach grasses. The effectiveness of this approach will need to be further examined based on the hydrological and other planning efforts underway.

Comment: One individual writes, “I also question what we know about the currents or hydrology of the Delaware River and Bay, under both normal tide cycles and storm cycles. Observational studies have been devoted pretty much to anecdotal information and very little is seems to be based on hard data. For example, we have observed a slow erosion of Fowler Beach over the past 50 years. About 2000, the erosion rate increased dramatically. It has been mentioned that the repair and rebuilding of the jetty at Mispillion River was completed about the time the Fowler Beach erosion rate increased. Is this coincidental? Or have currents changed? Is Fowler Beach the focal point of where ocean storm tides and flow from up the river meet, causing beach scouring? Do we have sufficient data to produce a computer modeling program?”

Response: We are currently working closely with a contractor to gather all the data necessary for hydrological modeling, including data from the refuge and elsewhere in the region. The contractor has done similar modeling work along the Delaware Bayshore and has helped with the development of the 10-year management plan.

Comment: One individual writes, “Should Alternative B be chosen (converting Units II and III to salt water marsh), these Units will need access to Delaware Bay tides. I have not found any descriptions of how this will be accomplished. What flow is necessary to ensure the marsh levels will be maintained? Will additional Bay inlets be manmade? What about outlets? Will these inlets/outlets have some sort of water control? Will Prime Hook Creek be adapted to carry this flow? If so, what issues will this cause with the homes on Broadkill Beach that about the creek and at the outlet at Roosevelt Inlet?”

Response: We agree that these types of information are important in helping making management decisions. These are exactly the details that hydrological modeling currently underway will help us evaluate. In the draft and final CCP/EIS, we propose restoration, in the big picture, and acknowledge that the details of the restoration will not be possible until we have the modeling work completed.

Comment: The Sierra Club, Ducks Unlimited, and Defenders of Wildlife support the proposal to restore four impoundments to salt marsh to allow natural process to occur, such as sediment accretion, and to compensate for historic salt marsh losses in the Mid-Atlantic region. Defenders of Wildlife also feels that “maintain[ing] the altered hydrology of the refuge’s impoundments goes against the Refuge Improvement Act [and is] a temporary and expensive management approach [particularly in light of climate change and sea level rise].” Ducks Unlimited stresses that converting the freshwater impoundments to salt marsh will “require the Service to place higher emphasis on the management of the remaining freshwater areas on and adjacent to the Refuge. The reversion will make these adjacent areas inherently more important for migrating waterfowl.” The Delmarva Ornithological Society also supports the Service’s plans to restore salt marsh habitat in Units I and II and “support the use of off-site sediments, if necessary, to aid in salt marsh restoration.”

Response: We appreciate the support for our proposed action.

Comment: The form letter makes the following recommendations about water level management in the impoundments: “Open the water control structures to drain to their lowest point from March 1st to September 30th. The control gates could close anytime if saltwater was entering the system. Then closing the water controls allowing the area to fill every fall and winter with freshwater from Prime Hook Creek and Slaughter Creek. This would encompass all of Unit II and Unit III. The freshwater impounded during the fall and winter should dilute the salt content in the marsh soil. Then repeat the following year. In Unit III, the cookie cutter should be used once a year to help maintain the shallow ditches. Salinity tests would tell how well it is working. This will not happen overnight, but then it was not destroyed overnight.”

Response: We are working to identify ways to manage the wetland in the short term to minimize damage as we await restoration opportunities. Our preferred alternative proposes to restore Unit II to salt marsh. The refuge acknowledges that the best management for Unit III is not yet clear. The overarching objective is for it to be more sustainable for the long-term. Clearly, it cannot continue to be managed in exactly the current manner, which has left it vulnerable to subsidence and wetland collapse in large portions. Without the results of hydrodynamic modeling currently in development, and other further analysis, it is difficult to know yet if salt marsh restoration would succeed, or if a return to impoundment management is even feasible given the many factors involved.

Comment: One individual writes, “Was the intent of [the failed attempt to fill in breaches] to protect the impoundments or to quiet the beach folks (as written your draft EA for the dune repairs?) Since then, water control structures have been left open and salt water continues to flush both Units II and III, destroying wetland plants that were valuable waterfowl habitat and food resources, and killing trees, shrubs and other vegetation. Simply put, destroying and degrading significant numbers of acres of wetland habitats and adjacent upland areas.”

Response: We described the purpose of the dune repairs in the final EA and FONSI. The Units are subject to daily tidal flow from the breaches. Refuge staff open or close the structures based on water levels within the impoundments. We feel that closing the water control structures may result in further flooding (e.g., additional areas flooded, flooded roads, and possibly flooded homes).

Comment: One individual writes, “What are your plans for the Unit IV impoundment? Never really talked about this in [alternative B] and HMP”

Response: Under the preferred alternative the Unit IV impoundment will be managed as an impoundment as outlined under objective 3.2.

Comment: One individual writes, “In the past refuge management of wetland management of Unit III most importantly sediment conservation was a very significant consideration used to maintain the health of Unit III. It was the reason we always conducted very slow drawdown and reflow schedules as recommended by non-FWS wetland management experts in all the impoundments.”

Response: We are not aware of any refuge management plans that discuss sediment conservation. Sediment management is generally reserved for salt marsh management not freshwater impoundment management. We agree that slow drawdown and reflow schedules are beneficial for moist soil management. The refuge’s annual water management plans cited the primary goal of water level management is to increase the foraging carrying capacity of the refuge’s marshes. The refuge’s water management was based on the idea that dynamic water depths and fluctuations will enhance moist soil productions. This adaptive management strategy included not only slow drawdowns, but also rapid drawdowns. Although rapid drawdowns are occurring more frequently, they have occurred in the past. We added a strategy to objective 3.1 under alternative A to clarify that such “storm water management” actions currently taking place now would continue.

Comment: One individual writes, “When the CCP process began, Prime Hook had 3 impoundments totaling 4,200 acres of high quality freshwater habitat and hosted tens of thousands of ducks each fall/ winter. Today, the numbers are well short of earlier numbers. This habitat has been completely degraded in the last 4 years.”

Response: We acknowledge the loss and degradation of habitat in Chapter 3 and the impacts associated with alternative A.

Croplands and Cooperative Farming

(Letter ID#: 4, 28, 43, 51, 54, 55, 64, 67, 71, 80–Petition, 81, 95, 98, 104, 107, S11, 108–Form Letter)

Comment: We received many letters, including from the State of Delaware and Ducks Unlimited, requesting that the refuge reinstate cooperative farming on the refuge to provide food and resting areas for wildlife, particularly waterfowl and white-tailed deer. Several individuals were concerned that the habitat that was replacing these cropfields was inadequate for wildlife. For example, one individual writes, “This area has been replaced by dead trees...and dense areas of *Phragmites*, cat claw briars, and swamp gum trees.” Another writes, “Returning the fields to native forest will take years. Meanwhile waterfowl and wildlife will be left with little or no food.” Another suggests that the refuge could continue to farm but not use genetically modified crops. Another suggests that the refuge compromise and continue to allow cooperative farming for waterfowl in some areas, but allow other areas to transition to forest for other wildlife species. The State of Delaware feels that the Service’s decision to not reinstate farming could “cause damage to private farmland [from] shading, noxious weeds, and wildlife damage” and they believe “forest land does not provide habitat for migratory waterfowl and other birds; and is in direct opposition to the original purpose of the refuge, which was to provide such habitat to waterfowl.” Additionally, the State writes, “The Service should establish a balance between cooperative farming opportunities and upland forest restoration that considers the mutual benefits of agricultural production and habitat diversification.”

Response: Farming was once a management tool on Prime Hook NWR to provide supplemental food for declining waterfowl species and was once believed to provide habitat for other animals. At its peak crop acreage in the 1970s, farming at Prime Hook maintained a modest amount of crops compared to the total cropland available to wildlife at the time on the Delmarva Peninsula. Currently, waste corn and soybeans resprout long before wildlife have a chance to feed on the seeds during the winter. Non-native cover crops that were planted in the past as part of the cooperative farming program on Prime Hook contributed a small amount of food to geese compared to the amount of food available from crops planted throughout Delaware and the Delmarva Peninsula. While the refuge provides vital wetland habitat to many species, the Delaware Wildlife Action Plan show that agricultural land is not critical habitat for birds, and habitat that has been altered for farming has actually led to a decline in some species.

Service policy (601 FW 3 Biological Integrity, Diversity and Environmental Health) states that “We do not allow refuge uses or management practices that result in the maintenance of non-native plant communities unless we determine that there is no feasible alternative for accomplishing refuge purpose(s). For example, where we do not require farming to accomplish refuge purpose(s), we cease farming and strive to restore natural habitats.

The refuge does not plant crops as a means of attracting wildlife away from private property. As an example, white-tailed deer are highly mobile, range over wide areas, and are abundant in Delmarva region. Although deer do feed within the refuge, food plots and cropland do little to attract deer away from surrounding property nor to increase local deer populations.

Regarding noxious weeds, Integrated Weed Management (IWM), is defined as the method of managing undesirable species through a combination of techniques that may include: education; prevention; mechanical, biological, and chemical control; and cultural methods, provides the most effective means of combating this problem. The refuge will apply these tools as need along the refuge/farmland interface.

As directed by Congress, the original purpose of refuge is migratory birds whereas this establishing purpose does not specify waterfowl. The primary purpose of the refuge is to provide habitat for migratory birds, which includes waterfowl, as well as many other waterbirds and migrant landbirds. Roughly 80 percent of the refuge is a mix of fresh and saltwater wetlands stretching from Slaughter Beach in the north to the Broadkill River in the south. Forested habitats, not agricultural lands, prove to be vital stopover sites on the refuge for migratory birds. While some habitat alteration can generally benefit some species, the Delaware Wildlife Action Plan encourage Federal and private conservation land managers to limit habitat management for one species unless those animals are considered threatened or endangered.

Agriculture for the purposes of production of a product for sale with the expressed intent of supplementing local farm income has never been the goal of cooperative farming. The intent of cooperative farming in the past was to provide forage for migratory waterfowl especially Canada geese, and to a lesser extent, dabbling ducks. According to the USDA, 1,383,920 acres (2,162 square miles) of corn, wheat, soybeans, barley and hay were planted or maintained on Delmarva in 2007. An additional 135 square miles of vegetables and potatoes were planted, which may also support green browse in winter. At its peak, the cooperative farm program at Prime Hook NWR managed 48 small fields (averaging 22.3 acres each), for a total of 1,070 acres, or 0.073% of the total cropland (2007 acres) on the Delmarva Peninsula. It is reasonable to conclude that the farmed acreage on Prime Hook NWR historically has actually contributed negligible forage to the highly mobile wintering goose population.

Historically, waterfowl were the most closely monitored and managed migratory bird populations. However, the mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.” These species include migratory birds (such as songbirds, colonial waterbirds, shorebirds, and raptors), as well as other wildlife, including mammals, fish, reptiles, amphibians, insects and plants.

In the late 2000s, the states completed plans that identified “Species of Greatest Conservation Need” (SGCN), their habitats; causes for decline; and a list of research, management and restoration needs for maintaining and improving wildlife populations. The Service examined the three State plans covering the Delmarva area, as well as plans put forth by national bird conservation groups: Bird Conservation Region (BCR 30) Implementation Plan, and the Partners in Flight (PIF 44) Plan. None of the plans considered land managed for agricultural grain production to be a critical habitat. In contrast, all plans placed forests and natural wetlands at the top of the list of declining and critical habitats for numerous priority species on Delmarva. The refuge currently manages over 5,000 acres of wetland habitats which are important for waterfowl and a variety of other waterbirds.

These plans list numerous other species of birds, other animals and plants that depend on forested, shrub and wetland habitat. Vast acreages of these habitats have been historically converted to agricultural fields, and more recently, have been converted to developed lands across the Delmarva. Habitat fragmentation, or the reduction of native habitat into smaller, discontinuous blocks, is repeatedly listed as a major factor in the decline or loss of many species of these plans, especially area sensitive species. The BCR 30 Plan states, “Habitat loss and fragmentation is the number one threat to all habitat types. Coastal marsh and mature forested habitats are the highest priority habitats within the BCR due to pressures, rate of loss, or lack of information on rate of loss and present spatial distribution.”

Some individuals feel that increasing “edge habitat,” which is a form of habitat fragmentation, can enhance “wildlife and habitat diversity.” However, increasing habitat edge may increase the gross number of species found in an area, but this is often due to the introduction of generalist (or even invasive) species, those that can tolerate small, irregular patches of habitat, while numbers of wildlife species that have specific habitat requirements decrease. On the Delmarva Peninsula, native forests have been fragmented into small, often linear patches; shrublands and fallow fields are difficult to find; patches of natural habitats are isolated islands in a sea of intensively managed agricultural fields and urban/suburban development. The Delaware Wildlife Action Plan states, “Emphasize the management of ecological structure and function of key habitats over management of individual species. Management of wildlife species in Delaware has traditionally focused on game animals and sport fish, leaving the great majority of Delaware’s wildlife entirely unmanaged...Many SGCN ...are area-sensitive, requiring relatively large areas of mostly unbroken habitat to ensure their viability. State, Federal and [non-governmental organization’s conservation lands... are particularly critical for meeting the needs of area-sensitive species.”

Comment: The Center for Food Safety, Delaware Audubon Society, and a few individuals supported the proposal to not reinstate cooperative farming under alternative B. The Center for Food Safety writes, “Native wetland and aquatic habitats provide sufficient native food resources to satisfy the needs of migratory duck and geese species [and can help reduce overabundant snow geese populations.” They also applauded the Service for its decision to not reinstate cooperative farming because it “would eliminate the cultivation of transgenic, herbicide resistant crops” that can “pose significant environmental and economic risks [such as] increased herbicide use, the development of herbicide resistant weeds, the risk of contamination [to non-transgenic crops], soil and water pollution, and harm to migratory birds and aquatic communities.” One individual also supports this proposal because restoring previously farmed areas to forest “will be beneficial to native woodland bird species” and may help “remove CO₂” from the atmosphere. Another feels that the refuge’s 600 acres of previously farmed land is “insignificant” to the economy, as well as wildlife because “[w]ith modern farming, there is little waste grain.”

Response: We appreciate the support for our preferred alternative.

Comment: Several commenters felt that alternative C disingenuously proposes to conduct cooperative farming and use GMO crops. They felt that this was not a viable alternative management action and strategy because the refuge did not provide a written compatibility determination or NEPA documentation to support the need to use cooperative farming and/or GMO crops to achieve refuge purposes.

Response: The draft CCP/EIS only included the compatibility determinations for those uses proposed under the Alternative B, the Service’s preferred alternative. We did not complete compatibility determinations for uses only proposed under alternative C. We apologize for any confusion and have clarified this in the final CCP/EIS. Under alternative B, we found that cooperative farming was not appropriate at this time.

Under alternative C, we proposed the use of a cooperative farming program to provide non-genetically-modified crops as cover crops for migratory birds. In the final CCP/EIS, we clarified our strategies on cooperative farming to state that should the decision be made to use genetically-modified crops on the refuge, it would require Service approval, a step-down Environmental Assessment, and cropland management plan would need to be completed to evaluate any potential use of genetically-modified crops, should the decision be made to use genetically-modified crops on the refuge.

Comment: Two individuals and the form letter made suggestions on how to manage previously farmed areas. One writes, “Why not consider [converting the] former croplands in Units I, II, and III to moist soils units to restore some freshwater habitat?” The other writes, “You do not need to return to cooperative farming. If you need green browse, use force account farming.” The form letter suggests, “The fields north of Fowlers Beach and the fields adjacent to Prime Hook Beach Road on the south side could all be planted into forest. The remaining fields could be used again for agriculture.”

Response: We did consider converting former croplands to moist soil units. However, with the landward migration of the wetland, many of these fields will become future salt marsh. Managing these lands as moist soil units may result in some of the same problems we are currently having with our existing impoundments (e.g., subsidence and interruption of natural vertical accretion). Should the state and our other partners deem it desirable to increase the amount of freshwater wetland habitats, we recommend looking farther inland to areas which are not likely to convert to salt marsh in the foreseeable future. We might be willing to consider management of such areas, but have no plans to initiate any large-scale expansion of the refuge and such initiatives could be entirely conducted by the state or other partners.

Comment: The Delaware Division of Fish and Wildlife “urges the Service to consider maintaining a small scale farming program to provide habitat diversity and areas attractive to feeding waterfowl. This activity may be even more important given the unstable condition of the impoundments to attract waterfowl. Relative to songbird use, recent radar data analyses suggests that agricultural fields along the Delaware Bayshore are both highly used and persistently used during the fall migration of songbirds.” Another individual similarly suggest that the Service maintain 200 to 300 acres of cropland (with 10 to 15 percent of crop remaining as spillage for wildlife) and “food plot demonstration” areas for foraging wildlife, including deer and turkeys.

Response: As stated in the draft CCP/EIS, in recent years, it has been apparent from anecdotal observations that duck species seldom or never used cropland field habitats on the refuge, likely due to wetland and aquatic habitats being readily available on the refuge. These habitats produce sufficient natural foods are also produced to satisfy the needs of Canada geese, especially if measures are taken to reduce snow goose numbers. In addition, eliminating farming on the refuge is consistent with recommendations in the Service’s final EIS on the light geese management (USFWS 2007a), which encourages refuges to reduce areas planted to agricultural crops that serve as a supplemental food source for overabundant greater snow geese. We respectfully disagree with the State’s interpretation of recent radar data analyses with regard to habitat use by songbirds. The final report submitted to the Service by Dawson and Buler in June 2012 specifically noted that locally important stopover sites were deciduous forests embedded within landscapes dominated by developed or agricultural lands, or near the shores of major waterbodies. Agricultural fields themselves were not highlighted as a habitat receiving high and persistent use during fall migration. On the contrary, the report identified preservation of natural habitat, particularly forests, in agricultural landscapes as a conservation priority. The refuge objectives regarding forest restoration are consistent with the findings of this research.

Invasive Plant Species

(Letter ID#: 65, 69, 72, 80–Petition, 108–Form Letter)

Comment: We received comments on invasive plant species from the Delaware Chapter of the Sierra Club, as well as in the form letter. The form letter stated that the refuge needs to control invasives, particularly *Phragmites*, Johnsongrass, and multiflora rose. The Sierra Club writes, “Promoting native habitat is especially important where wetland migration will occur, and is needed to ensure that natural habitat is established. Without intentional management of native wetlands, unmanaged areas will likely be dominated with invasive species.”

Response: We agree that it important to controlling invasive species to protect native habitats and wildlife species. We include strategies to control invasive species under many of the objectives in alternative B, including using early detection/rapid response techniques and mapping invasive plant species occurrences on the refuge.

Comment: The EPA commented on the refuge’s proposal to treat invasive plant species with pesticides, writing, “It should be clarified in the [final] CCP/EIS that all pesticides must be mixed, loaded, and applied in accordance with all label specifications and all applicators must be certified with the Delaware Department of Agriculture or working under the supervision of a certified applicator.”

Response: Thank you for the comment. We updated our discussion of herbicide use in the section on “Managing Invasive Species” under in “Actions Common to All Alternatives” in the final CCP/EIS.

Comment: One commenter noted on text on page B-117 of the draft HMP. He writes, “Should the “eradication of exotic and invasive species” be given a high priority when on page 101 it indicates that the primary invasive plant, *Phragmites* spp., is a valuable component of improving accretion rates in salt marshes?”

Response: According to Refuge System policies (517 DM 1 and 7 RM 14), refuges must use an integrated pest management (IPM) approach, where practicable, to eradicate, control, or contain pest and invasive species. Unfortunately, there are currently 10 invasive species on the refuge. Since refuge resources are limited, we must carefully choose which species and what areas of the refuge to focus our invasive plant control efforts. Under alternative B in the draft CCP/EIS, we propose the following priority order for invasive species management activities: 1) Prevent invasion of potential invaders; 2) eradicate new and/or small infestations; and 3) control and/or contain large established infestations. In the draft CCP/EIS, we use the term “eradicate” to apply small infestations or new invasions that are still isolated to a limited few locations. Since we will never eradicate *Phragmites* spp. across the whole of the refuge, we must choose where to conduct control for it. A *Phragmites* marsh will never be a goal, however where it appears to be maintaining the integrity of emergent marsh soils in Units 2 and 3, we may choose to leave it in place until a salt marsh restoration plan is underway.

Wildlife

General

(Letter ID#: 24, 65, 80–Petition, 82)

Comment: The Prime Hook Beach Organization and the authors of another letter felt that the CCP did not adequately analyze the impacts of the three alternatives on horseshoe crabs. The Prime Hook Beach Organization writes, "...and has allowed crabs to be stranded within the breaches where they will lay eggs in an unproductive environment. Crab hatchlings will not find their way out of the proposed inland bay nor will many adults. We expect the CCP to consider these impacts on the horseshoe crab in its analyses in any plan for going forward." The other commenters add that horseshoe crabs "are trapped by being washed into Unit II and dying. The fate of the horseshoe crab is directly linked to the fate of the migrating Red Knot."

Response: As stated in Chapter 4, Sandy Beach and Dune Grassland Habitats, we propose to allow natural processes to affect the evolution and functioning of coastal landforms and habitats (including sandy beach, overwash tidal flats, dune and grasslands, and mudflats) along approximately 1.5 miles of shoreline only in Unit I, as they naturally evolve in order to conserve spawning horseshoe crabs.

Sand will only be placed on the beach if it is needed for marsh restoration as proposed in the Service's preferred alternative B for beach nesting species or horseshoe crabs. The State of Delaware's Shoreline and Waterways Management Section has successfully conducted beach nourishment projects hauling sand from off-site sources to project sites that have been found to successfully create suitable habitat for horseshoe crabs and piping plovers (DNREC 2004). Refuge staff would work with DNREC and the U.S. Army Corps of Engineers to ensure proper sand size is obtained for any sand placed on the refuge. DNREC and the U.S. Corps of Engineers have analyzed the sediment of the main channel of the Delaware River. The results can be found at: http://www.dnrec.delaware.gov/Info/Pages/US_Army_Corps_of_Engineers_2010_Dredging_Application.aspx and at <http://www.nap.usace.army.mil/cenap-pl/drmcdp/pr.html>.

Within Chapter 5 of the CCP, we state, the arachnid, *Limulus polyphemus* (horseshoe crab) is another very important refuge invertebrate species listed as a sensitive and significant Delaware keystone species in the Delaware Wildlife Action Plan (DNREC 2005). It is also considered a species of conservation concern by the Atlantic States Marine Fisheries Commission. The horseshoe crab is listed as a managed species with its own ASMFC Interstate Fishery Management Plan for the mid-Atlantic to conserve and protect these unique invertebrates. Refuge beach habitats provide spawning habitats for horseshoe crabs and we participate in annual census activities to monitor population status which also benefits this species. The conservation of horseshoe crab spawning habitat is incorporated into all three alternatives.

Storm surge channels that cut through foredune ridges move invertebrates from nearshore environments to the beach face and back-barrier environments. Horseshoe crabs will use natural beaches and overwash deltas as spawning sites. Blue crabs will use restored salt marsh as a nursery area. Restoration of salt marsh in impounded wetlands will benefit invertebrate species that favor salt marsh (Gratton and Denno 2005), though the shift in invertebrate species composition may lag behind the shift in vegetation communities by a decade or more (Craft et al. 1999).

Comment: The authors of one letter were concerned about the selection of focal species for the refuge. They write, "The selection of species is only applicable for Alternatives B and C. It must be clear that Alternative A does not provide a stable environmental for these species because water levels cannot be controlled. Also, Alternative A is not fairly evaluated as being unacceptable because many species that were in the Impoundments are no longer present and only stand a chance of being reintroduced under Alternatives B and C." They then continue to say, "The selection of focal bird, fish, and insect species as indicators of ecosystem function is misleading. These were not these species in the Impoundments prior to the flooding. The baseline for analyses has to... reflect the species that were present prior to the breaches..."

Response: We developed the focal, indicator, and representative umbrella species based on wildlife surveys conducted in 2004 and 2005. All of these species were found on the refuge prior to flooding. These representative umbrella and indicator species were selected based on their ability to serve as monitoring targets to evaluate management actions directed at the habitats listed. The actual acreage and location of each habitat type will vary among the alternatives. In that manner, they do serve as the basis for evaluating all of the alternatives, including alternative A. We specifically discuss the impacts to many of these species and habitats in chapter 5 of the draft CCP/EA under the section on impacts that would not vary by alternative, as well as throughout the sections on impacts for each individual alternative.

Comment: The authors of one letter writes, “In late June of 2012 there was a major fish kill along the south side of the Prime Hook Road. This is an example of why Alternative A is bad for the environment as well as wildlife. Alternative A, as things are now, does not provide a stable saltwater environment, nor does Alternative B. This alternative traps fish and horseshoe crabs. It is obvious that there cannot be open access to the Bay. A hybrid Alternative to B needs to be developed that has a stable saltwater marsh that is not an extension of the Bay so that these negative impacts on wildlife do not occur... Once inside the Refuge they continue to be carried by wind driven currents with little to no chance of returning to the bay and surviving. Recent fish kills observed at the Prime Hook Road culverts bear this out.”

Response: The June 2012 event was not an isolated incident and similar fish kills are a common phenomenon along the Atlantic seaboard as inland bays experience poor water circulation, warm temperatures, and nutrient overloads that can be a deadly combination for marine life during the summer months. Alternative B includes active restoration (e.g., improving wetland elevation and increasing historic flow and hydrology within refuge impounded wetlands) to ameliorate damage and facilitate the healthy succession to a brackish/salt marsh. A functioning salt marsh results from the interactions of salt marsh plants species diversity that flourish in response to specific patterns of tidal flooding. The ability of these systems to thrive is dependent upon the salt marsh’s link to the bay. We also look to our neighbors and partners to reduce their levels of phosphorous and nitrogen use and run-off as the algal bloom was exacerbated by excessive nutrient levels. Many states with vulnerable estuaries along the Atlantic seaboard are beginning to address nutrient run-off issues.

Comment: One individual stated that pages 5-90 through 5-103 of the draft CCP/EIS do not consider terrestrial and freshwater invertebrates.

Response: Please refer to the “Impacts to Invertebrates” section on pages 5-104 to 5-133 in chapter 5 of the draft CCP/EIS.

Migratory Birds

(Letter ID#: 24, 37, 81, 93, 98, 100, 104)

Comment: One individual was concerned that refuge staff took down wood duck boxes. He writes, “[People] are not seeing the same number of wood ducks in the [refuge’s] fields and ponds. [Why weren’t local groups (e.g.4-H or young waterfowlers)] given the opportunity to maintain these boxes? Please restore Prime Hook to a prime wintering waterfowl location on the East Coast. Your decision will affect all migratory birds.”

Response: During the last century, intensive management for wood ducks included establishing nest box programs in areas where there were a scarcity of natural cavities (e.g., deforestation of wetland areas). Starting in the 1970s, wood duck production was one of the management objectives at Prime Hook NWR. To help achieve this objective, the refuge started a wood duck nest box program in the 1980s and by the 1990s we managed over 500 nest boxes on the refuge. Nevertheless, by the late 1990s, we decided to change our emphasis from waterfowl production to maintaining and enhancing waterfowl migrating and wintering habitat. We made this change for two reasons:

- We feel that providing migrating and wintering habitat for waterfowl is the greatest contribution that the refuge could make for waterfowl resources in the Atlantic Flyway.

- Wood duck populations were no longer declining in the Atlantic Flyway (harvest numbers rank wood ducks as the third most harvested waterfowl species in Delaware and the second most abundant waterfowl species harvested in the Atlantic Flyway).

Because of this shift in management focus, we decided to discontinue the wood duck box program on the refuge and re-dedicate refuge funds and staffing to support higher priority management objectives.

Comment: The State of Delaware writes, “Although Service lands represent a small fraction of potential agricultural land in the state, these lands do represent strategically valuable wintering areas for migratory Canada Geese. It wasn’t until agricultural producers on Delmarva established large scale farming of corn and soybeans did Canada geese change their wintering patterns and start short stopping the Carolinas in preference for Delmarva, thereby becoming the common winter occurrence in Delaware they are today. Now a similar phenomenon appears to be occurring north of Delaware but we not on the receiving end this time. Pennsylvania and New York are growing more corn and thus appear to be short stopping the geese from coming to Delmarva.”

Response: Historically, migrant Canada geese wintered in all southern Atlantic Flyway states. In Georgia and Florida, major declines occurred between 1953 and 1960. Today, no Atlantic Population (AP) Canada geese are known to exist in these states. Midwinter survey estimates of Canada geese in South Carolina declined from 44,000 to 1,500 between 1964 and 2002. Today only a few remnant flocks winter in the state. Large numbers of Canada geese wintered in eastern North Carolina and Back Bay, Virginia. Migrant Canada geese wintering in these areas have declined greatly since the early 1960s (Management Plan for the Atlantic Population of Canada Geese, 2008).

Several factors contribute to the decline of AP geese in the southern Atlantic Flyway, including lower survival from increased exposure to harvest in more northern states and provinces; and distributional shifts caused by changes in agriculture, climate, and other factors often collectively referred to as “short-stopping.” Goose managers have no ability to affect climate change or landscape-level agricultural practices. Since under these circumstances, “short-stopped” geese will not pass through Delmarva to reach wintering habitats, it is unlikely that maintenance of existing or increasing row-cropped acreage in the south will have any effect on the wintering distribution of birds to the north. Currently, the primary means to promote the long-term viability of the southern migrating group of geese is to modify the opening days of the goose hunting season (AMPFTAPOCG 2008). Presumably, this same strategy would be employed should the same phenomenon affect wintering AP Canada geese in the Chesapeake Bay.

The Service is faced with many competing interests. The Service’s BIDEH policy encourages managing refuges as native, self-sustaining habitats to support a diversity of migratory birds. We can no longer afford to manage for only one guild (waterfowl). Service laws and policies now extend beyond waterfowl, alone. Delmarva refuges are dominated by emergent and impounded wetlands, habitats favorable to Canada Geese. Delmarva has ~1.4 million acres (2007) of row-crops (also favorable to Canada Geese), representing a relatively sterile, severely fragmented, landscape once dominated by forest. Much of the “forest” remaining on the shore is represented by relatively barren (biologically) loblolly pine farms. On Prime Hook NWR, we are proposing to eliminate cooperative farming on the refuge and restore these areas to native habitats, including forests. Habitats crucial to the other guilds, particularly those that are area sensitive, are likely to continue degrading to a greater degree than those habitats sought out by Canada geese.

Similarly, the final EIS on light goose management advocates changing refuge habitat management practices to reduce food availability and make habitats less attractive to light geese, such as snow geese. Again, we are proposing to restore croplands to native habitat. While such programs were not initiated specifically in response to the light goose issue, they will have the added effect of reducing food available to light geese, and perhaps, unfortunately from the State perspective, AP Canada geese as well. However, wetlands and agricultural crops are not currently limiting across Delmarva. Row-cropped acreage may wane over the long-term, but because of the primary economic importance of farming, and the secondary

economic/aesthetic value of Canada Geese, farming will continue in some measure. We also recognize the very real possibility for the long-term decline of AP Canada Geese wintering on Delmarva. Management will require proactive research and harvest management strategies to stem the potential loss. The refuge is prepared to participate with the Flyway in such programs if and when warranted.

Comment: One individual asks, “When was the last time anyone saw a pheasant [on the refuge]?”

Response: In the fall of 2011, mowing crews saw a pheasant on the Island Farm Tract. Pheasants are considered an exotic species and are not a management priority.

Comment: Several commenters felt the draft CCP/EIS was wrong in stating that there are ground-nesting opportunities for bird species, such as least terns and American oystercatchers, under alternatives B and C. For example, the authors of one letter write, “There cannot be any ground nesting birds in the overwash areas in an unstable environment that varies so much in water levels as the tides change, storms occur or winds blow heavily.”

Response: We respectfully disagree, and find that there is scientific support for our assertion that there are increased opportunities for beach-nesting American oystercatchers, least and common terns, and piping plovers in overwash and other ephemeral barrier island habitats. These birds have evolved their life-cycle breeding strategies to use these highly dynamic areas. Federal recovery plans for the piping plover explicitly state that the net loss of breeding shorebird habitat may occur if inlet and shoreline migration is forestalled, because recently overwashed areas often constitute prime piping plover, American oystercatcher, least and common tern nesting sites (USFWS 1996). Numerous conservation plans for beach-nesting birds encourage the conservation and protection of natural processes of overwash and inlet formation that perpetuate the preferred habitat of these birds (USFWS 1996, DNREC 2005b, Steinkamp 2008, Conservation Action Plan for American Oystercatcher, Brown et al. 2001). These plans provided the foundation for our conservation goals and objectives for beach-nesting and migrating shorebirds.

Comment: The Delaware Audubon Society feels that clapper rails and black ducks will be adversely impacted if alternative B is adopted. They also feel that American black ducks are focal species for the refuge, and therefore should not be hunted on the refuge.

Response: We respectfully disagree.

As for clapper rails, alternative B includes the use of Conservation Order to hunt and control snow geese in salt marsh habitats. Clapper rails prefer nesting in habitat of salt marsh smooth cordgrass (*Spartina alterniflora*) and tend to concentrate along tidal creeks. Nests are usually in dense cover near water. Tall form cordgrass along ditches and ditched ponds provide the best breeding habitats. Early nesting from Virginia to New Jersey goes from April 1 to June 1 for first broods with later nests (second broods) from July 1 to 20. Only the Atlantic population from New England south to the mid-coast of North Carolina makes a traditional migration. Spring migrants move in March and April but their precise schedule and routes have not been determined. Nesting usually begins the first to second week of April to the end of June on the refuge. Fall migrants begin to depart in late summer and continue to move well into November. Clapper rails breeding further north migrate earlier. Snow goose Conservation Order hunting would occur from the end of January to mid-April in refuge salt marsh habitats proposed in alternative B. This hunting would be winding down just as clapper rail territories are starting to become established, and would not likely pose significant disturbance to clapper rail breeding cycles. Snow goose hunting in salt marsh habitats would also not interfere with clapper rail migrating cycles. The intent of the snow goose conservation order is to reduce snow goose populations, which can negatively affect clapper rail habitat. Secondly, alternative B proposes to restore up to 4,000 acres of former freshwater impoundments to salt marsh. These restoration efforts would have substantial benefits for local clapper rail populations.

As for black ducks, they were selected as a "focal" or indicator species by the refuge because they are included on several Federal and State lists of species of conservation concern, but more importantly for their close association with native salt marsh. Our assumption is that targeting habitat management actions to a few focal species will benefit hundreds of other fish, wildlife and native plant species. The Service's Migratory Bird Program has generated its own list of Birds of Management Concern and "Focal" Species. The Birds of Management Concern is a list of species, subspecies, populations or geographic segments of populations that warrant management or conservation attention. Birds of Management Concern are drawn from the list of species afforded protection under the Migratory Bird Treaty Act (50 CFR Part 10) and therefore fall under Federal jurisdiction. To be of management concern, a bird must be a high priority game bird, on the Birds of Conservation Concern 2008 list, a Federal threatened or endangered species listed in the United States or overly abundant leading to management conflicts. Within the Migratory Bird Program's list of "focal" species, not to be confused with the Prime Hook NWR-specific list generated by the refuge for this CCP, are some species of game birds, including the American black duck. The Migratory Bird Treaty Act, grants the Secretary of the Interior the authority to establish hunting seasons for any of the migratory game bird species. For waterfowl management specifically, the United States and Canada are divided into four flyways; the Atlantic, Mississippi, Central, and Pacific. In the United States, the Flyway Councils, consisting of representatives from state and provincial game-management agencies, recommend regulations to the Service for waterfowl and for most migratory, shore, and upland game birds. The Councils are advised by flyway technical committees consisting of state and provincial biologists. These technical committees evaluate species and population status, harvest, and hunter-participation data during the development of the Council recommendations.

The Service's Office of Migratory Bird Management, with advice from biologists in the Service's Regional Offices, evaluates the Council recommendations, considering species status and biology, cumulative effects of regulations, and existing regulatory policy, and makes recommendations to the Service's Regulations Committee to set hunting seasons for migratory birds that ensure healthy game populations in years to come and fair distribution of hunting opportunities throughout the migration routes.

The Service Regulations Committee considers both the Council and MBMO recommendations, then forwards its recommendations for annual regulations to the Service Director

Once regulatory proposals are approved, they are published in the Federal Register for public comment. After the comment period, final regulations are developed, which are then signed by the Assistant Secretary of the Interior for Fish, Wildlife, and Parks. From this federal framework, individual States may select hunting seasons and bag limits. Once the States have adopted their respective seasons and bag limits, individual refuges may choose to adopt State regulations in-whole, or the refuge may choose additional refuge specific regulations.

In an effort to reduce undesirable impacts on refuge resources and management programs, PHNWR has adopted more restrictive regulations than those adopted by either the Service's MBMO or the State of Delaware. These regulations include area closures (sanctuaries), hunting 4 of 7 days/week instead of 6 of 7, and ending the hunt day at 3:00 PM instead of sunset.

The commenter has taken issue with the Service's intention to hunt a "focal" species. As indicated above, black ducks and black duck hunting are managed on a state, flyway and continental scale. The process of setting hunting regulations is a deliberative one, based on substantial data. Regulations are set with the full knowledge and desire that a proportion of the population will be removed by hunters, whether on or off of NWRs. Within the northeastern US and eastern Canada particularly, the black duck is considered a valuable recreational and economic resource. The apparent 50% decline in black duck numbers over the last half of the last century, has raised concern for the long-term sustainability of a currently viable, albeit reduced, population. Thus, the American Black Duck has received the designation of "focal" species by the Service's Migratory Bird Program for some reasons other than those presented by PHNWR.

Under both the Administration Act, as amended, and 43 CFR 24, the Director as the Secretary of the Interior's designee will ensure that Refuge System regulations permitting hunting and fishing are, to the extent practicable, consistent with State laws, regulations, and management plans (605 FW 2). The Service and the State of Delaware consider the black duck population capable of sustaining harvest; so PHNWR will comply with State seasons and bag limits.

Finally, the potential restoration of 4,000 acres of former freshwater impoundments to saltmarsh (a preferred habitat for black ducks) would have beneficial impacts to local black duck populations.

Comment: Several commenters feel that there is a major fault in the basis for the draft CCP/EIS Alternatives because for bird population data in Impoundments II and III (e.g. Current Alternative A) an analysis of types and quantities present needs to be part of evaluation of Alternatives B and C.

Response: The only data we summarized in the draft CCP/EIS were from past surveys, meant to describe the historic and recent status of bird populations on the refuge. In chapter 3 of the final CCP/EIS, we updated this bird survey data to be as current as possible. The Statewide data comes from DNREC, and we rely on them for its timely availability. However, it is impossible to predict the specific response of bird populations, including the specific species and quantities present, for alternatives B and C, since those scenarios are hypothetical. We instead evaluate the expected impact of each alternative to bird populations based on scientific literature and an understanding of the life history of the species and species guilds. We have done this thoroughly within chapter 5 on the following sections: "Impacts to Waterfowl," "Impacts to Shorebirds," "Impacts to Landbirds," and "Impacts to Secretive Marsh and Waterbirds".

Comment: The Delmarva Ornithological Society encourages the Service to include specific conservation measures for the declining northern bobwhite. They suggest studying bobwhite habitat use, drafting a bobwhite management plan, and managing former croplands for the bobwhite. They also support reducing red fox population on the refuge "to more closely match historic population levels and to benefit ground-nesting birds and upland game birds, especially Northern bobwhite."

Response: We agree there is a growing concern for declining northern bobwhite populations. Under our preferred alternative, Goal 4 deals with early successional habitats such as grassland and shrub-scrub which would benefit the local bobwhite population.

Comment: One individual pointed out that the refuge's purpose is "for use as an inviolate sanctuary, or any other management purpose, for migratory birds. However, he writes, "alternative B does not propose management practices with a stated goal towards creating habitat that is more attractive or suitable to migratory birds than the previously freshwater impoundments were."

Response: We acknowledge that the restoration of the impoundments to a saltmarsh may result in a loss of diversity at the local scale, but the restoration provides biological integrity and diversity at the landscape level. Managing habitat in the most sustainable and resilient manner is ultimately the best for migratory birds. A wetland that is vulnerable to repeated degradation doesn't serve wildlife well in the long run.

Threatened, Endangered, and Candidate Species

(Letter ID#: 28, 69, 81, 108–Form Letter)

Comment: One individual commented on federally threatened piping plovers. He writes, "Piping plover and other beach nesters will never nest as long as you permit continuous public access that especially reaches into April and May, a critical time when non-hunted migratory birds species need zero disturbance to set up critical nesting territories. The State law permitting public access from mean high water to the bay does not apply to Federal land. Besides, the Endangered Species Act takes precedence." The signatories of the form letter agree that the protection of endangered or rare beach nesting birds is important and suggest that they be protected as described under alternative C.

Response: Under objective 1.1 of alternative B, we propose to seasonally close the beaches to public access. However, we do not own the entire beachfront and some of the overwash areas. The Service does not have the authority to regulate private property but we agree that we have the authority to close intertidal areas extending out from our property if public access would harm wildlife. Although piping plovers occasionally visit the refuge, no nesting has occurred, thus limiting the role of the Endangered Species Act. Should they locate on private property adjacent to federal lands, we will work with our neighbors to help them understand and implement adequate beach management measures to help them avoid an inadvertent violation of the ESA.

Comment: The Delaware Chapter of the Sierra Club, one individual, and the form letter commented on the federally endangered Delmarva fox squirrel.

- The Sierra Club supported the proposed habitat management for Delmarva fox squirrels under alternative B, saying that “Promoting a diversity of native forest types within the refuge would provide valuable habitat for endangered and other species.
- The individual felt the Service did not adequately address the impacts of proposed hunting and fishing expansions on Delmarva fox squirrel, stating, “You need to more adequately discuss the impact of 8 plus months of continual hunting on their life cycle. You have increased the acreage of squirrel habitat opened to hunting and increased the number of days of hunting and scouting. The impact [of hunting and primitive fishing] cannot be insignificant.”
- The signatories of form letter felt that there was too much emphasis on Delmarva fox squirrel in the draft CCP/EIS: “Why is there an emphasis to increase forest habitat for the endangered Delmarva fox squirrel. [It] is in the process of being declassified. That means it is not an endangered species anymore.”
- One individual writes, “Current [Delmarva fox squirrel] program is surviving, not thriving. I question if the additional recommended program will have any significant short-term effect on the population.”

Response:

- We thank Sierra Club for their support for the Service-preferred alternative.
- We conducted an Intra-Service Section 7 consultation with the Service’s Ecological Service program, as required by the Endangered Species Act (Appendix G). According their recovery plan, Delmarva fox squirrels are not disturbed by human activities any more than gray squirrels, provided their habitat is satisfactory. The Service’s preferred alternative proposes to improve Delmarva fox squirrel habitat. The refuge is closed to squirrel hunting. A portion of the refuge’s squirrel habitat is currently open hunting with no known adverse impacts. The expanded forms of hunting will have negligible impacts to the Delmarva fox squirrels on the refuge.
- While it is true, the Service is considering the down-listing or delisting of the Delmarva fox squirrel, as of this writing of this CCP the Delmarva fox squirrel is still listed as endangered. Managing our forests for Delmarva fox squirrel also provides valuable mature forest habitat for migratory birds, a habitat type which has declined throughout Delaware. Furthermore, managing the forests for Delmarva fox and migratory birds supports the establishing purposes of the refuge.
- The small population on the refuge appears to be stable, although closely monitoring a small population is difficult. The commenter is correct in that many of the proposed strategies are long-term in nature (reforestation) and the benefits will not be known for years to come.

Nuisance Wildlife- General

(Letter ID#: 22, 64, 65, 67, 80–Petition)

Comment: One commenter felt our description of integrated pest management on page B-123 of the Draft Habitat Management Plan was deceptive. She requests that the Service change the phrase “wildlife management” to “wildlife killing” throughout the CCP and to stop “sneakily try[ing] to deceive...the Delaware public.”

Response: Comment noted.

Comment: One individual was concerned with the impacts of predators on nesting shorebirds. He writes, “For the past few years, the overwash areas at the end of Fowler Beach Road hosted a large colony of Least Terns and a Pair of American Oystercatchers, all attempting to breed. To my knowledge, they were not successful because of predators. Although the bird’s presence was well-known, no effort was made to install predator exclusion fencing. So if this is being changed to include active predator control, I strongly support that approach.”

Response: Under alternative B, the refuge proposes to implement a limited predator control program. Red fox, raccoon, gull, crow, rice rat, feral cat, and other species have been documented as effective predators upon nesting shorebirds, eggs, and chicks. Some shorebirds, such as the federally threatened piping plover and colonial beach nesting bird populations, are especially vulnerable to loss of suitable nesting habitat due to high sensitivity to human disturbance. Given the plight of migratory birds, especially those requiring the limited beach or island nesting habitats, the refuge may utilize a predator management program to benefit these species.

Comment: One commenter noted on Pg B-123 “An IPM approach to all Refuge Management Activities to eradicate, control, or contain pest and invasive species.” If you have invasive insect species, pesticides may have to be used as a first resort, not a last. Pesticides are part of the IPM toolbox...”

Response: We agree that pesticides are a “tool” in the integrated pest management “toolbox” and that pesticides are sometimes the most appropriate technique for treating a particular invasive species or infestation. We will evaluate each incident of invasive species colonization or expansion on a case-by-case basis to determine what the best treatment for that area is. Under Service policy (30 AM 12), the ultimate goal is to eliminate pesticide use on Service lands and facilities, where possible. Therefore, we will try to treat species without pesticides when appropriate and feasible. However, in some cases we will use pesticides.

Unfortunately in the case of mosquito control, DCMS and the Service must face the irreconcilable fact that the State mandate to “eradicate mosquitoes” is in direct conflict with numerous legislative acts and Service policies the refuge must follow. Mosquitoes are a natural component of the coastal plain. As such, they are an integral part of the ecosystem the Service is obligated to manage. Current policy does not make distinctions between one native species and another (See also comments and responses below under, “Nuisance Wildlife- Mosquito Control.”)

Nuisance Wildlife- Snow Geese, Resident Canada Geese, and Mute Swans

(Letter ID#: 55, 65, 67, 80–Petition, 81, 93, 106, 108–Form letter)

Comment: The Delmarva Ornithological Society, one individual, and the form letter commented on overabundant and nonnative waterfowl. The Delmarva Ornithological Society supports reducing overabundant snow geese and resident Canada goose populations to help conserve salt marsh habitat, but urges the Service to monitor impacts from the Conservation Order on other waterfowl species, particularly American black duck. If there are any adverse impacts to waterfowl, they ask that we modify how we control these species.

Response: Thank you for your support. We agree an adaptive management strategy is required if monitoring indicates negative impacts are occurring in the salt marshes.

Comment: One letter states, “Alternative B would seem to favor more snow goose habitat, plus result in greater destruction of farmer’s fields. It appears that more and more snow geese will be attracted to open water, allowing for more damage to developing marshes.”

Response: We respectfully disagree that alternative B would favor more snow goose habitat. We believe that our proposal will eliminate the artificial food supply for snow geese by reverting agricultural areas to native vegetation. The final EIS for Light Goose Management in North America (June 2007) suggests that changes to refuge management can contribute to the return of snow goose population numbers to levels that are more compatible with the ability of natural habitats to support them. These changes include a reduction in the acreage of agricultural habitats in favor of more natural habitats such as native forest. This impact will also benefit a variety of other wildlife species that rely on these native habitats. The Conservation Order to reduce snow goose numbers suggests changes in hunting programs (e.g., electronic calls, unplugged shotguns, and more liberal bag limits) to allow hunters to harvest snow geese outside of the traditional migratory bird hunting season. The Conservation Order also offers increased harvest pressure opportunities to prevent and mitigate the destruction of any farmer fields that experience increased snow goose use. If more snow geese should be attracted to open water areas on the refuge, then increased hunting pressure on snow geese within the framework of new Conservation Order dates (February through mid-April) will mitigate damage caused by excessive snow goose herbivory to any developing marshes and wetland vegetation and protect salt marsh vegetation from excessive snow goose damage.

Unfortunately, it is impossible to provide quality habitat for waterfowl, waterbirds, secretive marsh birds and shorebirds while completely excluding snow geese. The snow goose Conservation Order is designed to reduce the size of the snow goose population and its impact on all available habitats, including salt marshes, agricultural crops and the fragile tundra breeding grounds.

Snow geese are quite mobile. Birds using Delaware’s NWRs routinely move inland to feed. The historic refuge contribution of 400-600 acres of agricultural lands is dwarfed by approximately the 1.4 million acres available on the Delmarva Peninsula from which to feed. Planting crops in an attempt to hold snow geese on refuge will only eliminate these limited refuge acres for use by other trust resource species.

Comment: One individual writes, “The vision of the conservation order [allowing snow geese hunting on the refuge] was to protect crops. By opening the refuge [to snow geese hunting], particularly the marshes, will have the reverse effect – geese will no longer feed/rest on-refuge. They will fly off to impact on adjacent farmland, causing considerable damage to private farms around refuge.”

Response: We respectfully disagree. The Conservation Order’s intent is to reduce and stabilize the size of several overabundant populations of light geese that damage habitats on their breeding, migration, and/or wintering grounds. The Conservation Order allows for adaptive management in its habitat and hunting programs. Actions may include altering impoundment water levels, eliminate roosting sites, and moving birds to where hunting does occur. Any uses included with changes in management practices are only permitted after they have been determined to be compatible with the purposes of the refuge. We have found hunting the Conservation Order compatible for Prime Hook NWR (appendix E).

Comment: One individual feels that snow geese are contributing to the decline of marsh vegetation. He also feels that the dune breaches are exacerbating these issues.

Response: We agree as both issues can have negative consequences to the saltmarsh. The impacts are outlined in chapter 5.

Nuisance Wildlife- Mosquito Control

(Letter ID#: 7, 19, 24, 28, 46, 49, 64, 66, 67, 68, 69, 80–Petition, 81, 82, 96, 98, 104, 106, S15)

Comment: The Delaware Chapter of the Sierra Club and several individuals support the proposed changes to the refuge’s mosquito control program under alternative B, specifically eliminating adulticides, in order to minimize impacts from pesticides to non-target species. One individual suggested “limiting the use of non-specific methoprene for larval control in favor of [the more specific *Bti*].” The Sierra Club encouraged discontinuing the use of all pesticides for mosquito control, and instead using natural management measures, such as “restoration of native habitats that [support] mosquitoes’ natural predators.” The remaining two individuals requested that we only spray during declared health emergencies. One commenter also wanted the refuge to discontinue the use of open marsh water management for mosquitoes because it can degrade habitats.

Response: Thank you for your support.

Comment: We received 14 letters with comments against the proposed changes to mosquito control under alternative B. Four comments were generally opposed to changes in mosquito control, while others were concerned about public health and safety and potential impacts to surrounding communities. The town of Slaughter Beach suggested trying natural mosquito control methods, “such as selective ponding and ditching techniques,” but that if these methods did not work, then they felt that Service must use pesticides. The authors of one letter felt that the mosquito control measures proposed under alternative B contradicted Executive Order 13352, which “specifically directs the Department of the Interior to take positive measures to protect the safety, health, and welfare of the communities it serves.” They also stated that the State of Delaware pays for the mosquito control and “cares about the health and safety of surrounding communities” and the Service should continue its existing mosquito control program in coordination with State agencies.

Response: The community’s interpretation of the EO is incorrect. Cooperative conservation, as defined in Executive Order 13352, covers actions that “relate to use, enhancement, and enjoyment of natural resources, protection of the environment, or both, and that involve collaborative activity among federal, state, local, and tribal governments, private for-profit and nonprofit institutions, other nongovernmental entities and individuals.” This EO may be interpreted as one of several “tools” or authorities that managers may employ as they use the full scope of the National Wildlife Refuge System authorities to protect refuge resources and values, while encouraging others to use theirs toward the same purpose. Nuisance oriented mosquito control, as directed by DMCS, is not a conservation activity designed to advance the laws and policies governing the management or purposes of the NWRS, hence EO (13352) does not apply.

Comment: DNREC-Mosquito Control Section and a group of local residents felt it was imprudent to require the declaration of a human health emergency prior to permitting the use of adulticides. Such an approach would be reactive not proactive.

Response: The Service agrees. The Service’s sole purpose in permitting the use of adulticides is to reduce a documented human disease threat. In other states where mosquito-borne diseases are more prevalent, disease is generally detected in mosquito pools, or birds up to several weeks in advance of human cases. However, the incidence of disease in mosquitoes or wildlife is far from a guarantee of mosquito-human disease transmission. This fact may be why many jurisdictions outside Delaware, including some national wildlife refuges, currently require the declaration of a public health emergency prior to conducting adulticide treatments.

We now believe that a public health emergency is too general a term for initiating adult mosquito control. Instead, initiating adult mosquito control will be triggered by documented mosquito-borne disease activity near the refuge. Appropriate documentation of a high risk to public health and safety would include adult mosquito monitoring data from the Refuge, or areas near the refuge that show an increase in the rate of disease-infected mosquitoes. Disease surveillance means pathogen presence in mosquito pool(s), wild birds, sentinel chicken flock(s), horses, or humans has been documented with its flight range of vector mosquito species present on the refuge. These conditions in combination with adult mosquito populations above established thresholds would trigger consideration of a more aggressive treatment strategy, including the use of adulticides. A threat is to be defined as detection of a mosquito-borne virus using any virus surveillance method of DMCS' choosing.

Comment: A group of local citizens wondered what agency was responsible for declaring a public health emergency and what criteria they use to determine if there is an emergency.

Response: Public health agencies make public health determinations. Within Delaware, contact Delaware Health and Social Services, Division of Public Health, for more information

Comment: DNREC – Mosquito Control Section is concerned that proposed restrictions on adulticide use on the refuge under alternative B of the draft CCP/EIS will make it more difficult and/or expensive for them to eradicate mosquitoes off the refuge.

Response: Unfortunately, DNREC-Mosquito Control Section and the Service must face the irreconcilable fact that the state mandate to “eradicate mosquitoes” and the numerous refuge-specific legislative acts and policies under which the Service must adhere are in direct conflict with each other. Mosquitoes are a natural component of the coastal plain. As such, they are an integral part of the ecosystem for which the Service is obligated to manage. Current policy does not make distinctions between one native species and another. Policy does dictate that our management advances the mission of the NWRS and the purpose for which the refuge was founded.

In Service policy (30 AM 12), the ultimate goal is to eliminate pesticide use on Service lands and facilities, where possible. While management costs are important, they are not the primary deciding factor in selecting a management approach. At times, it may be appropriate to select a more expensive management approach if that method is effective and reduces risks to humans and other non-target resources (517 DM). The basis for choice of pest reduction methods will be, in order of priority, 1) human safety and environmental integrity, 2) effectiveness, and 3) cost (30 AM 12). The CDC states, “effective larval control of the principal enzootic mosquito vector is probably a more cost-effective way to interrupt early-season virus amplification. We cannot manage federal wildlife refuges to eliminate nuisance native species, no matter how much we recognize that they are frustrating to people. We can take actions to reduce their numbers once there is a documented public health risk, as described in earlier responses and in the CCP.

Comment: DNREC-Mosquito Control Section indicates that they have fulfilled their duties adequately using the present protocols for adulticide treatments on the refuge with little change over the past 20 years. They wonder why change the refuge is now proposing to change these protocols.

Response: Prior to permitting mosquito surveillance and control, the Service must meet its obligations under the National Environmental Policy Act and complete a full environmental analysis. The Draft CCP/EIS and mosquito control compatibility determination represent our endeavor to analyze the impacts of mosquito control. Upon analysis, we find the use of the relatively target-specific larvicides permissible, but using adulticides for nuisance relief will materially interfere with and detract from the mission of the National Wildlife Refuge System and the purpose for which the refuge was established.

We recognize that nuisance mosquito species are an ongoing management concern of the State. We believe that the actions outlined in the CCP and the future development of a mosquito management plan will continue to be effective in preventing disease outbreaks and will also provide some ancillary benefits in controlling nuisance mosquitoes. However, we cannot allow the application of adulticides simply to control nuisance mosquitoes. As outlined in the CCP, we can only allow the application of adulticides when there is a high risk for mosquito-borne disease within the communities surrounding the refuge.

Comment: DMCS wishes to point out that simply because the other refuges on Delmarva (excluding Bombay Hook) do not permit mosquito control does not mean that it is not warranted.

Response: By DMCS standards whereby nuisance mosquitoes are to be eradicated, DMCS' assertion would likely be correct. But even the State of Maryland's policy on mosquito control would conflict with that of the State of Delaware where use of adulticides for nuisance control is concerned. Maryland policy states:

"Nuisance mosquito control will be provided only in residential areas (cities, towns, communities, individual residences) that specifically request mosquito control service and that cost-share to fund conduct of the program.

If any mosquito-borne disease becomes a real or imminent public health threat, adult mosquito control will be a priority issue. Under such conditions, spray exclusion zones will not be recognized and the action thresholds may be lowered. The Department will exercise all means possible to reduce the adult mosquito population to the lowest level possible within the area where disease transmission to humans is a concern."

The Service wishes to clarify that the other Delmarva refuges permit no form of mosquito control at all, including larvicides. Despite this fact, as far as the Service knows no real or imminent public health threat has been detected in the immediate vicinity of NWRs on Delmarva, with the exception of Chincoteague NWR in 1989. Please see next response for details.

Comment: DMCS indicates other mosquito control agencies wish to control mosquitoes on other refuges where it is not currently permitted.

Response: The Service wishes to point out that when, or if, a legitimate disease issue arises on those refuges, the mechanism exists within Service policy to permit mosquito control, if only on a case-by-case or temporary basis. DMCS indirectly indicated such regarding a 1989 outbreak of EEE in horses on Assateague Island National Seashore, where the National Park Service does not permit mosquito control. DMCS was apparently not aware that because of the unusual wet weather, the large number of mosquitoes, and the human health threat over the Labor Day weekend, the decision was made to spray on Chincoteague NWR as well. After consultation with the Center for Disease Control and regional office staff who obtained permission from the Chief of the Office of Environmental Protection Review, Department of the Interior, an aerial application of Dibrom, an adulticide, was applied to 5,700 acres of the refuge.

Comment: DMCS wishes to point out that other refuges do permit mosquito control even if most of the Delmarva refuges do not. A 2008 survey conducted by the American Mosquito Control Association found mosquito control was performed on 42 refuges around the country.

Response: Correct, approximately 40 of the 584 National Wildlife Refuges and Wetland Management Districts are currently permitted to use mosquitocides. However, approximately, 1 percent of the 584 are permitted to conduct mosquito control prior to the detection of mosquito-borne disease, otherwise they are relegated to using larvicides; most of the 40 are permitted for larvicides only. Big Branch Marsh NWR (BBMNWR) was specifically mentioned by DMCS as a refuge that applies adulticides over several thousand acres each year. This is true, however the application of adulticide on BBMNWR is contingent upon the detection of mosquito-borne disease prior to conducting treatment. Unfortunately, for areas around New Orleans, including Big Branch Marsh NWR, the climate and extended growing season will foster some disease amplification during some period nearly every year.

Comment: DCMS feels the Service relies too heavily on the Draft Mosquito Control Policy when placing restrictions on nuisance control of mosquitoes. Further DCMS feels it inappropriate to give any existing Service law or policy greater consideration than an as yet unfinalized mosquito policy. Another individual asked if the Service had finalized a national mosquito control policy and suggested that we should follow it once approved.

Response: The most important Federal statute guiding management of the NWRS and units is the National Wildlife Refuge System Administration Act of 1966, as amended (Refuge Administration Act – 16 U.S.C. 668dd-668ee). This law was significantly amended in 1997 with passage of the National Wildlife Refuge System Improvement Act of 1997 (Refuge Improvement Act).

The law makes clear that the NWRS is to be managed first and foremost for wildlife conservation. The Refuge Improvement Act also requires that six wildlife-dependent public uses be given priority consideration in refuge planning and management over all other general public uses. In essence, the law establishes a management hierarchy by declaring that refuges are to be managed first for wildlife, second for the six wildlife-dependent priority public uses identified in the Refuge Improvement Act (when compatible), and last for other general uses requested from the public (which would include mosquito control). Several substantive and procedural requirements associated with compatibility determinations form a major feature of the law. This is because all public uses must first be determined compatible with the purpose(s) of the refuge and the NWRS mission before that are allowed on a refuge. The law also requires monitoring of the status and trends of refuge fish, wildlife, and plants; as well as maintenance of the NWRS' biological integrity, diversity, and environmental health.

National guidance has been developed to implement some of the key provisions of the 1997 amendments to the Refuge Administration Act. This includes the Biological Integrity, Diversity, and Environmental Health policy (601 FW 3). Consistent with the Refuge purpose(s), this policy provides for maintenance of restoration of healthy, functioning biological communities composed of native species and habitat comparable with historic conditions. The policy favors refuge management, which restores or mimics natural ecosystem processes or functions. The policy generally discourages use of chemical pesticides and removal of native species, although the policy acknowledges that these actions may at times be necessary and appropriate. A key to proper implementation of this policy is evaluating how proposed actions would affect achievement of the Refuge purpose(s).

Another significant piece of national guidance developed in response to the Refuge Improvement Act is the compatibility policy (603 FW2). Mosquito control or other mosquito management activities proposed by a mosquito control agency or other non-NWRS party would qualify as a “refuge use” and the compatibility regulations and policy would require that a compatibility determination be made. This determination would be for the purpose of determining whether, based on the Refuge Manager’s sound professional judgment, the proposed mosquito management activities would materially interfere with or detract from the refuge purpose(s) or the NWRS mission. This determination would need to be made in writing and would have to allow an opportunity for public comment.

The compatibility policy also states that a use must be determined not compatible if we have insufficient information to determine the use as compatible. In addition, if we have insufficient management resources (e.g., funds, staff, facilities, and equipment) to ensure that a use would occur in a compatible manner, then the use is not compatible. Finally, the Compatibility policy states that a use would not be compatible if the use conflicts with maintenance of refuge biological integrity, diversity, and environmental health (See Biological Integrity, Diversity, and Environmental Health Policy). A refuge mosquito management program needs to be carefully planned and implemented to ensure that this last policy requirement is not violated.

The National Environmental Policy Act of 1969, as amended (NEPA – 42 U.S.C. 4321-4347) is another important Federal statute that would be triggered by a proposed refuge mosquito management program. NEPA's are primarily procedural in nature. Among other things, NEPA requires that Federal agencies "Utilize a systematic, interdisciplinary approach... in planning and decision-making..." and "...insure that presently unquantified environmental amenities and values... [are]... given appropriate consideration in decision-making along with economic and technical considerations..." Prior to making a decision to undertake a proposed action, agencies are to consider a range of reasonable alternatives and the effects of their implementation. We have prepared this environmental impact statement in compliance with NEPA.

Despite the lack of final mosquito control policy, the Service has adequate Legislative Acts and policies guiding our decisions.

Comment: DMCS states, "There is a profound difference here between a risk-based probability assessment and a hazard-based possibility assessment. Risk is far more complex but realistic... Conversely, hazard can readily be found everywhere if one is looking for such ... here all substances have the potential to be hazardous ... if one were to now take a hazard-based assessment approach ... where mere possibilities for harm become paramount ..., you could then probably make a case for "just saying no" to almost any targeted pesticide product of your choosing."

Response: There is an apparent contradiction in DMCS' assessment of risk from pesticides and its assessment of risk from mosquitoes. Aside from the fact that State law mandates eradication of mosquitoes for nuisance purposes, DMCS justifies mosquito control, in part, on the historical presence of EEE and WNV in Delaware and the "possibility" of future human infections. Here in the absence of any current indication of disease in the local environment, DMCS allows the "possible" to trump the "probable."

As stated in the draft CD, "Despite the EPA's having gone through the risk assessment process, and having licensed the use of Naled for mosquito control, using specific tools, under specific conditions, the refuge manager must adhere to additional standards, policies and laws specifically governing the management of National Wildlife Refuges. They include:

- National Wildlife Refuge Improvement Act of 1997
- Biological Integrity, Diversity, and Environmental Health Policy (USFWS 2001)
- Appropriate Refuge Uses Policy (USFWS 2006a)
- Compatibility Policy (USFWS 2000)
- Mission of the National Wildlife Refuge System (USFWS 2006b)
- Prime Hook National Wildlife Refuge Purposes.

Within the context of refuge specific laws and policies, use of chemical pesticides, depending on circumstances, may materially interfere with and detract from the fulfillment of the Refuge System mission and the purposes of the refuge.

Comment: DMCS states, “It should be noted that the USFWS’s own policies require that pest management be part of a refuge’s operations. The U.S. Department of the Interior’s (DOI) Department Manual establishes a Department-wide policy to manage pests in manner that reduces risks from pests and gives full consideration at all times to the safety and protection of humans, including conducting appropriate pest detection and environmental surveillance and monitoring on refuge (571 DM, sec. 1.1 &1.5). Consistent with 517 DM 1, the USFWS’s Service Manual (569 FW 1) establishes policy and responsibilities for pest management activities on refuge lands, including the need to eliminate or reduce impacts from invertebrate pests to achieve management goals and objectives (569 WF 1, sec. 1.4 &1.6).”

Response: Mosquitoes are a natural component of the coastal plain. As such, they are an integral part of the ecosystem for which the Service is obligated to manage. Mosquito management is not a refuge management program, but a refuge use requested by DMCS and permitted under annual SUP requirements. Sections of DOI policy as discussed by DMCS regarding the safety and protection to humans relate specifically to the mode, action, or toxicity of pest treatment, not the pest itself. Section 1.5 “... Bureaus will accomplish pest management through cost effective means that pose the least risk to humans, natural and cultural resources and the environment. The Policy goes on to state in Section 1.5 B., it is the department’s policy to “Give full consideration at all times to the safety and protection of humans and other non-target organisms and resources.” DMCS is required by the Service and the EPA to follow pesticide labels and Pesticide Discharge Permits under the Clean Water Act. Under the Service Manual, Section 569 FW 1, Integrated Pest Management Policy, Establishes policy, procedures, and responsibilities for pest management activities on and off Fish and Wildlife Service (Service) lands. The Service provides (below) the relevant statements within the policy regarding the limitation of adulticide use on refuge:

- Section 1.2 B. – IPM is “a science based, decision-making process that incorporates management goals, consensus building, pest biology, monitoring, environmental factors, and selection of the best available technology to achieve desired outcomes while minimizing effects to non-target species ...” In an effort to minimize non-target effects on-refuge, the Service will permit the use of adulticides as a management tool once the DMCS surveillance program has detected mosquito-borne disease threat on the refuge or within the flight range of vector mosquitoes.
- Section 1.4 D. – Our policy is to, “Use IPM methods to eliminate or reduce impacts from vertebrate and invertebrate pests to achieve site-management goals and objectives.
- 1.6 B. – The Service will manage pests when, “the pest is detrimental to site management goals and objectives; AND.”
- 1.6 C. – The Service will manage pests when “the planned pest management actions will not interfere with achieving site management goals and objectives.”

Sections mentioned above are not mutually exclusive. Mosquitoes are a natural component of the ecosystem and do not interfere with Service goals and objectives for the refuge. Mosquito population management for nuisance purposes does not advance the mission of the Service or purposes for which the refuge was founded. However, the Service will permit the use of adulticides as a management tool once the DMCS surveillance program has detected a mosquito-borne human health threat.

Comment: DMCS implies that there may be an increase in the incidence of vector-borne disease off of the refuge as a result of changes proposed for adulticide treatments on the refuge.

Response: To date the Service has never received any real-time data indicating a mosquito-borne public health threat has existed or presently exists in or around the refuge. EEE and WNV data acquired by the Service covering Sussex County Delaware has come from the Centers for Disease Control (CDC) website. Over the period 2003-2011 there were a total of 2 positive sentinels for EEE, both recorded in 2005. The CDC reports 10 positive sentinels for WNV over the same period, but only one human case of WNV. Specific locations for all positive or negative tests within the county are unknown.

Comment: DMCS states that non-pathogenic health conditions or potential medical complications such as dermal irritations, allergic reactions, and secondary bite/scratch infections should be more relevant when considering the need for adulticide treatments on the refuge.

Response: In rare instances, as little as a single mosquito bite may incite an immune response resulting in anaphylactic shock, as does a bee sting in some individuals. This reaction is truly life threatening; however, no level of mosquito control can guarantee zero bites. The DMCS nuisance threshold is 5 bites per minute for either ground or aerial adulticide treatments. The standard in Maryland is 3 bites per 2 minutes for ground-based treatments, but 12 bites per minute for aerial treatment. 2 landings (slaps) per 2 minutes has been established by the Minneapolis Metropolitan Mosquito Control District. It appears there is no exact threshold that is foolproof.

Native populations of deer flies, green heads, black flies, gnats, and no-see-ums can easily rival mosquito densities and contribute to considerable human discomfort, and potentially medical attention. Nevertheless, DCMS does not mention consideration of ailments derived from these sources of an acute enough nature to justify their control.

Comment: DMCS has indicated that mosquito control may have to be eliminated within the communities outside the eastern border of the refuge because of concern over spray drift.

Response: The DMCS's concern is unfounded. The Draft CCP (chapter 5) and Mosquito CD (Appendix E) currently states; "The refuge has no jurisdiction over mosquito control on lands outside the refuge boundary. The Service recognizes that spray drift will likely enter the refuge from the three neighboring barrier island communities during mosquito control on those lands. Since the State employs best management practices and follows the EPA-approved label directions, the Service expects impacts to refuge resources to be negligible."

Comment: DMCS is concerned about the local economic impact and reduced "quality of life" associated with reducing use of adulticides on refuge.

Response: Mosquito control is a relatively rare practice on the nation's National Wildlife Refuges and Wetland Management Districts (WMDs). Several dozen are permitted to use larvicides, but only approximately 1% of the 584 NWRs and WMDs are currently permitted to allow adulticide treatments prior to documenting a public health threat. A health threat entails some form of local disease documentation in the form of disease incidence (or above average incidence/infection rates) in mosquito pools, sentinels, wild birds, equines or humans.

Prime Hook NWR is not unique in being located close to centers of economic significance, including resorts. Back Bay NWR is located within the city limits of Virginia Beach, VA. Resort patrons enjoy the city and its beaches in part, perhaps, due to an effective mosquito control program that is restricted to areas outside the refuge borders. Chincoteague NWR in Virginia does not permit mosquito control; the town regularly sprays within its own jurisdiction using aerially applied adulticides. Many other refuges permitting larvicides only are located in or near coastal resorts (e.g. Newburyport, MA; Charleston, SC; Sanibel, FL) as well as urban-suburban areas (e.g. Minneapolis, MN; Philadelphia, PA). Based on these facts, it is apparent that mosquito control authorities throughout the country serving high densities of residents and visitors have designed their mosquito control programs to adequately address nuisance complaints, with little apparent negative impact on the local economy. Fire Island National Seashore has established a different mosquito control threshold and strategy than that which is applied to the rest of Long Island.

Comment: Some commenters state; "FWS – in all three of its alternatives – wants to ban eradication of adult mosquitoes."

Response: Under alternative A, current management, adulticides are permitted. Alternatives B and C consider mosquitoes a natural component of the coastal plain. As such, they are an integral part of the ecosystem for which the Service is obligated to manage. DCMS and the Service must face the irreconcilable fact that the state mandate to “eradicate mosquitoes” and the numerous refuge-specific legislative acts and policies under which the Service must adhere are in direct conflict with each other. Thus, the refuge does wish to “ban eradication of adult mosquitoes” ON-refuge for nuisance purposes only.

Comment: The authors of one letter states “FWS is proposing to actively prohibit other agencies, which do care about the health and safety of surrounding communities, from taking action.”

Response: The Service does care about the health and safety of its visitors and the surrounding communities. The Service’s preferred alternative proposes to restrict the use of adulticides unless surveillance data documents a high risk disease threat on the refuge or within the communities surrounding the refuge. The Service does not prohibit DMCS from mosquito control.

Specifically in response to the community’s concerns, the Draft CCP does not advocate the prohibition of mosquito control on the refuge. The Service will continue to permit DMCS to conduct mosquito control through the appropriate use of larvicides and maintenance of existing OMWM sites on the refuge. To facilitate further the reduction of risk to mosquito-borne disease in humans, the Service will modify the draft CCP to indicate a requirement for documentation of a high risk mosquito borne disease on the refuge or within the flight range of the vector species.

Finally, the Service does not have the authority to prohibit other agencies from conducting their respective duties outside the refuge boundary, including the surrounding communities. The Draft CCP (p. 5-111) and Mosquito CD (p. E94) currently states; “The refuge has no jurisdiction over mosquito control on lands outside the refuge boundary. The Service presumes mosquito control will continue in the neighboring communities as prescribed by DMCS.

Comment: “Do not propose the elimination of adulticide use on the refuge (even with an exception for a “declared public health emergency”)...”

Response: The Service will remove the requirement for a “declared public health emergency” as a prerequisite before permitting an adulticide treatment. However, mosquito-borne disease activity must be documented on the refuge or with the flight range of vector mosquito species present on the refuge. Disease surveillance determines that there is a high risk for mosquito-borne disease within the vicinity of the refuge. Because the efficacy and effects of adulticides are variable, adulticides should not be applied broadly without site-specific data indicating a need for control. This data can be used to evaluate a number of factors including environmental conditions, dead bird presence, and human cases to determine adulticides should be used considered. We would only consider application in areas where a pathogen is present and/or mosquito populations thresholds have been exceeded on the refuge that can be effectively treated while minimizing non-target effects.

Comment: “Do not consider increasing the DMCS’s current spray threshold criteria before mosquitocide use can occur on-refuge...”

Response: Under current conditions spray threshold criteria for larvicides will likely remain the same. However, the Service can foresee the potential for adjusting the criteria for larvicides and/or adulticides under the following circumstances:

- Local human disease outbreak whereby thresholds would likely be lowered.
- Introduction of a new mosquito-borne disease to the Delmarva Peninsula area whereby thresholds may be lowered.

- Introduction and proven effectiveness of a human vaccine for one or more of the mosquito-borne diseases present on Delmarva at that time, whereby thresholds may be raised.
- Climate change alters weather patterns and lengthens the growing season producing conditions for annual detection and amplification of enzootic disease, whereby thresholds may be lowered.
- Delaware is hit by a hurricane that precipitates a potential mosquito-borne health emergency, whereby thresholds may be lowered.

Comment: “Do not try to somehow incorporate measures of arbovirus presence or abundance into the DMCS’s spray threshold criteria and decision-making beyond what already exists...”

Response: We recognize that nuisance mosquito species are an ongoing management concern of the State. We believe that the actions outlined in the CCP and the future development of a mosquito management plan will continue to be effective in preventing disease outbreaks and will also provide some ancillary benefits in controlling nuisance mosquitoes. However, we cannot allow the application of adulticides simply to control nuisance mosquitoes. As outlined in the CCP, we can only allow the application of adulticides when there is a documented high risk for mosquito-borne disease within the communities surrounding the refuge.

Comment: DMCS continues, “... attempting such additional incorporation (of arbovirus presence or abundance) will be very impracticable to do (technically or otherwise); will have very little if any meaningful value or utility in the real world; will create undue and unnecessary complications (and logistical nightmares) for how mosquito control is performed on-refuge; and will cause more costs and labors for the State.”

Response: Disease surveillance is a standard tool advocated by the CDC, mosquito control and health agencies across the country. It is considered prudent to do so as an advance warning of a potential or increasing risk of human infection. Surveillance is critical to guiding mosquito management action. Given the historic incidence of mosquito-borne disease in Delaware, mosquito monitoring is critical. Monitoring and surveillance data on mosquito abundance and disease prevalence from the refuge and surrounding areas will help inform mosquito management actions needed on the refuge.

Comment: DMCS continues with their comments, “Per the Service’s Draft “National Mosquito Management Policy” released in October, 2007, the Service is now seemingly attributing an ability for rank-and-file mosquito control programs across the country to detect the presence of let’s say (for Delaware’s situation) EEE and WNV arbovirus on some type of gradient or sliding scale in real-time manner, relative to any need to then possibly undertake some mosquito control actions on-refuge that might quickly be warranted. This simply wouldn’t be the capability or situation in the real world, short of mosquito control programs then having to spend mega-bucks to try to ramp-up and do such.” DMCS continues with discussion of their existing program. “... we operate 24 sentinel chicken stations around the state from July into October to monitor for occurrences of EEE and WNV, with one of these stations near Prime Hook NWR. Each week 2 sentinel chickens per station are tested for presence of EEE or WNV antibodies, with test results reported to us by the Delaware Public Health Lab about one week after chicken blood samples are drawn and submitted to the Lab. We’re thus dealing with arbovirus results per any given station per week that indicate the presence or absence of arbovirus in but only 2 samples or specimens, which is not very conducive at all for making such results into any type of gradient or sliding scale regarding arbovirus presence or abundance, while also being about a week past when the samples were taken.

How we really use the arbovirus results from any given sentinel chicken station is to then determine if we need to increase our local larval or adult mosquito population surveillance efforts for vector mosquito species of concern, to then possibly be enhanced within the area represented by a virus-positive sentinel chicken station, since the State doesn't have the resources or ability to intensively and continuously saturate the entire state with mosquito population monitoring efforts for vectors of concern and for the latter, please be aware that for baseline and operational response purposes, the DMCS also operates a network of NJ adult mosquito light traps at 36 permanent locations around the state, with 3 of these NJ adult light trap stations near Prime Hook NWR). Whenever we have a sentinel chicken sero-convert (i.e. be antibody-positive for EEE or WNV), then to the best of our program's capabilities and resources, we'll quickly but temporarily enhance our larval or adult mosquito population monitoring efforts in the local area, via undertaking additional larval surveys, operating portable CDC adult light traps, undertaking additional adult mosquito landing rate counts, and paying even more attention to the numbers and patterns of local public complaints received seeking mosquito relief. Based upon this additional or enhanced local surveillance of mosquito population levels for vector species of concern, we might then locally undertake mosquito control actions as warranted."

Response: Other vector control programs take a different view: For example, the tiered response thresholds in the phased response plan incorporated into the Grays Harbor County, Washington, Mosquito-Borne Disease Response Plan, specifies the following definition for "Alert Level 3", "Moderate Risk of Human Outbreak:

- Spring, summer, or fall.
- Areas with initial confirmation of mosquito-borne virus activity in birds before August.
- Confirmed equine or human infections.
- Sustained mosquito-borne virus activity in birds or mosquitoes in the absence of human infections

Alert Level 3 – Response:

- Continue activities in level 2.
- Consider implementing adult control if the minimum infection rate (MIR) in vector species meets or exceeds 5 per 1000.
- Focus control efforts where surveillance indicates potential for human risk to increase.

The Grays Harbor Plan continues, "In general, the finding of a positive bird or mosquito pool does not by itself constitute evidence of an imminent threat to human health and warrant adulticiding. Adulticiding will be considered only after consideration of the risk to human health by taking into account multiple factors, including: documentation of the present of mosquito-borne viruses in the area; the abundance and species of the mosquito populations; the mosquito minimum infection rate (MIR); the density and proximity of human populations; the time or year and weather conditions; accessibility to the area where the mosquito vector is located; rapidity of the response as determined by the seriousness of the public health threat, and the potential impact on people and the environment.

Analysis of mosquito pools, as specified by the Grays Harbor Plan, California Mosquito-Borne Virus Surveillance and Response Plan, Florida Mosquito Control Arbovirus Response Plan – West Nile Guidelines for Mosquito Control Responses, Massachusetts Department of Public Health 2012 Arbovirus Surveillance and Response Plan, or the City of Boulder (Colorado) West Nile Virus Mosquito Management Plan to name a few, would give more complete information yielding specifics on the mosquito infection rates and whether secondary or bridge vectors are involved. However, the Service understands the budgetary constraints within which Delaware's program must function, as well as their acquisition of data which is "not very conducive at all for making such results into any type of gradient or sliding scale ..."

Consequently, quantification of data in the form of mosquito infection rates, multiple positive or clustered mosquito pools, or multiple or widespread positive sentinels, representing a threshold for treatment calculated on a “gradient or sliding scale”, will not be required. The Service requires nothing of DMCS other than verification of mosquito-borne disease via one of the standard methods used by DMCS and/or health monitoring programs in the state prior to conducting an adulticide treatment on-refuge.

Comment: Many public health officials and mosquito control professionals share a well-founded perspective that in areas where mosquito-borne diseases are enzootic/endemic, then simply having mosquito population levels for vector species of concern exceed a tolerable threshold level becomes unto itself a type of “public health emergency” or situation, whether officially declared or not, warranting quick and appropriate mosquito control actions. And at a minimum, they take this view in that effective mosquito control actions, based upon concerns for and reactions to vector mosquito population levels alone, will then prevent or reduce the possibility that such a public health situation could morph into a “declared public health emergency.”

Response: The Service recognizes that there are policies and mosquito-borne disease surveillance and control plans from other states and municipalities, advocating less extreme measures that apparently meet their satisfaction, without undue harm to human health.

The State of North Carolina is a prime example. North Carolina with its myriad wetlands, including cedar swamps that are considered hot spots for EEE, does not conduct aerial adulticide treatments unless there is a State of Emergency, usually associated with a hurricane, which permits FEMA to cover the cost. Dare County and the Outer Banks region, home to Cape Hatteras National Seashore, Pee Island and Alligator River NWRs, The Nature Conservancy, State owned lands, and isolated resort communities sandwiched within these public and private lands, does not conduct aerial adulticide treatments. Relatively isolated municipalities receive truck mounted adulticide treatments, however individuals within those municipalities may exercise their own interests and have their properties excluded. Approximately 50,000 acres (20 percent) of the land area within Dare County is within the jurisdiction of the local mosquito control agency.

The North Carolina Mosquito Vector Control Association (NCMVCA) goes into some detail on their website describing the procedures for targeting adult mosquitoes using ground based Ultra Low Volume (ULV) applications. This requires a plan of action to maximize the ground control effort. Basic targeting considerations include the species of mosquito to be controlled, and identifying and prioritizing all the potential treatment (protected) areas, locating productive mosquito habitat within the protected area and evaluating the mosquito production adjacent to the protected areas. NCMVCA indicates the local control agency should plan for up to 21 days of treatments for each mosquito hatch. For planning purposes they also calculate the potential acreage that a single truck can treat, multiplied by the number of trucks available, to determine the maximum operational capacity of the program. “The goal is to minimize human interaction with mosquito populations for the three-week adult mosquito period.”

Comment: DMCS makes extensive comments on the use of limited data regarding the effects of OMWM on obligate salt marsh passerines. DMCS points out weaknesses in the paper the Service cited on the subject.

Response: The Service was made fully aware of the weaknesses in study design and conclusions made some time ago, thus the Service had already inserted the following statement in the draft CCP, “Limitations in the study design prevent any definitive cause-and-effect conclusion, which underscores the need for more research on the effects of open marsh water management on salt marsh obligate productivity.”

DMCS goes on to indicate that during the 1980’s the State, involving DMCS biologists, performed surveys of both Seaside and salt marsh sparrow populations at Bombay Hook NWR; they have provided some of the results in their written comments. The Service apologizes for having overlooked the State study but our historical files contain no final report or publication. However, the Service will insert a synopsis of those results into chapter 5 of the CCP as provided, cited as (DMCS, written communication).

Comment: DMCS takes issue with the following statement in the draft CCP indicating there apparently has never been any quantitative study done on the effects of OMWM on the black rail. “There is concern about the impacts of open marsh water management on black rail, a species of concern associated with tidal high marsh, which prompted the state of Maryland to cease such management in the early 1990s (DNREC 2005). Circumstantial evidence from at least one site in Delaware supports this concern, and the issue warrants further study.”

Response: The Service extracted this information from a document published by the Delaware Department of Natural Resources and Environmental Control, of which the Mosquito Control Section is a part.

Comment: “Do not try to somehow incorporate considerations of natural mosquito predator population abundance into the DMCS’s spray threshold criteria and decision-making...”

Response: The Service agrees. Under certain environmental conditions mosquito reproductive biology is well equipped to overwhelm the limited number of native predators. Determining the threshold at which predators can make a significant impact on mosquito numbers is not feasible. References to mosquito control via native predators will be modified or eliminated. Any requirements of DMCS to monitor mosquito predator populations will be eliminated as well.

Comment: “Do not call for the involvement of federal and/or state public health officials in making the DMCS’s operational spray/no spray decisions...”

Response: Since DMCS is the agency within Delaware that conducts disease and mosquito surveillance, sets thresholds, make the disease notifications, and conducts the mosquito control, the Service will modify the draft text to indicate same.

Comment: To maintain quality of life for neighboring communities while reducing public exposure to hazardous vector-borne diseases, the Service should continue to permit, in the manner currently performed, the judicious application of insecticides for control of larval and adult mosquitoes.

Response: Comment noted, however the Service will modify the current treatment regime to bring it into compliance with refuge-specific laws and policies. Adulticide use for the purpose of nuisance control has been found to materially interfere with and detract from the fulfillment of the Refuge System mission and the purposes of the refuge.

Comment: DMCS indicates, “The Service’s proposed prohibition on aerial adulticiding over some adjacent refuge lands might lead to the need to more frequently have to run our “fog trucks” through town, ..., and thereby then unnecessarily increase the frequency of exposure of community residents and visitors to our adulticide sprays.”

Response: First, note that under alternative B from the draft CCP/EIS adulticides would be permitted, subject to the declaration of a public health emergency. Secondly, this requirement will be changed to detection of a public health threat. Lastly, the Service has examined the DMCS website listing public notifications of truck-mounted or aerial mosquito control treatments by town across Delaware, giving close attention to the towns to the south of PHNWR. It appears that larval mosquito control on PHNWR is remarkably effective as reflected in the number of total adulticide treatments (truck-mounted or aerial) required in the neighboring towns compared to other sites in the county. The Service notes that DMCS appears to use truck-mounted adulticides in the coastal towns routinely, representing considerably more treatments in those locations than the neighboring three communities currently receive. It would appear that DMCS is now distressed at potentially having to adopt the same management regime in the three communities bordering PHNWR as the coastal towns. The Service realizes that a new management paradigm for the region will likely be required, unless mosquito-borne disease is detected consistently in the area of the refuge. This change may result in an increased number of adulticide treatments required in the three communities, but evidence indicates the number of treatments may have to increase several times the current rate to match the number of treatments in the towns on the coast where chemical exposure appears to have yet reached a threshold for concern from the DMCS.

Comment: The DMCS's state enabling statute makes reference to the important need to treat mosquitoes as a nuisance too. This nuisance aspect of state law might also govern the federal government's tort liability relating to possible mismanagement of federal lands on a federal agency's part resulting in a nuisance that harms or injures third parties (in this case in the form of intolerable infestations of mosquitoes originating from refuge lands that then plague or harm people in off-refuge areas). Federal law might actually obligate the Service to consider nuisance principles relative to mosquito control in order to avoid tort liability under the Federal Tort Claims Act (FTCA), whereby a waiver of sovereign immunity for a federal agency might be invoked per the FTCA for a tort claim brought by a state against a federal agency.

Response: Comment noted. Our attorneys advise us that directives concerning the management of federal land in this matter will not subject the Service to tort liability.

Public Use and Access (See also "Hunting")

General

(Letter ID#: 22, 24, 30, 53, 61, 67, 81, 93, 98, 108–Form Letter)

Comment: A few individuals suggested collecting a fee from all refuge visitors. One writes that the refuge "should not allow some to access the refuge free of charge while only hunters have to pay."

Response: We do not currently charge an entrance fee for all visitors since there are many entrances to the refuge, such as off Broadkill Beach Road, Prime Hook Beach Road, Fowler Beach Road, and Slaughter Beach Road. Without having a one-way in, one-way out road, the collection of entrance fees becomes difficult (see also response under "Hunting Fees and Program Costs").

Comment: One individual writes, "Turtle killing is not appropriate or compatible for this refuge. There is no need to allow this turtle killing."

Response: We agree that turtle harvesting is not a compatible use at Prime Hook Refuge. Although we found turtle harvesting appropriate in the draft CCP/EIS, we ultimately found it not compatible and are not proposing to continue to allow it on the refuge. Please see the findings of appropriateness and compatibility determinations in Appendix E.

Comment: The form letter states, "Foord's Landing launch area should be offered [for recreational boating]. It could be restricted to March 1st to October 1st for things like fishing and canoeing. Then it could become available to the duck hunters to use through the fall and winter."

Response: We agree that providing access to Prime Hook at Foord's Landing to hunters, anglers, canoers, and kayakers will enhance their fishing, hunting, and wildlife observation/photography experiences. Please see objectives 5.1, 5.2, and 5.3 under alternative B in the draft CCP/EA for our specific proposals.

Comment: Two individuals ask, "When did [Prime Hook NWR] become a private beach? It was never private, and I don't want to spend my tax dollars on something that is used by few." Another asks, "Is the boat ramp at Oyster Rocks Road public?"

Response: Prime Hook Refuge is open to all members of the public and offers a wide variety of public use activities. The commenter may be confusing the Prime Hook community with the refuge. The Prime Hook Beach community is a private beach. The boat ramp at Oyster Rocks road is public.

Comment: The Delmarva Ornithological Society is concerned that closures for hunting will negatively impact other visitors engaged in non-consumptive uses. They write, "We also feel that the new eastern Prime Hook Creek closures starting in September will interfere with recreational paddlers during peak fall bird migration. Ideally, [it] should be open to paddlers through the end of October..."

Response: We recognize that there can be conflicts between different refuge user groups. Visitor safety is important to us and during recent years, the easternmost four miles of Prime Hook Creek has been closed in early September for safety concerns due to hunting of teal in the adjacent Prime Hook (State) Wildlife Area. We propose to continue with this September closure under the Service-preferred alternative. Access will continue to be closed through mid-March for hunting on federal and state areas during the three seasonal splits of the waterfowl season and for other management purposes. The westernmost portion of the creek will be open year-round. Access for boats and canoes is from the boat ramp located behind Brumbley's Family Park off of Route 1 near Waples Pond.

Also, in response to comments we received, we made several modifications to our hunting program proposal under alternative B in the final CCP/EIS, including not opening Prime Hook Creek to hunting. We highlight these at the beginning of the appendix under "Introduction."

Comment: One individual would like the refuge to expand public access. He writes, "I strongly support opening more of the refuge to the public for hiking, birding, nature observation, and fishing. When I used to be allowed to take birding groups into closed areas of the refuge, this was a big draw for participants."

Response: Thank you. Expansion of wildlife observation opportunities are discussed in chapter 4 of the CCP/EIS.

Comment: One individual asks, "Please define "incidental recreation"? It would appear that this CCP provides for more than incidental recreation (e.g., hunting)."

Response: The National Wildlife Refuge System Administration Act of 1966, 16 U.S.C. §§ 668dd, 668ee, and the Refuge Recreation Act of 1962, 16 U.S.C. § 460k authorize the Secretary of the Interior to permit "appropriate incidental or secondary use(s)" of wildlife refuges, even though "recreational" in character, including hunting, which are "compatible with, and will not prevent accomplishment of, the primary purpose for which the[se] areas were established." 16 U.S.C. §§ 460k, 668dd(d). One example could be canoe trips, which help to facilitate a priority public use in wildlife observation.

Comment: The State of Delaware writes, "Things like signs, maintenance of boat launch areas, trails, road maintenance and even blinds (which could serve as bird observation sites) are needed for activities other than hunting. Is the maintenance of these facilities evaluated in a cost analysis for other recreation programs?"

Response: Under the Service's preferred alternative B, we propose to construct one or more blinds designed for wildlife photography; however these blinds will also offer opportunities for wildlife and nature viewing. The CCP identifies additional funding and staffing required to implement the objectives and strategies for visitor services. Compatibility determinations for all refuge uses evaluate "Availability of Resources" which provides a description of costs and staff necessary for the use.

Comment: Several individuals were concerned with the impacts of road removal on refuge visitors, specifically surf fishers and birders.

Response: Adaptive management is necessary if Fowler Beach Road, from Slaughter Canal to its terminus at the Delaware Bay, is abandoned by DELDOT and donated to the Service. If, upon DelDOT's removal of the existing layer of asphalt overlying unconsolidated fill, the walking trail will serve its purpose of public use until marsh vegetation and hydrologic function reclaim the trail and the formally bisected habitat (Units I & II) function as one unit. When conditions are deemed unsafe, access will not be permitted to Fowler Beach for public use opportunities such as wildlife observation, wildlife photography, and fishing.

Comment: One individual writes, "The section on "south of Broadkill Beach Road", [on page 4-130 of the draft CCP/EIS] is unclear what you plan to do. Are you stating that you will remove the existing (illegal) walkway and replace it with a new one? How...will people get across the tidal gut?...Are you planning to destroy fragile tidal wetlands? Do you intend to do an EA? Do you plan to get permits? In addition, it appears that you will open the trail/tower during the early deer seasons."

Response: We have revised objective 5.2 under alternative B to state more clearly the Service’s proposal for this trail. We propose to either use the existing trail or reroute the trail to the east and construct a smaller, less intrusive boardwalk, trail, and parking area. We do not propose to allow hunting in the area where the trail would be located. We also will obtain all necessary permits and comply will all laws and Service policies.

Wildlife Observation and Photography

(Letter ID#: 24, 28, 56, 65, 80–Petition, 81, 93, 107, 108–Form Letter)

Comment: The authors of one letter and the form letter requested the refuge provide additional wildlife observation and photography opportunities for visitors with limited mobility or disabilities. The form letter states, “There should be viewing areas for people who are not able to walk or walk any distance. There should be areas cleared, so people could view the animals and birds from their vehicles on Turtle Pond Road and the main road leading to the office.” The individual writes, “all...viewing areas...need to provide accommodations for handicapped persons.”

Response: In regards to opportunities for people with limited mobility, in addition to the two existing wheelchair accessible trails, observation platform, and fishing pier, the refuge is proposing under Alternative B to provide an additional wheelchair accessible photography blind. Mobility impaired individuals can also use the existing roadside pull-offs along Broadkill Beach Road and Prime Hook Beach Road wildlife observation and photography opportunities.

As far as clearing new areas for wildlife viewing, we feel as though removing habitat for the sole purpose of increasing wildlife viewing opportunities conflicts with the Service Mission and Refuge’s purposes because the reduction of habitat may decrease the biological diversity and the integrity of the area. Removing habitat fragments the landscape and may reduce the potential viewing of many species that are area-dependent or have specific habitat requirements. We also feel that the refuge has sufficient parking areas, hardtop roads, foot trails, and observation towers available for physical and visual access to wildlife.

Comment: The authors of one letter feel that none of the alternatives provide enough wildlife viewing and photography opportunities. They write, “The CCP needs to consider the addition of more sites for wildlife viewing and photography such as at the end of the roads used for hunting access off of the Prime Hook Road.” The form letter also states, “Hiking trails and photography could be enhanced as needed.”

Response: Objective 5.2 in alternative B, which is the Service-preferred alternative, expands and enhances opportunities for wildlife observation and photography by adding seven new trails totaling 3.7 miles throughout all four refuge management units on existing maintained trails or interior refuge roads, bringing the total number of trails to 14 and 9.9 miles. These new opportunities almost entirely coincide with existing hunter access points, including those off of Prime Hook Road. While seasonal closures will occur to reduce conflict between recreational uses, ensure visitor safety, and/or minimize wildlife disturbance, these are nonetheless increased opportunities above what is currently offered.

Comment: The authors of one letter feel the analysis of impacts of each alternative on wildlife observation and photography opportunities is incorrect. They write, “...Alternatives B and C claim that there will be better opportunities for bird watching and wildlife photography than [under] the current situation – Alternative A. [However,] there was much more opportunity for wildlife and bird watching and photography prior to the breaches occurring. At a minimum, the CCP needs to support recreating the environment that was present before the breaches occurred regarding wildlife and bird watching and photography.”

Response: Our analysis of wildlife observation and photography opportunities compared the number of opportunities and public use infrastructure under each of the alternatives. Our intent was not to compare the exact species of wildlife that visitors might see under each alternative. We feel that alternative B proposes to provide more opportunities for wildlife observation and photography through the addition of trails and a wheelchair accessible photography blind. The breaches obviously have made changes in conditions at the refuge, and this fact may require adjustments and altering expectations on the part of frequent visitors and residents.

Comment: The Delmarva Ornithological Society writes, “With the anticipated abandonment of the eastern section of Fowler Beach Road by DELDOT, Delmarva Ornithological Society urges the USFWS to pursue all reasonable alternatives to provide access to birders and other user groups to...Units I and II. An observation tower would be ideal, and [we could help] advise on placement and construction. We are aware of the challenges presented by the unprotected nature of the area, but feel that the quality of birding and wildlife watching provided by the overwash areas is of such unique values that every effort should be made...to provide safe and adequate access...In addition, it is important that the Delaware Shorebird Project and other researchers have safe access to [monitor shorebirds and beaching nesting birds]. Retaining the prime viewing opportunities at Fowler Beach should be a focal point of the Bayshore Initiative, and we urge the Service to work with stakeholders and the State...to continue to provide access...”

Response: We agree the Fowler Beach provides some quality wildlife observation. However, it would be environmentally and fiscally irresponsible of the Service to construct another viewing platform in the area that is dynamic without careful consideration. The previous tower was constructed in 2006 and was all but destroyed by 2010. We will continue work with our partners to try and come up with the best possible solution.

Comment: One individual is concerned that popular birding locations on Fowler Beach Road will be lost when the road is removed. He also writes, “The Old Shop Road should also be opened as soon as possible.” Another similarly states, “The observational uses and trail uses envisioned in this section will be greatly diminished if Fowler Beach Road and Primehook [Road] are compromised. In fact, not only would access be limited, but parking areas indicated as needs for these uses will be difficult to create if the terrestrial acreage continues to be compromised as would seem to be indicated by Alternatives A or B.”

Response: We agree that Old Shop Road should be opened as soon as possible. We also acknowledge the Service may have to scale back its proposals for public use facilities along Fowler Beach and Prime Hook Roads. We may need to alter our existing plans depending on a number of unpredictable factors such as:

- Additional storm damage to the roads and associated parking areas.
- Continued subsidence of land-base.
- Success or failure of habitat restoration.
- Potential accelerated sea level rise.
- DelDOT maintenance schedule.

Specifically, regarding Fowler Beach Road, National guidance has been developed to implement some of the key provisions of the 1997 amendments to the Refuge Administration Act. This includes the Biological Integrity, Diversity, and Environmental Health policy (601 FW 3). Consistent with the Refuge purpose(s), this policy provides for maintenance of restoration of healthy, functioning biological communities composed of native species and habitat comparable with historic conditions. The policy favors refuge management, which restores or mimics natural ecosystem processes or functions. The Service believes the removal of the road would assist in the restoration of Unit II.

Wildlife observation is a refuge use subject to compatibility (603 FW 2). The Compatibility policy states that a use would not be compatible if the use conflicts with maintenance of refuge biological integrity, diversity, and environmental health. If a decision is made to remove the road, that decision would be based on our efforts to restore natural hydrology of the marsh.

Comment: One individual writes, “There are additional “hunter” trails on Deep Branch Road, why not open to birders/hikers?” He also asks. “Will these new trails be maintained? Or will they be left overgrown and unmaintained as are the existing trails?”

Response: The preferred alternative does propose opening a trail on Deep Branch Road for wildlife observation, please refer to objective 5.2 under alternative B in the CCP/EIS. Once open, we would maintain these trails, as well as continue to manage the refuge’s other existing trails.

Comment: One individual writes, “The maximum acreage impacted by your trails is about 30 acres. How is this more disturbing and disruptive and negative to wildlife than proposed expanded hunting?”

Response: Trail use can and does impact wildlife. However, we anticipate the impacts to be minor. We would continue to monitor the refuge for potential impacts and would take steps to limit access or close areas to protect refuge resources, if necessary.

Comment: One individual states, “Concerns about safety-large exposed roots-were ignored (Blue Goose Trail)... There will only be a matter of time before someone is hurt.”

Response: We are aware of the exposed roots on the Blue Goose Trail. The refuge’s brochure, signage, and website alert the public to the potential tripping hazard. The Blue Goose Trail offers exceptional birding opportunities.

Comment: One individual is concerned that proposed new trails would “fragment valuable habitat, including wetlands.”

Response: Although the Service’s preferred alternative proposes to open seven new trails totaling 3.7 miles, we propose to construct these new trails using existing and already maintained trail and road networks. The total number of refuge trails would 14 (total of 9.9 miles). Two of these trails may need improvements aside from already occurring maintenance. We will evaluate the existing trail infrastructure on Vergie’s Pond and decide whether to use it or reroute the trail to the east and construct a smaller, less intrusive boardwalk, trail, and parking area. The proposed trail off Slaughter Beach Road uses an existing interior road that will require the removal of some vegetation for the trail and parking area.

Comment: One individual writes, “The proposed Broadkill Dike Trail is an excellent idea; however it could and should be expanded to Petersfield Ditch. A portion could be closed during deer hunting season. How does necessary maintenance affect proposing opening of the trail? Will it take over 15 years? This a 15 year plan?”

Response: The proposed Broadkill Dike Trail, which is 0.2 miles long, will be open as a new hiking trail and will allow visitors to access the Black Farm Trail from an existing parking area. Since there are already 6 miles of hiking trails in this area covering various habitats, the Service did not feel that extending this trail to Petersfield Ditch would offer anything different than what is currently available to refuge visitors.

Comment: One individual requests that the refuge “Complete and open the observation platform on Vergie’s Pond and the walkway to the platform from the east end of Broadkill Road.”

Response: The Service proposes to evaluate the existing trail infrastructure on Vergie’s Pond and decide whether to use it or reroute the trail to the east and construct a smaller, less intrusive boardwalk, trail, and parking area as discussed in Objective 5.2 of alternative B.

Comment: One individual asks if the easternmost and westernmost trails near Prime Hook Creek are open or closed on Sundays. He also states that the public will need to be advised of any trail closures during hunting seasons.

Response: Opportunities for wildlife observation and photography on refuge trails will be expanded under the Service-preferred alternative. Potential conflict between refuge users is expected to be managed through seasonal closures, which are discussed in detail by area in Objective 5.2 in alternative B. Specifically, Prime Hook Creek will be open with a seasonal closure of Eastern Prime Hook Creek (from Foord's Landing to headquarters ramp) every day from September 1 through March 15. The western portion to Prime Hook Creek will remain open daily throughout the year. The refuge will continue to post trail closures on its website and visitor center as needed.

Comment: One individual requests that the refuge enlarge the three pull-offs on Broadkill Beach Road due to safety concerns (e.g., they are too narrow and the drop-off is too steep). Another individual suggests that the refuge "build a handicap accessible wildlife observation platform for the marsh on the Prime Hook Road because people stopping to look at wildlife block the road/make it unsafe."

Response: Roadside viewing opportunities provide visitors unique opportunities to watch or photograph wildlife using their vehicle as a "blind." The Service does not see any advantage of constructing a roadside wildlife observation platform since all individuals with or without disabilities can safely use these pulloffs. Because wetlands border roadside vehicle pull-outs, enlarging these areas would require obtaining necessary permits and possible mitigation. Proper use of these pullouts provides visitors with enjoyable and safe outings.

Environmental Education and Interpretation

(Letter ID#: 28, 107)

Comment: The State of Delaware suggests the refuge install educational signs at the end of Fowler Beach Road to inform visitors of impacts of human disturbance on breeding and foraging shorebirds."

Response: The Service agrees that providing interpretive opportunities on the impacts of human disturbance on breeding and nesting shorebirds creates a great opportunity to inform and instill a greater appreciation for these resources to refuge visitors.

Comment: One individual suggests the following, "Explore the opportunities to provide a cooperative education experience for college students, in conjunction with local universities and colleges."

Response: We agree. The refuge has established strong relationships with some local schools, colleges, and universities, and we hope to partner with others to expand our environmental education program. The environmental education component of the visitor services step-down plan will help us address this.

Comment: One individual does not support developing an interpretive auto tour route at this time. He writes, "Due to the disconnected road system around the Refuge, I feel this may not be a good use of financial resources, except in the area around [Refuge Headquarters]."

Response: We propose in Objective 5.4 of the Service-preferred alternative to develop interpretive auto tour and hiking routes using advanced technology (radio, compact disc, cell phone, or downloadable programming).. We do not plan to physically connect these roads into one drivable loop, but rather enhance opportunities for visitors to increase their understanding of the natural and cultural resources of the refuge along each of these roads using new technology that is now readily available and inexpensive.

Comment: One individual feels that the current Visitor Contact area does not have enough room for new panels and displays" and states that he supports developing new displays as proposed under alternative C in the draft CCP/EIS.

Response: We will be updating or replacing the existing kiosks and signs on the refuge. Objective 5.4 of the Service's preferred alternative further states that we will increase and enhance interpretive materials and programs about natural and cultural resources. We agree that space is limited in the Visitor Contact area, and this area must be used efficiently. We appreciate the recommendations for additional programs and outreach materials. We will consider them as we develop our visitor services step-down plan.

Fishing and Crabbing

(Letter ID#: 22, 28, 36, 62, 107)

Comment: One individual supports the proposed changes to fishing and crabbing under alternative B.

Response: We thank you for your support of our preferred alternative.

Comment: One individual writes, "Commercial fishing is not compatible with [taking] the fish the birds need to eat to live. [S]top [all] commercial fishing at this site."

Response: We found commercial fishing and crabbing not appropriate on Prime Hook NWR and do not propose to allow it on the refuge. Please refer to Appendix E, "Compatibility Determinations and Findings of Appropriateness" in the draft and final CCP/EIS.

Comment: One individual writes, "Just to remind you...you are required to follow the State of Delaware...fishing laws in the booklets."

Response: According to U.S. Fish & Wildlife Service policy (605 FW 2.3), regulations permitting hunting and fishing within the Refuge System must be, to the extent practicable, consistent with State fish and wildlife laws, regulations, and management plans.

Comment: The State of Delaware recommends, "If Fowler Beach is opened to night fishing; provision should be made for increased enforcement presence during that time."

Response: We agree and plan to increase law enforcement presence during that time.

Comment: One individual writes, "The salt water intrusion from the Delaware Bay has brought blue crabs and crabbers position themselves in culverts along [Prime Hook] Road, parking dangerously."

Response: The Refuge Improvement Act of 1997 identifies fishing as one of six priority, wildlife-dependent public uses that are to receive enhanced consideration in refuge planning. The interest in crabbing has grown in recent years on the refuge. We propose to open fishing and crabbing along Prime Hook Beach Road as discussed in Objective 5.3 in Alternative B. Parking is only allowed on existing pulloffs and access is restricted to the pulloff area to provide safety for visitors and to avoid traffic issues. The refuge will consider fishing and crabbing along Broadkill Road and Fowler Beach Road in the future if there is a demand and if visitor safety and adequate parking can be guaranteed.

Dog Walking

(Letter ID#: 22, 24, 28, 29, 81, 90)

Comment: Many individuals commented on dog walking. One felt it was contradictory to allow field dog trails, but not dog walking. The remaining individuals were against the proposal to close Prime Hook NWR to dog walking. One felt that such a closure would “exclude a great number of casual walkers and nature lovers” and felt that the refuge should mitigate against wildlife impacts from dogs by requiring dogs to be leashed, prohibiting dogs from sensitive areas (e.g., seasonal closures of shorebird nesting areas, increased monitoring, law enforcement, and signage). Another felt that the impacts of dog walking were similar and no more adverse than those from humans walking on trails, hunters walking off trail, and using hunting dogs. The third states that he has been visiting the refuge for years and has never seen any negative incidents with dogs and asks “What negative impacts have you noted at Prime Hook? What problems have you documented?” He asks that the Service rewrite the compatibility determination to allow dog walking, as long as dogs are leashed and owners pick up their dogs wastes. He also asks, “How does walking [dogs] on refuge trails impact shorebirds?”

Response: Dog walking was found to be not appropriate in appendix E of the refuge’s final CCP/EIS. Dog walking does not support the biological and public use goals and objectives for Prime Hook NWR, as defined in the comprehensive conservation plan for the refuge. These goals and objectives emphasize conserving habitats and species of conservation concern and offering priority, wildlife-dependent recreational uses to help visitors build an appreciation and understanding for the refuge’s natural and cultural resources. Dog walking also does not support the refuge’s purpose as an “inviolable sanctuary... for migratory birds.” Allowing dog walking on the refuge may prevent us from achieving our goals, objectives, and the refuge purpose because the presence of dogs can negatively impact migratory birds and other wildlife species, either directly through predation or indirectly by displacing wildlife species. Many wildlife species perceive dogs as natural predators, which causes them to react to the presence (by visual and scent) of dogs. Common reactions include vacating and avoiding areas disturbed by dogs. Domestic dogs can also depredate native wildlife and displace native migratory bird species from their native habitats. Allowing dog walking may also conflict with public use goals and objectives because the displacement of wildlife by dogs could materially interfere with wildlife observation, a priority public use of the refuge. There are also many sites throughout the surrounding area that provide opportunities for accompaniment by a pet.

The use of (dog) retrievers by waterfowl hunters and upland game hunters engaged in legal hunting activities on the refuge is allowed because hunting with a retriever is a much less frequent occurrence than general dog walking, which presumably could occur daily and result in far greater negative impacts to wildlife and habitat. Furthermore, hunting is a priority public use of the National Wildlife Refuge System, and the use of retriever dogs helps to facilitate the use while minimizing potential negative impacts during hunts.

Many individuals walk their dogs along the beach, which does affect shorebirds. If the Refuge is to have a successful beach nesting area, we must eliminate dog walking on the beach. The elimination of dog walking would benefit migrating and nesting shorebirds along the beach.

Also, although we did find field dog trials appropriate in the draft CCP/EIS, we ultimately found field dog trials not compatible and are not proposing to allow this use on the refuge.

Comment: One individual asked, “Page 4-22 refer to “commercial” dog walking as inappropriate. Are you stating here that recreational dog walking will be permitted?”

Response: The refuge proposes to eliminate dog walking whether it is recreational or commercial. The statement has been clarified in the final CCP/EIS.

Other Recreational Activities*(Letter ID#: 24, 29, 34, 81, 93)*

Comment: One letter suggests, “Beekeeping should be allowed in controlled areas [on the refuge].”

Response: Bee keeping manages colonies of the European honey bee, which is an exotic species. Colonies have been declined the past 30 years, due to mites, disease, habitat loss, and a decline in beekeepers. However, there are about 4,000 species of native bees north of Mexico, of which 200 have been found in Delaware. Native bees are a vital component for the pollination of native flora, which are four times more attractive to bees than non-native plants. Currently, much effort is being given to promote these native habitats, particularly in Delaware (<http://dda.delaware.gov/plantind/pollinator.shtml>; accessed November 2012).

Bee keeping has been allowed on the refuge in the past; however, it is not a priority public use. Subject to compatibility, it does not, as a standalone activity, contribute to the fulfillment of refuge purposes, and promotes an exotic species. This use would detract from the refuge staff’s responsibilities to protect and manage fish, wildlife, and plants and their habitats, as well as detracting from administering priority uses. See the finding of appropriateness and compatibility determination in Appendix E.

Comment: Several respondents commented on the impacts of expanded hunting on canoeing and kayaking opportunities on the refuge. One letter states, “You have effectively wiped out much of the canoe/kayak areas with your expanded hunting program. You did not address the impact on these visitors or the economic loss to the community. At least several hundred people will be impacted [including local businesses].”

Response: Based on responses from the CCP public comment period, we have revised the final CCP/EIS to not open hunting on Prime Hook Creek and to continue allowing year-round access to visitors for uses such as wildlife observation, wildlife photography, and fishing to the western 4 miles of Prime Hook Creek.

Hunting**Hunting - General***(Letter ID#: 9, 13, 16, 22, 28, 29, 32, 36, 43, 45, 46, 49, 53, 60, 64, 66, 67, 71, 80–Petition, 81, 92, 97, 98, 100, 104, 105, 106, 107, 108–Form Letter, S14, S18)*

Comment: PEER stated that the broad-spectrum hunting expansion across all habitats of the refuge landscape contradicts the very specifically worded “Prime Hook purpose” that wildlife-oriented recreational development be “incidental” and strongly reverses the primary NWR system refuge use of conservation of wildlife. The operative word is “incidental” as it relates to the alternative B hunting expansion development, where hunting is not taken and defined as occurring concurrently with other primary uses as a minor accompaniment, or as being a minor, casual or subordinate in nature to the primary refuge use of conservation.”

Response: As stated earlier, Sections 5(c) and (d) of the National Wildlife Refuge Improvement Act states “compatible wildlife–dependent recreational uses are the priority general public uses of the NWRS and shall receive priority consideration in planning and management; and when the Secretary [of the Interior] determines that a proposed wildlife-dependent recreational use is a compatible use within a refuge, that activity should be facilitated, subject to such restrictions or regulations as may be necessary, reasonable, and appropriate.”

In addition, the expansion of the refuge's hunt program is responsive to Executive Order 13443, "Facilitation of Hunting Heritage and Wildlife Conservation." The purpose of this order is to direct Federal agencies that have programs and activities that have a measurable effect on public land management, outdoor recreation, and wildlife management, including the Department of the Interior and Department of Agriculture, to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat."

Comment: One individual writes, "Blaze orange or hunter orange is a state requirement. Additional rules were added a number of years ago that required the orange not be faded and not be camo. Again, this is a safety concern."

Response: We agree that requiring individuals to wear hunter orange in firearm hunting areas during hunting season is important for safety and require hunters on the refuge to comply with this State requirement. We specify in the refuge-specific hunting regulations in Appendix C that "any time the State hunting regulations require that hunters display hunter orange, the material must be solid-colored. We prohibit hunter-orange camouflage materials."

Comment: One individual suggests writing separate compatibility determinations for each hunt. He writes, "Evaluating each hunt separately will show the weakness of some hunts."

Response: According to refuge compatibility policy, a use may be an individual use, a specific use program, or a group of related uses. The policy further states that whenever practicable, the refuge manager should concurrently consider related uses or uses that are likely to have similar effects and associated facilities, structures, and improvements, in order to facilitate analysis of cumulative effects and to provide effective public review and comment. For example, birding field trips, canoe trips, and nature walks are three different uses related to the wildlife observation program, and therefore evaluated in one compatibility determination. Similarly, each hunt is evaluated for its own specific effects, but also grouped together as part of the hunting program, and evaluated in the hunt plan, the hunting compatibility determination, and the CCP/EIS. Viewing all of the uses at once assists in consideration of potentially competing uses, allows us to group uses in a way that makes sense, provides a holistic view of the entire program, and provides a more concise opportunity for public review and comment. The 1997 National Wildlife Refuge System Administration Act stipulates that hunting (along with fishing, wildlife observation and photography, and environmental education and interpretation), if found to be compatible, is a legitimate and priority general public use of a refuge and should be facilitated. The Administration Act authorizes the Secretary to allow use of any refuge area for any purpose as long as those uses are compatible.

Comment: One individual feels that the refuge should stop allowing upland game, small game, and other migratory bird hunting. He writes, "The number of hunters and success cannot support this entire program."

Response: The 1997 National Wildlife Refuge Improvement Act identifies hunting as one of six priority public uses to be facilitated on Refuges. Hunting is a compatible use and consistent with the purposes of Prime Hook NWR.

Comment: One individual suggests that the refuge not allow hunting scouting by boat because he feels it is "counterproductive to quality hunting because of too much disturbance."

Response: Taking time to scout the refuge and learn its areas not only minimizes risk, but also makes for more successful outings. For waterfowl hunting, enhanced opportunities for scouting will only be allowed on Sundays immediately prior to each of the duck season splits to minimize disturbance to wildlife.

Comment: One individual writes, "How many other refuges have interpreted the Executive order on hunting as you have and opened up such large portions of the refuge to hunting? This EO (2007) was geared to opening up more hunting areas on BLM lands. In addition, an EO does not trump compliance with RIA."

Response: The Executive Order directs the Department of the Interior and its component agencies, bureaus, and offices, which includes the U.S. Fish and Wildlife Service “to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat.” The Service must remain compliant with its legislative mandates such the Refuge Improvement Act of 1997. In the preferred alternative, we propose to expand, enhance or maintain opportunities for all of the priority public uses, and not solely hunting.

Comment: The State of Delaware writes, “The Service should ensure that Delawareans of all ages and physical abilities have adequate access to hunting opportunities on the Refuge that are compatible with management on adjacent state lands and with non-consumptive public uses on the Refuge. The form letter also asks the refuge to consider hunting opportunities for all ages, writing “More emphasis on youth hunts for both waterfowl and deer hunting. Youth are the future.”

Response: We agree and are committed to promoting youth hunting opportunities. We have provided hunting opportunities and access for hunters of all ages and abilities on the refuge. As described in Chapter 3 of the draft CCP/EIS, the refuge has a disabled hunt program, participated in young waterfowlers program, and provides youth hunts for deer and waterfowl. The Service’s preferred alternative builds on those current opportunities. To the extent possible the Service and the State have a consistent hunt program. (Also see the section on “Hunting for Individuals with Disabilities” below).

To encourage youth participation in hunting activities, the Service will collaborate with State partners and NGO hunting organizations to develop hunter training programs that instruct beginning hunters in the knowledge and skills necessary to become responsible, respected individuals who strive to learn all they can about the species being hunted and to become knowledgeable in firearms safety, hunter ethics and wildlife conservation. The Service will also develop mentored hunting programs and offer programs developed by NASP (National Archery in the Schools Program) to encourage family participation in archery.

Comment: One individual writes, “Does the refuge receive some reward for opening the highest percent of the refuge in the region to hunting? Who benefits from the increased hunting acreage?” He adds, “The refuge’s title should be changed to the Prime Hook National Hunting Preserve.”

Response: Hunting is one of the priority public uses mandated by the National Wildlife Refuge System Improvement Act of 1997 and hunters will benefit from the expanded hunting acreage and additional hunting opportunities. Wildlife observation and photography are also priority public uses and non-consumptive visitors will benefit from new opportunities from the 14 trails covering 9.9 miles on the refuge, of which seven are new totaling 3.7 miles.

Comment: One individual writes, “Just to remind you...you are required to follow the State of Delaware Hunting...laws in the booklets.”

Response: According to U.S. Fish & Wildlife Service policy (605 FW 2.3), regulations permitting hunting and fishing within the Refuge System must be, to the extent practicable, consistent with State fish and wildlife laws, regulations, and management plans.

Comment: The State of Delaware and one individual are concerned with the Service’s definition of quality hunting. The State writes, “The connotation for quality as written in the CCP seems to indicate greater success of harvesting waterfowl. However, for many hunters, quality may be just the fun of being in the marsh for the day with family or friends. Harvest success may have very little to do with the quality of the experience whereas accessibility and opportunity may be of greater importance. So we recommend striking the term quality due to its subjective nature.”

Response: The Service agrees that the term “quality” is a subjective term since there is a substantial diversity in what people are seeking in outdoor recreation, such as hunting. A quality hunting experience to one hunter may be completely different to another hunter. However, the term “quality” is emphasized in the Service Manual, Chapter 605 FW 1, General Guidelines for Wildlife-dependent Recreation by stating that, “The overarching goal of our wildlife-dependent recreation policy is to enhance wildlife-dependent recreation opportunities and access to quality visitor experiences on refuges while managing refuges to conserve fish, wildlife, plants, and their habitats.” Throughout the CCP, the Service uses the term “quality” not to indicate that proposed changes will guarantee an increase in harvest success, but rather to emphasize enhanced opportunities or access such as increased hunting acreage, new opportunities for free-roam hunting, increased hunt days, decreased fees, and turkey hunting opportunities, and many others explained in Objective 5.1 of Alternative B.

Comment: One individual asks, “Are you going to cut fire paths (for hunters) as you do for the bird watchers?”

Response: We are unaware of any “fire paths” cut for other priority uses of the refuge and do not plan to create any.

Comment: One individual requests that the refuge clarify the regulations on outboard motors. He writes that there is a “misconception among hunters that the 30 horsepower regulation for outboard motors does not apply to mud motors.”

Response: We appreciate the comment.

Comment: Many individuals support the refuge’s existing hunt program under alternative A, and do not support the proposed changes under alternative B. On the other hand, another writes, “I support reduced spending of refuge manpower and dollars by phasing out fixed hunting structures and simplifying the hunt program.”

Response: We appreciate these comments. Based on comments we received, we have made several changes to our proposed hunting program under alternative B in the final CCP/EIS. We highlight these at the beginning of the appendix under “Introduction.”

Comment: The authors of one letter write that they do not support “the use of ammunition that pollutes our environment.”

Response: Comment noted.

Comment: One individual writes, “Have you evaluated the impact of opening the Millman Tract to [deer and turkey hunting on] the homes at Grant’s Way?”

Response: The Millman Tract—which is an area north of Route 16 and is adjacent to homes in Grant’s Way—was previously hunted under private ownership up until the Service purchased it in 2001. Because of this, we do not expect the proposed hunting activity to have adverse impacts on these homes.

Comment: The State of Delaware writes, “One of the objectives listed by the Service in the CCP was a reduction of disturbance to waterfowl. We contend that the Service may actually increase disturbance by mandating free roam hunting, especially the altered habitat state of the wetland units (relative to waterfowl hunting) and the unfamiliarity with areas by some hunters.”

Response: Free roam hunting, or not restricting to hunters to a fixed location, will not be unique to Prime Hook NWR. This type of hunting opportunity for deer has been permitted under current management for years with negligible impacts in the salt-marsh areas in Unit I. Free roam hunting is also allowed on some State-managed areas including the salt-marsh habitats on the Little Creek Wildlife Area near Port Mahon, C & D Canal Wildlife Area, portions of the Milford Neck Wildlife Area, Nanticoke Wildlife Area, and others. Free roam hunting areas on the refuge may increase the potential for waterfowl disturbance; however these disturbances are mitigated by providing 3,185 acres of sanctuary (no-disturbance areas) in Units II, III, and IV, hunting no more than 40% of the refuge as mandated, and limiting hunting days

(four days per week) and hours (3PM closure). Free roam hunting of waterfowl is also permitted in some ponds in an area south of Prime Hook Beach Road. The Service also anticipates that the number of hunters in Unit I will be limited by access due to the small boat ramp and parking area on Fowler Beach Road. Disturbance is also decreased to waterfowl by closing the Oak Island Area in Unit II, the area south of Fowler Beach Road in Unit II, and disabled deer hunting area in Unit IV in late November to hunting and by closing the Deep Branch Trail to non-consumptive users from September 1 through March 15.

Comment: PEER writes, “In the past three years, the Service has physically destroyed more than 50% (approximately 4,000 acres) of its freshwater emergent marsh. Now, the Service’s alternative B proposes to use open saline lagoon areas the Service has recently degraded as waterfowl sanctuaries and to march battalions of hunters onto the last healthy marsh remnants remaining on the refuge.”

Response: We respectfully disagree. Repeated Nor’easter storm events in 2009 and 2010 overwashed the duneline along Unit II, impacting the artificially managed freshwater impoundments south of Fowler Beach Road. The Service proposed to fill the breaches to restore the duneline, as a short-term measure to slow erosion and to allow careful analysis of management options. The size of these breaches elevated the situation from that of minor dune repair to major management activity. Thus an Environmental Assessment was prepared to conduct dune repair one more time. Legal challenges delayed the dune repair until 2011. By the time the repair was conducted, Hurricane Irene in August 2011 had reduced the amount of on-site material available significantly. The repair was conducted by the Shoreline section of DNREC to the best of their ability, but the breaches reopened just weeks later.

Furthermore, we are providing 3,185 acres of sanctuary area (no-disturbance areas) for waterfowl and other wildlife that will serve as feeding and resting areas. Specific descriptions of these sanctuary areas can be found in chapters 4 and 5 of the CCP/EIS, but are roughly Unit II, the lower half of Unit III, and Unit IV. Habitat conditions are in a state of transition and the Service anticipates areas affected by storm erosion and flooding to be restored to salt marshes through restoration efforts proposed in Objective 3.1 of alternative B. Hunting of snow geese throughout the main hunting season and during the conservation order will be an important and necessary management tool to reduce snow goose population numbers and to minimize consumption of new vegetative growth resulting from restoration efforts.

Providing access for hunters is critical to their success. Lastly, the Service does not anticipate “battalions of hunters” across the refuge landscape. In the lottery waterfowl area, the Service limits the number of hunting parties through the use of designated blind sites. In free roam areas, hunters are limited by the available access for parking and boat launching and by hunters thinning themselves out as a way to minimize conflict with other hunting parties.

Comment: The State of Delaware asked why the Service needs to prepare a hunting compatibility determination along with the CCP.

Response: Statutory authority for Service management and associated habitat/wildlife management planning on units of the Refuge System is derived from the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd-668ee). The Refuge Improvement Act provided a mission for the Refuge System and clear standards for its management, use, planning, and growth. The Act recognizes that wildlife-dependent recreational uses – hunting, fishing, wildlife observation and photography, environmental education, and interpretation – are legitimate and appropriate public uses of National Wildlife Refuges. However, these refuge uses must still be evaluated by each refuge with regard to compatibility, which includes considerations of several factors. Sections 5(c) and (d) of the National Wildlife Refuge Improvement Act states “compatible wildlife-dependent recreational uses are the priority general public uses of the NWRS and shall receive priority consideration in planning and management; and when the Secretary [of the Interior] determines that a proposed wildlife-dependent recreational use is a compatible use within a refuge, that activity should be facilitated, subject to such restrictions or regulations as may be necessary, reasonable, and appropriate.” Through this required compatibility determination process, hunting has been found to be compatible on Prime Hook NWR.

Comment: The State of Delaware recommends “that the Service reconsider their selection of areas for expanding hunting and incorporate more hunter input into the selection of proposed hunting areas.”

Response: The CCP public comment period offered seven information gathering opportunities which provided in detail the expanded hunting opportunities in the Service’s preferred alternative (alternative B). The well-publicized public meeting and open houses held in Milton, Milford, and Lewes, Delaware, were an adequate and acceptable form of public involvement. Individuals had several options for providing comments directly to staff for consideration. In the final CCP/EIS, changes to hunt areas were incorporated that were based on feedback received from hunter comments. We highlight these changes in Objective 5.1 of the final CCP/EIS, Appendix C, and at the beginning of this appendix under “Introduction.”

Comment: One individual writes, “Hunters will trespass and take their chances with the adjacent landowners. Opening of this area will result in trespass to the other islands, which are supposed to be closed. You do not address potential impact to a federally-identified archeological site located on Oak Island.”

Response: We respectfully disagree. The Service believes the vast majorities of hunters are law-abiding citizens and will respect neighboring landowner’s property rights.

Although the refuge provides hunting maps and refuge-specific regulations, it is ultimately the responsibility of the hunter to know and obey them. Unfortunately, not all do. The Service will ensure that refuge boundaries are, and continue to be, properly posted to notify both refuge visitors and private landowners. Private landowners will be encouraged to contact either refuge and/or State law enforcement officers if trespassing incidents occur and every effort will be made to respond in an efficient and timely manner. The Service also encourages private landowners to post their own property, although we have designed hunting zones to be administered in a safe manner, and have buffers around communities and roads. Coordination with DNREC advises that there are already sufficient laws and regulations in place to discourage boundary shooting. Furthermore, neighboring landowners would benefit by having easy access to designated areas open to hunting on the refuge.

Hunting is not new to this area. Much of the private property adjacent to the refuge is already being hunted. These areas include: Unit I along the western boundary, Unit II along Cods Road and Fowlers Beach Road, Unit III along the southeastern portion near Broadkill Beach, along Prime Hook Creek, and in the state managed Prime Hook Wildlife Area, and Unit IV along the Broadkill River, Petersfield Ditch, and in salt marshes on the western boundary. Hunting has been open in all four units of the refuge and Unit I has been hunted for years by free-roaming hunters seeking deer and upland game in refuge salt marshes.

Furthermore, a designated safety zone has been in effect for year in Unit I bordering the community of Slaughter Beach. No hunting is allowed in the marshes of Unit II bordering the Prime Hook Beach community. In Unit III along the Prime Hook Beach and Broadkill Beach communities, waterfowl hunters must hunt from designated blind sites. In Unit IV along the Broadkill Beach community, disabled hunters must hunt from fixed ground blinds.

Comment: The Humane Society of the United States writes, “Alternative B would result in destructive visual and auditory disturbance to wildlife, and degrade the refuge habitats. Because of the geography of PHNWR there is virtually no area of the refuge that is not susceptible to the auditory and visual disturbance that would be caused by the expanded hunting proposed in Alternative B. These effects, in turn, make PHNWR no sanctuary at all for these animals.”

Response: We agree, in part, with the contention that “there is virtually no area of the refuge that is not susceptible to auditory and visual disturbance ...” The refuge is relatively narrow and is crossed by several county roads. Some days auto traffic on Route 1 can be clearly heard a couple miles to the west, aircraft fly overhead, patrons of the refuge drive the county roads, birders walk the trails, refuge staff run tractors and airboats as part of their management program, residents drive to and from the

neighboring communities to the east, beach enthusiasts travel to the public beaches, kayakers paddle the creek, crabbers park along the roads, and a limited number of people hunt on or adjacent to the refuge. Unfortunately, this is the nature of NWRs in the heavily populated eastern United States. Most refuges on the east coast do not harbor qualities that we generally think of as constituting “wilderness” (e.g., quiet, or solitude). The term “sanctuary”, as used in the context of the CCP, indicates an area free from hunting. A key feature of a sanctuary is to make it large enough that intrusions on its borders do not unduly disturb the normal lifecycle functions (e.g., feeding, resting, preening, and courtship), or cause the birds to take flight. We believe the areas designated for sanctuary are sufficiently large to reduce the detrimental effects of all forms of disturbance, including those resulting from hunting activity.

Comment: Several felt that the refuge’s proposed changes to its hunt program will negatively impact marsh habitats. The Humane Society of the United States, the Pegasus Foundation, and Delaware Votes for Animals write, “Because Alternative B permits an 8 ½ month-long hunting season in critical marsh habitats, the continuous and overlapping seasons, particularly in the September to April period, punctuated with shooting and concentrated disturbance by hunters, would cause significant degradation of the marsh habitats.”

Response: Based on responses from the CCP public comment period, the Service has revised the final CCP/EIS to not open hunting on Prime Hook Creek and the saltmarsh areas along the Broadkill River of Unit IV. The possibility for new trails to be developed from repeated hunter entry may occur in all hunt areas, including salt marsh habitats. However, given the large expanse of both upland and wetland acreage, anticipated dispersal of hunters across hunting areas, the inherent nature of hunters to only travel as far as needed to find a hunting location, and knowing that most vegetative species will have already undergone senescence or become dormant, the impacts to vegetation are expected to be negligible from hunting as discussed in “Impacts to Vegetation” in chapter 5 of the final CCP/EIS.

Furthermore, salt marsh habitats were found to be the most resistant to human trampling when compared to other habitats such as a natural dune, a man-made dune, and man-made coastal grasslands (Anderson 1995). This study analyzed the vegetation of five paths (one in each of the habitats) created and sustained by human trampling and reported that trampling of vegetation (estimated to be 1,815-3,630 passages per year) can be considered as very light. Even though it created paths and reduced vegetation cover and species diversity, the paths still retained a persistent vegetation (Anderson 1995). We predict that far fewer than 1,800 will free roam hunt in refuge salt marsh habitats, and therefore predict that the impact from the trampling of vegetation would be considered very light and consistent with the findings reported in Anderson (1995).

Comment: The Delaware Audubon Society, PEER, the Humane Society of the United States, and several individuals feel that expanding the refuge hunting program does not comply with the refuge’s purposes. For example, PEER writes, “Opening up the entire refuge for 8 ½ months to new and continuous forms of hunting activities is an excessive expansion of the hunting program that materially interferes with and detracts from the refuge’s primary use of conservation and the refuge’s specific “purpose” uses which include:

- For use as an inviolate sanctuary, or for any other management purpose to conserve migratory birds;
- Protection of natural resources;
- Conservation of endangered and threatened species; and
- Incidental fish and wildlife-oriented recreational development.”

PEER continues, “The CCP/DEIS downplays or ignores that the majority of refuge recreational users are non-hunting, wildlife recreationalists. Based on the Service’s own data, non-consumptive users account for 90% of all wildlife-dependent recreational users, while hunters account for 2% of annual recreational visits. This clearly demonstrates that there is no real need for supporting what appears to be an unwarranted and unnecessary hunting expansion across the entire refuge as outlined in Alternative B for 2% of refuge’s recreational users. Current hunting levels are more than adequate and sufficient to address the recreational needs of these “two percenters.”

Response: We respectfully disagree with these conclusions. The Refuge Improvement Act of 1997 identifies hunting as one of six priority, wildlife-dependent public uses that are to receive enhanced consideration in refuge planning. The others are fishing, wildlife observation and photography, and environmental education and interpretation. Our mandate is to provide high-quality opportunities for those priority uses when they are compatible with refuge purposes, goals, and other management priorities. The Act does not establish a hierarchy among the six priority uses, but requires the Service to facilitate them when they are compatible and appropriate. In fact, we maintain or enhance opportunities for all six priority public uses in our preferred alternative. Expansion of hunting opportunities at the refuge does not come at the expense of other priority public uses. Many of the proposed changes in the hunt program have been developed to be responsive to public input and in coordination with DNREC to solve issues of inefficiency and complexity. The Service presents a full range of alternatives for hunting and analyzes their direct, indirect, and cumulative impacts. The Service also presents in Appendix C of the CCP, a Hunting Management Plan, which includes an analysis of cumulative impacts of the preferred alternative. Appendix E of the CCP, “Findings of Appropriateness and Compatibility Determinations,” includes a compatibility determination for public hunting. Appendix G of the CCP, “Intra-Service Section 7 Biological Evaluation Form,” includes an analysis for listed species.

Executive Order No. 13443 (August 16, 2007), “Facilitation of Hunting Heritage and Wildlife Conservation,” reinforces the importance of hunting for recreational and management purposes on national wildlife refuges. That order recognizes the declining trends in hunting, and directs the Department of the Interior and other federal land management agencies to “facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat.” It also states that federal agencies are to “manage wildlife and wildlife habitats on public lands in a manner that expands and enhances hunting opportunities, including through the use of hunting in wildlife management planning.” Our Regional Visitor Services Program Team also identified hunting as an “area of emphasis” for this refuge, followed by wildlife observation and photography as a tool to assist refuge managers and staff in a declining budget environment and to direct attention to what refuges do best. In 2006, each refuge in the region was assigned a first and second priority area of emphasis based on many criteria such as refuge purposes, local interest in the recreational activity, opportunities for unique experiences, and opportunities to attract National/international exposure. One of the uses of these areas of emphasis is to support CCP teams as long-range goals, objectives, and alternatives are developed.

Public opportunities to hunt on the Delmarva Peninsula are decreasing with increasing private land development. Refuge lands are thus become increasingly important in the region as a place to engage in this activity. A recent study found that 78 percent of hunters in Delaware hunt on private land (U.S. Department of the Interior 2006). When asked the importance of hunting activities in the U.S. Geological Survey visitor and community survey (Sexton et. al 2007), a little over half of the responses rated them as moderately to very important. Furthermore, hunting participation in Delaware has increased, which is in contrast to recent national trends (U.S. Fish and Wildlife Service and U.S. Census Bureau, 2006). However, new preliminary data now indicates that hunting participation in the nation has increased nine percent from 2006 to 2011 (U.S. Fish and Wildlife Service 2012). This latest trend is encouraging and the Service will continue to provide and enhance opportunities for this traditional, long-standing recreational activity on the Delmarva.

The Migratory Bird Conservation Act of 1929 authorizes acquisition of refuges as “inviolate sanctuaries” where the birds could rest and reproduce in total security. In 1949, this “inviolate sanctuary” concept was modified by an amendment to the Migratory Bird Hunting and Conservation Stamp Act which permitted hunting on up to 25 percent of each inviolate refuge. Another amendment to the Migratory Bird Hunting and Conservation Stamp Act in 1958 increased the total area of an inviolate refuge that could be opened for hunting up to 40 percent.

Whether an area is an inviolate sanctuary is a function of the mechanism of its creation. If a refuge was acquired as an inviolate sanctuary, only 40 percent of the refuge area may be opened at one time for hunting of migratory game birds. However, if the refuge was not acquired as an inviolate sanctuary, 100 percent of the refuge area may be opened for hunting.

The Fish and Wildlife Improvements Act of 1978 amended Section 6 of the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd) to provide for the opening of all or any portion of an inviolate sanctuary to the taking of migratory birds if taking is determined to be beneficial to the species. Such opening of more than 40 percent to hunting is determined by species. This amendment refers to inviolate sanctuaries created in the past or to be created in the future. It has no application to areas acquired for other management purposes.

The comment that the refuge is open to hunting for 8 ½ months out of the year is misleading. Yes, there is the potential for the refuge to be open for this length of time; however, the vast majority of the hunting will occur during the main hunting season, which typically runs for 5 months from September through January with additional hunting opportunities for rabbit through the end of February. Hunting during the snow goose conservation order, which will occur for 2 ½ months from late January through mid-April, will take place mostly in the wetland areas, leaving the upland areas open to other uses. This late season is not anticipated to bring large numbers of hunters, but is beneficial to the species and other wildlife due to overpopulation of snow goose on the refuge. We would only issue five or fewer turkey hunting permits and the vast majority of the refuge would remain open to wildlife observation and other non-consumptive uses during the turkey hunting season. The Headquarters area remains available 363 days a year for non-consumptive uses but portions may be closed for turkey hunting. Most other areas are open on every Sunday during the hunting seasons.

Comment: The Delaware Audubon Society, Humane Society of the United States, The Pegasus Foundation, Delaware Votes for Animals, and several individuals are concerned about the impacts of free roam hunting on refuge wildlife and habitats, as well as causing conflicts among hunters. For example, the Delaware Audubon Society writes, “Alternative B proposes to allow various types of roam hunting for deer and turkey by an unlimited number of hunters. This will undoubtedly lead to habitat alteration and degradation, as well as conflicts among hunters over hunting locations.” Specific species and habitats mentioned include: marsh, salt marsh, water upland, and habitats; snow geese, American black duck, clapper rail, northern bobwhite, pheasants, red fox, woodcock, snipe, and wild turkeys.

Response: We respectfully disagree. We included an analysis of the impacts of hunting in chapter 5 of the draft and final CCP/EIS. Please also see similar comments and responses under “Hunting Safety, Including Conflicts with Other Users and Adjacent Landowners.” We do expect some conflict among hunters over desired hunting locations and we will continue to encourage proper hunting ethics. However, the numbers of hunters that would be on the refuge at any time is not unlimited; we would only issue five or fewer turkey hunting permits, and the number of deer hunters that can free roam at any time would be limited by the capacity of the 13 parking areas found on or near the refuge that total approximately 72 vehicle spaces.

Comment: One individual writes, “Your maps incorrectly imply that Petersfield Ditch and Headquarters Ditch are open (not closed) during hunting. (Example Page 4-67).”

Response: We agree and are sorry for any confusion this many have caused. We have updated the maps and text in the final CCP to indicate that access to Prime Hook Creek from the refuge boat ramp is closed from September 1 through March 15.

Comment: One individual writes, “What is the purpose for opening the refuge to fox hunting?” and asks, “Is the refuge open to kill season only or also the chase season?”

Response: The State of Delaware permits hunting for red fox to reduce the incidence of mange outbreaks to maintain a healthy population and to reduce fox predation on migrating and breeding birds, particularly State and federally endangered and threatened species. Fox hunting would only be permitted when concurrently hunting deer and only in areas open to deer hunting. Chase hunting is prohibited.

Comment: Several commenters are concerned that the refuge is going to discontinue hunting reporting requirements. One letter states, “The data gathered from these reports is valuable information for evaluating the hunt and its impact on species hunted as well as the number of hunters afield...How will that aid hunt evaluation and monitoring of impacts on wildlife and wildlife habitat? How will you monitor cumulative impacts to both hunted and non-hunted wildlife?”

Response: Harvest data will not be collected through refuge staff. However, deer harvest data will be available through the State Division of Fish and Wildlife’s harvest reporting system and migratory bird harvest data will be available through the Harvest Information Program, or HIP. Migratory bird hunting frameworks are revised annually by the Service and this process is discussed thoroughly in the section, “Impacts to Waterfowl,” in chapter 5 of the final CCP/EIS. The refuge will evaluate the hunting program on a regular basis along with the Delaware Division of Fish and Wildlife to ensure that we are meeting resource management objectives and continuing to offer quality experiences. In cooperation with our State partners, we will evaluate the hunting program based on hunter harvest, hunter participation and feedback, State and Federal wildlife surveys, and staff observations.

Comment: One individual was concerned about the following statement on page E-140 of the draft CCP/EIS: “The refuge manager may, upon annual review of the hunting program and in coordination with the Delaware Division of Fish and Wildlife, impose further restrictions on hunting, recommend that the refuge be closed to hunting, or further liberalize hunting regulations within the limits of State seasons and regulations. Hunting restriction may be implemented if it conflicts with other, higher priority refuge programs or endangers refuge resources or public safety.” The individual writes, “How do you rectify [this statement] with the realities of damage to habitat and the public outcry for safety?”

Response: We respectfully disagree. The proposed hunting program reflects a diversity of safe, quality hunting experiences that minimize impacts to both habitat and wildlife resources. Changes in habitat conditions, visitor use, and unexpected circumstances may require adaptive measures where the refuge manager may have to either restrict or liberalize hunting regulations if they conflict with other higher priority refuge programs or endangers refuge resources or public safety.

Comment: The Humane Society of the United States is concerned with the refuge expanding areas open to hunting. They write, “Refuge areas would be greatly expanded to accommodate extended and expanded hunting seasons, to wit:

- 1,513 acres would be added to the deer hunting area;
- 1,732 acres of fragile salt marsh would be opened to waterfowl hunting; and
- 3,472 acres would be newly added for turkey hunting.”

Response: We believe that the proposed hunting expansions will provide a more quality hunt for hunters, and will not occur in areas or times currently allowed to other non-consumptive users. Many of these proposed “new” hunting areas are currently open to some type of hunting or have been previously open either under refuge management or private ownership. For example, Unit I is currently open for deer and upland game hunting (including dove hunting) and we now propose to open it for waterfowl hunting. The only refuge lands we propose to open to hunting that is not currently being hunted for any species includes: an area located north of Prime Hook Road commonly referred to as Oak Island (deer only), an area north of Route 16 referred to as the Millman Tract (deer and turkey), an expanded area of the existing Jefferson Lofland Area and Headquarters Area (deer and turkey), an expanded area of the Unit III waterfowl hunt area (waterfowl only), and an area west of Petersfield Ditch in Unit IV. Of these areas, Oak Island was previously hunted under refuge management up until 1995 and the Millman Tract was hunted under private ownership up until the Service purchased it in 2001. The expanded areas of the Jefferson-Lofland Area, Headquarters Area, and nearly all of the proposed Unit III waterfowl hunt area were previously hunted under refuge management. No prior hunting of the area west of Petersfield Ditch is known.

Hunting Safety, Including Conflicts with Other Users and Adjacent Landowners

(Letter ID#: 4, 5, 9, 13, 16, 17, 24, 28, 29, 31, 32, 34, 35, 36, 37, 40, 41, 43, 45, 53, 60, 64, 70, 71, 73, 80–Petition, 81, 82, 88, 92, 97, 98, 100, 103, 104, 105, 106, 107, S6, S7, S11, S12, S16, S17)

Comment: Several commenters, including the Delaware Audubon Society, feel that closing portions of the refuge for hunting activities would negatively impact other refuge users. One letter states, “The majority of refuge visits based on PHNWR annual visitation numbers come from non-consumptive recreational users, who come expressively to see and observe wildlife at Prime Hook. Yet, as the major recreational user group of the refuge their opportunities are instead being significantly reduced and/or totally eliminated for 8 ½ months during proposed expanded hunting activities.” Another writes, “Opening up more trails is a wonderful idea, but the major part of the year those trails will be closed to those who want to take a walk or simply observe nature.” Similarly, The Canoe Crusiers Association of Washington, D.C. was concerned about nonmotorized boating closures due to hunting. They write, “We would like to...urge a change in the current restrictions on paddling on the refuge. Specifically...the closure of Prime Hook Creek between early October through March...to minimize wildlife disturbance and avoid hunting conflicts...there is no reason the resource cannot be more equitably shared...by setting aside some days for paddling or distributing a limited number of passes. [We consider the cooler months prime paddling time]...As for hunter conflicts, if the hunters are not currently shooting each other or disturbing each others’ success, why would an occasional few paddlers have a greater impact.”

On the other hand, one individual does not feel that the existing hunt program conflicts with other users. He writes, “From what I’ve noticed...I find the [proposed changes to] hunting [under alternative B] over kill. During the hunting season I’ve see only a few bird watchers in the area.”

Response: We respectfully disagree. Areas and opportunities that birders, hikers, photographers, and other non-consumptive recreational visitors enjoy and use on the refuge currently will be not be reduced or curtailed under the Service’s preferred alternative. The majority of the refuge would remain open to wildlife observation and other non-consumptive uses, and provide more opportunities and open areas than under current management, as described under objective 5.2 in alternative B of the CCP/EIS. More specifically, opportunities for wildlife observation and photography have been expanded to include seven new trails totaling 3.7 miles throughout the refuge in all four management units on existing maintained trails or interior refuge roads, bringing the total number of trails to 14 and 9.9 miles. The Headquarters area, which contains six trails covering six of the nine total miles of refuge trails, remains available 363 days a year for non-consumptive uses, but portions may be closed for turkey hunting. All other areas except for the Deep Branch Trail, Fowler Beach Road trail (southside), and Prime Hook Creek are open on every Sunday during the hunting seasons. The Deep Branch Trail, the Fowler Beach Road trail (southside), and Prime Hook Creek are open with seasonal closures of every day from September 1 through March 15 and if necessary during the snow goose conservation order or turkey hunting seasons. If and when the photography blind is available on the southside of Fowler Beach Road, this portion of the trail will be open year round and open every Sunday during the hunting season. The majority of the hunting will occur during the main hunting season, which typically runs for five months from September through January, with additional hunting opportunities for rabbit through the end of February. Hunting during the snow goose conservation order, which will occur for 2 ½ months from late January through mid-April, will take place mostly in the wetland areas, leaving the upland areas open to other uses. This hunt is not anticipated to bring large numbers of hunters, but is beneficial to the species and other wildlife due to overpopulation. With five or less turkey hunting permits issued in April and May, a vast majority of the refuge would still remain open to wildlife observation and other non-consumptive uses.

Comment: Many commenters felt that adding free-roam hunting and removing deer stands and duck blinds would reduce safety. Several felt that blinds and stands were important for older and youth hunters. For example, the State of Delaware recommends, “that the Service consider maintaining some stands to provide safe and accessible hunting opportunities for older hunters and youth.” The town of Slaughter Beach writes, “There is an increased risk to public safety if free-roam hunting is allowed around or within our borders.”

Response: Visitor safety at refuges is a high priority when developing compatible wildlife-dependent recreation programs, such as hunting; however, it is ultimately the responsibility of every hunter to be safe. An accident involving hunter safety results from either a lack of hunting ethics or a violation of hunting regulations. Under alternative B, we would recommend and encourage the use of portable deer climbing stands, but will not require it. For hunters who may be unable to climb trees using portable deer stands or who may wish to hunt from permanent deer stands or duck blinds, the State-owned Prime Hook Wildlife Area, which adjacent to the refuge, will continue to provide these opportunities.

Providing elevated deer stands, and to a lesser degree waterfowl blinds, is relatively unique to Delaware. There are many areas on the Delmarva Peninsula, other than Prime Hook NWR, that offer public hunting opportunities in free-roam areas where the hunter can use their own blind or stand, if desired.

Based on the comments we received, we conducted a web-search for public lands within the three states making up the Delmarva Peninsula in order to evaluate the prevalence of permanent waterfowl blinds or deer stands on public hunting lands. We looked at a wide range of public lands (215 different tracts) including state parks, national parks, state forests, Chesapeake forest lands, and natural resources management areas.

Of the 215 tracts we evaluated, 131 offered waterfowl hunting. Of the 131, only 36 provided either a pit or standup blind somewhere on the tract. For example, Tuckahoe State Park provides 4 pit blinds but also allows free roaming along the Tuckahoe River. Of the 36, 28 were located in Delaware, 8 in Maryland, and none in Virginia. Twenty tracts required hunters to hunt at a stake or within some designated distance from a blind site where the hunter would provide the blind (if desired), including 9 in Delaware, 11 in Maryland, and none in Virginia. A total of 84 tracts permitted free-roam hunting where the hunter would provide the blind (if desired), 17 in Delaware, 60 in Maryland, and 7 in Virginia.

Of the 215 tracts we evaluated, 181 offered some form of deer hunting; we did not make a distinction between the various methods (e.g., some tracts may be limited to bow hunting only). Of the 181 tracts, 95 were located in Delaware, 77 in Maryland, and 9 in Virginia. A total of 51 of the 181 tracts required hunters to use stands that were provided, all of which were located in Delaware. Free-roam hunting was permitted on 165 tracts, including 80 in Delaware, 76 in Maryland, and 9 in Virginia. We acknowledge that some free roam areas were for bow hunting only, however such a distinction would only apply in Delaware; all deer hunting tracts in Maryland and Virginia permitted free-roam hunting regardless of hunting method.

For the 85 tracts located in Maryland and Virginia where no stands are provided, only 2 require an elevated stand, which the hunter must provide. For areas immediately adjacent to the building complex on Blackwater NWR, the hunter must use an assigned blind site where the hunter erects a stand with a platform minimum of 8 feet above the ground. All other tracts on Blackwater NWR are free-roam where ground-hunting is permitted. The second site where elevated deer hunting is required is on Chincoteague NWR, around the tour loop. Here the hunter must erect his/her own stand with a platform minimum of 14 feet above the ground. All other areas on Chincoteague NWR permit free-roam hunting.

We should also add that rifle hunting, as well as deer drives, are permitted on most public hunting lands on the lower eastern shore of Maryland and the eastern shore of Virginia. Please also see our responses below under “Waterfowl Hunting – Blinds” and “Deer Hunting – Tree Stands.”

Comment: One individual writes, “There is no safety zone along Fowler and Slaughter Beach Roads or along the beach. What happened to public safety considerations?”

Response: State law requires hunters to be a minimum of 15 yards away from public roads providing a safety buffer, and hunters are not allowed to shoot across a public road or right-of-way. Currently, much of the areas bordered by Fowler Beach Road and Slaughter Beach Road are hunted, and the safety record to date has been excellent. There is also a safety zone in place (please see map 4-9 in the CCP/EIS) in Unit I near the more populated Slaughter Beach community.

Comment: The Humane Society of the United States writes, “Populations of turkeys, foxes, pheasants, and bobwhite quail on PHNWR are very low; allowing them to be hunted will impinge upon the public’s aesthetic interest in observing wildlife. Some may not even exist on the refuge. But, opening a formal hunting season for these animals will guarantee that if they are seen, they will be shot or shot at, depriving the visiting public and non-consumptive users any ability to see, enjoy or interact with these animals.”

Response: The game species listed in the comment are considered residents, subject to hunting regulations set by the State of Delaware. Pheasants are also an exotic species in Delaware. The State of Delaware monitors these species populations and sets seasons and bag limits, as warranted. Also, where and when game density is low, hence hunter success is low, hunters typically move on to other sites, potentially improving their opportunity for success.

The commenter should be aware that a proportion of all animal species living in areas outside tracts delimited for hunting are subject to numerous sources of natural mortality, as well, though it is unlikely that either hunting or natural sources of mortality “will impinge upon the public’s aesthetic interest in observing wildlife.” There is no “guarantee that if they are seen (by hunters) they will be shot or shot at ...” Hunters must abide by State and Refuge specific regulations, including seasons, bag limits, methods of take, and open/closed area restrictions, to name a few. These regulations are designed to limit excessive harvest of animals.

The Refuge Improvement Act does not prioritize the six primary wildlife dependent public uses. Consumptive and non-consumptive users on PHNWR will be separated, by design, in time and space, permitting all individuals to pursue their preferred form of wildlife dependent recreation without undue interference from the other.

Finally, hunters, as much as anyone, enjoy the aesthetics associated with viewing wildlife during all periods of the year, not just during the hunting season. Under the preferred alternative, opportunities for all visitors to enjoy wildlife will be enhanced by maintaining existing, or opening new parking lots, access trails, boat ramps, fishing areas, and photo blinds.

Comment: The authors of one letter recommend having a self service check-in and check-out for hunters. They feel that hunter safety requires knowing that safe exit has occurred. Similarly, another felt that removing stands and blinds could make it difficult to find “lost hunters.” He writes, “Currently there is no staff available at the end of the hunt...If a hunter is overdue, first responders have [a better] chance of locating the individual if they at least have a starting point [such as] a stand or blind.”

Response: Visitor safety is a key issue in providing quality compatible wildlife-dependent recreation programs, such as a refuge hunting program. Check stations are generally used to control hunting area access, collect biological information, and, when appropriate, to enforce hunting regulations. Although the refuge’s hunting program is developed in such a way to provide a safe and wholesome hunting opportunity, it is the responsibility of every hunter to develop a plan for every hunt to include preparation, communications with companions, knowledge of location, emergency preparedness, safety, etc. This responsibility also applies to all refuge visitors, including trail users, anglers, canoers, birders, and photographers.

Comment: Several individuals were concerned that deer and waterfowl hunters in free-roam hunting areas might trespass and interfere with private landowners adjacent to the refuge. Several others felt that adjacent landowners would be at a higher risk of being hit by stray bullets if waterfowl blinds and deer tree stands were eliminated. One writes, “In past years with no safety zone in place we had problems with all types of hunters trespassing from the refuge side. A recent safety zone has helped but is no longer in your preferred option. We should be able to walk on our property anytime without fear of public hunter contact or being shot. Private landowner’s should have protections from public hunters... We should not be responsible for policing our land against trespassers...We have encountered armed trespassers on our land (with no enforcement available) and have had shot rain down on us as we walked our farm. When asked, management felt that a 100 yard safety zone was asking too much. Considering that the Refuge has 10,000 acres at its disposal, our safety should rank higher on the list of priorities. The refuge should be a good neighbor, a part of our community. We need a buffer zone...”

Response: Map 4-16 of the CCP/EIS shows buffer zones for hunting for the Service’s preferred alternative, which maintains the Slaughter Beach safety zone. Although the refuge provides hunting maps and refuge-specific regulations, it is ultimately the responsibility of the hunter to know and obey them. Unfortunately, not all do. We will ensure that refuge boundaries are, and continue to be, properly posted to notify both refuge visitors and private landowners. We encourage private landowners to contact either refuge and/or state law enforcement when these trespassing incidents occur and every effort will be made to respond in an efficient and timely manner. We also encourage private landowners to post their own property, and there are laws and regulations in place to discourage boundary shooting.

Comment: One individual writes, “Hunters in the proposed hunt areas along the Broadkill River and Petersfield Ditch in Unit IV will be violating Delaware law by hunting within 1,500 feet of established blinds located on private property near or adjacent to the refuge.”

Response: Based on public comment, we have revised the refuge’s final CCP/EIS to reflect a reconfiguration of hunting areas, which is described in objective 5.1 of alternative B. We no longer propose waterfowl hunting in refuge areas adjacent to the Broadkill River and Petersfield Ditch. For clarification, the proposed activity to hunt this area in the draft CCP/EIS was not in violation of Delaware law since hunters would be hunting on shore and not by boat. According to the Delaware Administrative Code in Title 7 (Natural Resources & Environmental Control), Section 2.3.1 of the Wildlife Section states “During the season for the hunting of migratory waterfowl, it shall be unlawful for any person to hunt from a boat of any kind that is within 1500 feet of an established blind...”

Comment: The authors of one letter feel that the “primary objectives” of the refuge’s hunting program should be safety, followed by the quality of hunting experience.

Response: We agree that public safety is the most important objective of the refuge’s hunting program. “Quality” is a subjective term as there is a substantial diversity in what people are seeking in outdoor recreation, such as hunting. A quality hunting experience to one hunter may be completely different to another hunter. In the preferred alternative, we propose to expand hunting on refuge lands to offer quality opportunities for hunting deer, waterfowl, upland game and webless migratory birds (dove), and turkey. Hunters would also have the opportunity to harvest a renewable resource in a traditional manner, which is culturally important to the local community. Under all alternatives, the public will be able to enjoy hunting at no or little cost in a region where private land is leased for hunting, often costing a person several hundred to several thousand dollars per year for membership. The Service also makes special accommodations for mobility-impaired hunters and youth hunters, which will provide the opportunity to experience a wildlife-dependent recreation, instill an appreciation for and understanding of wildlife, the natural world, and the environment, and promote a land ethic and environmental awareness.

Comment: One individual suggests creating hunting zones and limiting the number of hunters allowed in each zone for safety reasons and to limit conflicts among hunters.

Response: We agree that zoning of hunt areas and limiting hunter numbers are methods that can be used to limit conflicts among hunters and other user groups. In fact, alternative B proposes to limit hunter numbers in the Deer and Waterfowl Lottery Hunt Areas because these have historically been highly used areas. Furthermore, zoned areas or blind sites are proposed for the Waterfowl Lottery Hunt Area to create designated areas for each hunting party. We have also proposed areas that do not restrict the hunter to a defined area, which is discussed in further detail earlier in this section.

Hunting Fees and Program Costs

(Letter ID#: 4, 5, 14, 15, 16, 17, 24, 28, 60, 81, 92, 98, 100, 103, 107)

Comment: A few individuals suggested expanding the use of volunteers to administer the hunting program to cover staff shortfall.

Response: Volunteers contribute great ideas and enthusiasm, and we are very supportive of expanding opportunities for volunteers at Prime Hook NWR. Volunteers contribute, and will continue to contribute, by helping with the success of the hunting program through maintenance and public outreach. The level of training required for many programs such as the hunting program, and the level of responsibility that go with them make it unrealistic, and even unfair, to expect volunteers to run them.

Comment: Several individuals felt that the refuge should not make any changes to the existing hunt program, but rather focus on properly funding the program. One writes, “This is a major refuge mission and should be properly funded.”

Response: Refuges receive annual funding from an annual budget approved by Congress. In the Service’s Northeast Region, refuges are currently funded at 75-percent staffing and 25-percent operating levels. Prime Hook NWR also receives funding from permit fees that are collected for the development, operation, and maintenance of the permitted forms of recreation such as hunting. At least 80 percent of all fees collected remain available for expenditures at that location, with the remaining balance used region-wide.

Reduced funding over the past several years has placed the Service in a position where it had to reduce staffing nationwide and the refuge system has sustained flat lined budgets since 2009. Regardless of funding levels, the refuge’s current hunting program is inefficient and requires a significant amount of staff resources. Administrative burdens of the existing hunting program are out of balance with other priority refuge needs and services and the amount of station resources going into the program seem to far exceed what is necessary to provide for a quality hunting program. Alternative B, the Service-preferred alternative, reduces this administrative burden and minimizes the amount of staffing resources needed to conduct the hunt by 54 staff days and \$17,890.

To improve the refuge’s program, we evaluated the refuge’s existing hunting program, incorporated the opinions of hunters, and developed alternatives in collaboration with our State partners in the Delaware Division of Fish and Wildlife. These program changes, which reflect a diversity of hunting preferences and opportunities, strive to meet the guiding principles for a quality refuge-hunting program identified in Service policy 605 FW 2. They also support Presidential Executive Order 13443: Facilitation of Hunting Heritage and Wildlife Conservation (August 16, 2007).

Comment: A few individuals suggest that the refuge charge a fee to all refuge visitors, not just hunters. One writes, “To eliminate hunting time and increase the fees for hunters is [discriminatory]. If money is the issues then mandate a permit...for ALL that enter the [refuge].” Another writes, “Can other public use programs on the refuge be fee based to allow more of the money collected from hunting fees to be returned to the hunting program?”

Response: The refuge does not charge an entrance fee for all visitors since there are many entrances to the refuge (see response above under “Public Use and Access”).

Comment: Several individuals are opposed to increases in hunting fees, while a few others feel that the increased hunting fees are necessary “because of the cutback[s] in Washington” and “to offset costs.” One opposed writes, “I dislike the new fee...it would triple the cost to hunt a single day on the refuge.” Another writes, “The new electronic way costs us hunters, the fees are put on us. Doesn’t sound right that we have to pay for something we don’t want!!!”

Response: To encourage hunter participation, hunting fees are being eliminated to provide opportunities to hunt waterfowl, deer, and upland game in some refuge areas at no charge. Fees will still be required for lottery hunt areas for deer, waterfowl, and turkey. The Refuge Recreation Act requires that funds are available for the development, operation, and maintenance of the permitted forms of recreation.

Under the Service-preferred alternative, the permit fee (\$10 for deer and turkey; \$15 for waterfowl), preseason application fee (\$5/hunter), and processing fee for permits acquired after the preseason drawing (\$2-3 per hunt) are the minimal amounts needed to offset the cost of facilitating the preseason drawings and manage the lottery hunts. The application fee, processing fees, and change from a \$5 per hunter fee to a flat \$15 per blind fee are the most significant changes from the current fee structure. Due to the uncertainty in the level of hunter participation with these new program changes, permit fees may need to be adjusted (increased or decreased) and therefore will be evaluated annually. Preseason lottery drawings will be administered by a contracted company which will collect information and required fees, conduct the drawing, and issue the permits. This may reduce Service costs by over \$3,000 and all application and processing fees will be paid to the contractors for administering this permitting process.

Comment: One individual writes, “Hunters and anglers pay for the refuge through Duck Stamps, hunting/fishing licenses, and taxes on gear, ammunition, and equipment. Any money collected from hunting permits should be used towards the refuge’s hunting program.” Another individual concurs, writing, “Please listen to us, Prime Hook was made for hunting, is paid by ONLY HUNTERS and we deserve some say!!! We have no problems with birdwatchers or hikers but we all know they have no fee for what they do.”

Response: We recognize hunters and anglers have been and continue to be major financial supporters for conservation in this country. In fact, the funds collected from the sale of Migratory Bird Hunting and Conservation Stamps (Ducks Stamps) have purchased over 80 percent of the land that now make up the Prime Hook NWR. However, operation and maintenance funds for national wildlife refuges do not come from the sale of hunting/fishing licenses, the sale of Duck Stamps, or from taxes on equipment, but from general tax revenues.

The Federal Aid in Wildlife Restoration Act of 1937 or “Pittman-Robertson Act” and the Federal Aid in Sport Fish Restoration Act of 1950 or the “Dingell-Johnson Act or Wallop-Breaux Act” provide Federal aid to the States for management and restoration of fish and wildlife through excise taxes on fishing equipment, ammunition, guns, boat motor fuel, and others. Revenue generated from hunting and fishing license fees also supports State fish and wildlife programs.

Refuges receive annual funding from an annual budget approved by Congress. The Refuge Improvement Act requires that each refuge facilitate compatible hunting, fishing, wildlife observation, photography, interpretation, and environmental education. Permit fees are charged and collected for the development, operation, and maintenance of the permitted forms of recreation such as hunting. At least 80 percent of all fees collected will remain available for expenditures at that location, with the remaining balance used region-wide. Fees collected from lottery hunts will be used for costs such as printing annual hunting regulations, sign replacement, disabled hunting blind maintenance, and other infrastructure and maintenance needs.

Comment: The State of Delaware writes, “The CCP also mentions that many of your proposed hunting changes are scheduled to reduce cost. Although we certainly understand the need to be cost efficient in operating the hunting programs, we also contend that supporting hunting is a focus of our joint mission and therefore we should not expect the cost of running the program to be balance with income generated. We are in the business of providing hunting opportunities to the public and there will be costs that must and should be absorbed. We do not analyze habitat development and maintenance in terms of user cost; why do we then evaluate priority recreational activities for their programmatic cost?”

Response: Refuge management’s primary focus must be on the refuge purposes and the Service Mission; other uses remain secondary and are permitted only when found compatible. The Refuge Improvement Act does not prioritize the primary wildlife dependent recreational uses. Under the current hunt management regime, hunting is consuming an inordinate amount of refuge staff time and resources, competing directly with other equal or higher refuge management priorities. Revision of the hunt plan is necessary to bring refuge management more in line with statutory responsibilities. The proposed hunting changes are scheduled to reduce the cost for both administering the hunting program and for the hunter. The Service realizes that some costs associated with administering any recreational program must be absorbed; however, the Compatibility Policy (603 FW 2) requires that an analysis of costs for administering and managing the use must be completed to ensure that there are sufficient resources. Furthermore, the Recreation Act requires that staffing and funds are adequate to administer the program.

Hunting Lottery

(Letter ID#: 4, 14, 15, 16, 17, 28, 31, 37, 43, 53, 57, 60, 77, 81, 92, 95, 97, 100, 103, 108–Form letter)

Comment: Many respondents felt that the refuge should stay with the current daily permit system for waterfowl hunting because requiring hunters to sign up for a blind in advance will eliminate the ability to choose a blind according to weather conditions, hunting pressure, and competition as hunters can do with the current daily standby drawing. Many stated they felt the current system works well and do not see any reason to change it.

Response: Preseason lottery drawings are proposed for high demand areas, including the lottery deer hunting area (Headquarters Area), disabled deer and waterfowl hunting areas, lottery waterfowl hunting area, and lottery turkey area to reduce hunter conflicts, lessen administration, and provide equal opportunity for all hunters. Particularly on opening days, it is common to see 60 to 80 duck hunting parties show up for 25 to 27 blinds and to see over 100 deer hunters show up for 32 deer hunting stands. Preseason lottery drawings provide hunting opportunities for local, in-State, and out-of-State hunters. Knowing in advance of a hunting opportunity allows hunters to prepare, plan, and/or scout, which ultimately helps to improve their hunting experience. Daily standby lottery drawings would be eliminated for reasons outlined in objective 5.1 in alternative B.

In particular, for waterfowl hunting, the preseason lottery drawing will randomly select a blind site location for a given date. The permittee must choose to accept by completing payment or deny the selection. It is possible for someone entered in the drawing to be randomly selected for multiple dates. However, for the vacant hunting opportunities not selected during the preseason lottery drawings, hunters will have the flexibility to go to the third party contractor’s website on a first-come, first-serve basis at any time (24 hours a day) during the hunting season, view available hunt dates and blind site locations, and select and pay for these permits, even on the day of the hunt. Refuge staff will work with the contractor to provide the highest level of customer support.

Comment: Several individuals felt that the proposed lottery system for issuing waterfowl hunting blinds might result in blinds sitting empty if people decide not hunt them on any given hunt day. They were disappointed that there is no chance for stand-by hunters to hunt if others do not show up.

Response: Yes, on any given hunt day “no-shows” may occur and those blinds would not be available to other hunting parties on that day. We predict that the number of no-shows will be few since the blinds will be paid for in advance and only the permittee is required to be present. Since the permittee may bring any two unnamed hunters, the permittee has flexibility in adjusting the members of his hunting party at any time due to unexpected circumstances. Furthermore, our proposed hunting program allows permitted parties to secure a blind site location even though they may not hunt until later on that day to catch ducks returning to the refuge marshes. Hunters may forfeit their permits to the contractor without compensation to make available for other hunters.

Comment: Several individuals pointed out that not everyone has internet access or the necessary computer skills to participate in the preseason lottery drawing.

Response: For those individuals who do not have computer access, customer representatives would be available by telephone during business hours on weekdays to assist. A kiosk may also be available at the refuge for hunters to check the availability of hunting opportunities online.

Comment: Several hunters were concerned that people might attempt to limit hunting by reserving all of the blinds during the preseason lottery drawings.

Response: All applicants in the deer and waterfowl preseason lottery drawings have equal chances of being selected multiple times. For the vacant hunting opportunities not selected during the preseason lottery drawing, hunters will be allowed to claim only one permit per day to avoid someone from claiming all available vacancies at one time. All fees must be paid prior to the issuance of the hunting permit. For those attempting to submit duplicate entries or reserve blinds with no intention of hunting them, we have been assured by third-party contractors that there are adequate checks in lottery software programs to detect these circumstances. Tens of thousands of hunting permits have been issued to hunters at other national wildlife refuges through a similar lottery system with no occurrence of any of these issues.

Comment: One individual suggested the following: “To solve the issue of collecting the money and permits several days a week, move the lottery to the outside of the visitor center and make a slot on the building where hunters can safely deposit their permits/money and can be counted only once a week.”

Response: We appreciate your suggestion; however, permits and fees must be collected more frequently to ensure proper accountability. We have proposed to use a web-based system to issue permits and collect fees, which is discussed in Objective 5.1 of the Service’s preferred alternative.

Comment: One individual writes, “The lottery is not good for nonambulatory hunters since most hunt in the afternoon because the lottery makes you reserve a blind for the morning and most of us live 1 to 1.5 hours away, which is impractical to be there that early.”

Response: We disagree. Under the Service’s proposed hunting program, successful lottery applicants will be issued a permit for a date and he/she may choose when they would like to hunt during that day (e.g. he/she could choose to hunt all day, only in the morning, only in the afternoon, etc.). No check in is required.

Hunting Times and Dates

(Letter ID#: 4, 14, 15, 16, 28, 31, 37, 43, 53, 64, 67, 77, 80–Petition, 92, 97, 98, 99, 103, 107)

Comment: Many commenters did not support the proposal to change waterfowl hunting hours under alternative B. In particular, they did not want the refuge to close to waterfowl at 12 p.m. because they feel the early afternoon is a productive hunting time. Most requested the refuge continue to allow hunting until 3 p.m. Similarly, The State of Delaware recommends the Service consider closing the daily hunts at 3:00 PM or later. This would be consistent with management on state areas providing familiarity and reduce complexity to waterfowl hunting regulations within the State.

Response: We have revised the final CCP/EIS to allow waterfowl hunting four days per week until 3:00 p.m. in all waterfowl hunting areas to be consistent with State hunting regulations and hunting programs on State wildlife management areas.

Comment: Many commenters asked why the refuge was proposing to change hunting days and requested that the refuge keep hunting days to Monday, Wednesday, Friday, and Saturday.

Response: We have revised the final CCP/EIS to allow waterfowl hunting four days per week in all waterfowl hunting areas.

Comment: The State of Delaware recommends that the Service restore Friday as a waterfowl hunting day.

Response: As noted above, we have revised the final CCP/EIS to allow waterfowl hunting four days per week in all waterfowl hunting areas to be more consistent with State regulations. This may very well include a Friday hunt day but is subject to change for management purposes if necessary.

Deer Hunting – General

(Letter ID#: 28, 81, 95, 108–Form Letter)

Comment: The form letter states, “Archery, including the crossbow, should be allowed.”

Response: We agree. The Service fully supports archery hunting, including the crossbow, as explained in objective 5.1a under alternative B in the draft CCP/EIS.

Comment: One individual suggested adding a handgun deer hunt on the refuge, stating, “This is an extension of the State deer hunting season that many folks enjoy. Follow State regulations.”

Response: We generally seek additional opportunities to harmonize the refuge and State regulations. Except for the January hunt, the refuge permits the hunting of deer with a handgun provided that State regulations are abided by.

Comment: One individual felt that discontinuing cropland management on the refuge was negatively affecting the quality of deer hunting opportunities. He writes, “I would probably still deer hunt there if the conditions were better [and] there were crops planted again. I feel Prime Hook in the past could possibly be in the future one of the best public hunting properties in the US. In my opinion it can only be improved by going back to the management policies of the past, i.e. planting crops and some form of freshwater impoundment.”

Response: Farming was once a management tool on Prime Hook NWR to provide supplemental food for declining waterfowl species and was once believed to provide habitat for other animals. At its peak crop acreage in the 1970s, farming at Prime Hook maintained a modest amount of crops compared to the total cropland available to wildlife at the time on the Delmarva Peninsula. While the refuge provides vital wetland habitat to many species, the Delaware Wildlife Action Plan shows that agricultural land is not critical habitat for birds.

Deer Hunting – Tree Stands

(Letter ID#: 4, 5, 13, 15, 28, 31, 32, 36, 37, 49, 60, 73, 77, 88, 92, 95, 97, 100, 103, 106, 108–Form Letter, S6, S7, S16)

Comment: Many individuals were concerned with the proposal to phase out permanent deer stands and allow “free-roam” hunting because they felt it was unsafe and would lead to shooting accidents, would result in a poorer quality hunt, or lead to trespassing issues. Some were also concerned with the impacts on older hunters.

Response: We appreciate the concern with the planned phase out of permanent deer hunting stands on the Prime Hook NWR. This is a difficult issue due to the number of hunters involved and the strong traditions that have developed. We feel that the proposal will improve the quality of the refuge's hunt programs. First, hunters who prefer the use of a tree stand may use their own portable stand. We believe that free-roam hunting will address the following issues proposed by hunters: hunters have expressed an interest in scouting, having the flexibility to have greater access to where the deer are located, and/or the ability to adjust their hunting locations for weather conditions to enhance the quality of their hunt. We also feel that free-roam hunting makes the most sense given proposed changes in refuge management. Because we propose managing more acreage as forest and grassland, hunters will need the freedom to choose how and where they hunt (See also comments and responses under "Hunting Safety, Including Conflicts with Other Uses").

Comment: One individual suggests creating "stand sites," similar to the waterfowl blind sites, in place of the tree stands to improve safety and reduce conflicts among hunters.

Response: Year to year changes in habitat conditions due to succession will make it very difficult to provide fixed hunting positions. Please also see similar comments and responses under "Hunting Safety, Including Conflicts with Other Users and Adjacent Landowners."

Waterfowl Hunting – General

(Letter ID#: 14, 15, 16, 81, 93, 97, 100, 105, 108–Form letter)

Comment: One individual stated that she did not support hunting on the refuge. She cited the following reasons: it is not compatible with other public uses, uses taxpayers money, wildlife watchers outspend hunters, hunting is not in the public interest, and hunters may negatively impact refuge habitats and disturb, injure, or kill wildlife. In particular, she was concerned about hunting during the fall when species are migrating. She also did not see any benefits from hunting, writing "It dissolves the effectiveness of the entire plan to save birds, which is why the refuge was first founded."

Response: We understand some citizens' concern with hunting on national wildlife refuges. Prime Hook NWR, as well as the entire Refuge System, is guided by laws enacted by Congress and the President as well as policy derived from those laws. The Refuge Improvement Act identifies hunting as one of six priority public uses to be facilitated when compatible with the purposes of a refuge and the mission of the Refuge System. Hunting is consistent with the purposes of the refuge. While National Wildlife Refuges are managed first and foremost for wildlife, the focus is on perpetuating populations, not individuals. Hunting does adversely affect individual animals, but is allowed when it will not threaten the perpetuation of the population as a whole.

Comment: One individual writes, "The area on Broadkill south of the refuge has private blinds all around it [and] doesn't produce much!!! Also to hunt [the newly proposed areas] near Wapples Pond, there is a boat ramp close to the [waterfowl] blinds but it is on private property, the boat ramp that we would have to use that is owned by the refuge is a very long ride!!!"

Response: Based on public comment, we have revised the refuge's final CCP/EIS to reflect a reconfiguration of hunting areas, which is described in objective 5.1 of alternative B. We no longer propose waterfowl hunting in refuge areas adjacent to the Broadkill River and Petersfield Ditch or west of Foord's Landing on Prime Hook Creek.

Comment: Several individuals were concerned that the refuge's waterfowl hunting program is being negatively impacted by habitat management decisions. One writes, "Bottom line is, Prime Hook's hunting has been what it is by being a freshwater impoundment system as its been for years.. New areas, and added opportunities will not be providing anything additional at all if the ducks aren't there to begin with, and from what I gather with the preferred habitat management plan, I don't see how they can be." Another writes, "The waterfowl hunting program is not the problem- it's your lack of waterfowl habitat [management]."

Response: Please see similar comments and responses above under “Dune Breach, Marsh Restoration, and Shoreline Stabilization” and “Migratory Birds.”

Comment: Several individuals and organizations were concerned about the impacts of waterfowl hunting on refuge habitats, vegetation, and wildlife. For example, the Humane Society of the United States writes, “Other waterfowl will be adversely impacted if Alternative B is adopted. We request and recommend a candid and comprehensive analysis of the aggregate impacts of 8 ½ months of largely continuous waterfowl hunting on the refuge wildlife and waterfowl habitats, the wildlife itself, and the non-consumptive visitor experience.” The Delmarva Ornithological Society writes, “[We are] not aware of any biological reason for doubling the areas available to waterfowl hunting to the maximum 40% of the refuge. While we generally support increasing opportunities for waterfowl conservation and education through hunting, we [are concerned about the impacts of hunting on non-consumptive user groups].”

Response: We regret if we gave the impression that we are proposing continuous waterfowl hunting throughout the refuge. For example, on page C-55 of the draft Hunting Management Plan (appendix C of the draft CCP/EIS), we indicate that the waterfowl season will extend from September to February in the lottery hunt areas and regular hunt areas. Our intent here was to show the potential range of the hunting season. The actual season length, including starting and ending dates, will vary annually. The actual number of huntable days will vary annually, as well.

For example, during the 2012 to 2013 regular duck hunt season, the Federal framework only permits a maximum of 60 days hunted during the 128 days between September 22 and January 27. Based on this framework, the State of Delaware selected a 60-day season spread over 3 time periods. Because of additional restrictions imposed by the refuge (e.g., only allowing waterfowl hunting 4 days a week rather than 6 days a week), the regular duck season on the refuge will actually be 40 days. Similarly, for the 2012 to 2013 migratory Canada goose season, the Federal framework permits a maximum of 50 days hunted between the 83 days between November 15 and February 5. The State of Delaware selected a season of 49 days spread over 2 time periods, both of which run concurrently with portions the regular duck season. Again, because of additional restrictions imposed by the refuge, the actual length of the migratory Canada goose season will be 32 days.

Prior to the Conservation Order taking affect in late January, snow goose hunting on the refuge will occur in the same areas/blinds and on the same specific hunting dates as other waterfowl hunting. Many of the commenters were likely concerned about the Conservation Order hunt season for snow geese. Under this order, snow geese may be hunted in all emergent wetlands continuously (except Sundays) from January 28 to April 13, 2013, once all other waterfowl hunt seasons have closed. Snow geese present a fairly unique issue due to their overabundance. The Service, Canadian Wildlife Service, and all of the Provinces’ and States’ fish and wildlife agencies hope to drastically reduce the size of the current continental populations of snow geese, because they have caused dramatic damage to very fragile arctic breeding grounds that are important to many species of breeding migratory birds. In order to reduce snow geese populations, these agencies have lengthened hunting seasons for snow geese, increased bag limits, and liberalized methods of take. We propose to open all available habitats on the refuge from January 28 to April 13 to specifically reduce damage sustained from overbrowsing of refuge salt marshes.

We project, based upon previous similar hunts on the refuge, that very few hunters will take advantage of the snow goose hunting opportunity for the following reasons: The hunting season starts October 1, several weeks before large numbers of birds arrive on the Delmarva Peninsula, many hunters prefer deer hunting at this time, and snow geese are difficult to hunt. We expect that hunters will take an incidental few snow geese during the regular duck and migratory Canada goose season. Over the period 2001 to 2006, when the refuge was open to late season snow goose hunting, 100 hunters harvested 96 snow geese over a shortened season extending from late January to mid-March. The hunter success rate averaged 0.96 birds/hunt. Because of the difficulty of hunting snow geese, hunting parties were composed of a minimum of two hunters. Thus a maximum of 50 total parties hunted over a combined total of approximately 216 days available over the 6 year period, each party potentially having several thousand acres upon which to hunt. Based on this information, we project negligible impacts to other refuge resources from snow goose hunting.

In addition, non-refuge areas in Delaware will also be open to snow goose hunting during the same period. It appears anecdotally that the limited number of hunters that attempt snow goose hunting during the late season are likely to do so from agricultural fields, alleviating most waterfowl hunting pressure on Delaware's tidal marshes and impoundments.

Wildlife observation is the primary reason most visitor and community residents visit the refuge, and is considered a very important activity to their visit. Expanding the huntable area for waterfowl hunting will not impact non-consumptive user groups. Over 90 percent of non-consumptive users use trails in the headquarters area, or public roads that border or transect the refuge. Currently, the headquarters area is closed a maximum of two days per year; non-consumptive users are allowed to recreate in the headquarters area 363 days per year. This remains the same under the Service's preferred alternative. Similarly, people would still be free to observe wildlife from the public roads as they do today.

For a more comprehensive analysis of waterfowl hunting impacts on refuge resources please see relevant sections in chapter 5 of the CCP/EIS; the Hunting Management Plan (Appendix C in the CCP/EIS); and the compatibility determination for hunting (pages E-191 through E-150 in appendix E of the CCP/EIS)

Comment: Several individuals and organizations were concerned with the refuge's interpretation of "sanctuary." One writes, "The concept of a 'sanctuary' is nothing more than a bait and switch, smoking [sic] mirror scam. Currently, all of Unit II is a sanctuary; salt marsh in Unit IV is a sanctuary; in essence, the salt marsh in Unit I is a waterfowl sanctuary, open only to a few deer hunters; and the west end of Prime Hook Creek is a sanctuary for waterfowl hunters. You plan to waterfowl hunt in the 'sanctuary' area of Units I and IV and the west end of the creek and close a foodless section of Unit III and call it a sanctuary?"

Response: The term "sanctuary," as used in the context of the CCP/EIS, indicates an area free from hunting and other uses. A key feature of a sanctuary is to make it large enough that intrusions on its borders do not unduly disturb the normal lifecycle functions (e.g. feeding, resting, preening, and courtship) or cause the birds to take flight. We believe the areas designated for sanctuary (3,185 acres) are sufficiently large to reduce the detrimental effects of all forms of disturbance, including those resulting from hunting activity.

Also, based on responses from the CCP public comment period, we have revised the final CCP/EIS to not open hunting on Prime Hook Creek and most of Unit IV. Based on these revisions, the refuge would now include the following adjusted sanctuary areas: Unit II (~1,800 acres), the southern half of Unit III (~390 acres), and in Unit IV (~995 acres).

Comment: One individual writes, "Since you have allowed Unit III to deteriorate to a landscape with no aquatic foods other than invertebrates, why not keep the waterfowl hunting area as it currently exists until you have rehabilitated the marsh? Keep the salt marshes and the west end of the creek closed to waterfowl hunting. This will result in less damage to valuable salt marsh."

Response: Based on responses from the CCP public comment period, the Service has revised the final CCP/EIS to not open hunting on Prime Hook Creek and most of Unit IV. The possibility for new trails to be developed from repeated hunter entry may occur in all hunt areas, including salt marsh habitats. However, given the large expanse of both upland and wetland acreage, anticipated dispersal of hunters across hunting areas, the inherent nature of hunters to only travel as far as needed to find a hunting location, and knowing that most vegetative species will have already undergone senescence or become dormant, the impacts to vegetation are expected to be negligible from hunting as discussed in "Impacts to Vegetation" in chapter 5 of the final CCP/EIS.

Furthermore, Anderson (1995) found that salt marsh habitats are more resistant to human trampling when compared to other habitats such as a natural dunes, manmade dunes, and manmade coastal grasslands. This study analyzed the vegetation of five paths (one in each of the habitats) created and sustained by human trampling and reported that trampling of vegetation (estimated to be 1,815 to 3,630 passages per year) can be considered as very light. Even though it created paths and reduced vegetation cover and species diversity, the paths still retained a persistent vegetation (Anderson 1995). Even using inflated and unlikely estimates of free roam use in refuge salt marsh habitats for deer and waterfowl hunting, the impact from the trampling of vegetation would be considered very light and consistent with the findings reported in Anderson (1995).

Comment: One individual writes, “A question on why Fields along Prime Hook Road were opened to waterfowl hunting was answered – at public meetings there are some small ponds there. Those ponds contain state rare plants, which you claim you will protect. Is opening these fields another ‘open the max’ mentality or is it a prelude to a return to farming and opening field hunting to support state needs?”

Response: The area south of Prime Hook Road has provided deer and upland game hunting opportunities in the past and will now provide opportunities to hunt waterfowl. This area has been previously open to hunting of webless migratory birds, including dove, woodcock, and snipe. Scattered throughout this area are ponds in the wooded areas, a larger pond referred to as Miry Pond, and the marsh adjacent to the State-owned Prime Hook Wildlife Area that will now provide quality waterfowl hunting experiences. Fields in this area are proposed to become either forested or shrubland and will not be suitable for waterfowl hunting. The majority of hunters will choose to hunt in the larger ponds and marsh areas and not the smaller ponds, which are located near the road. Two of these small ponds were reported to have state rare flora when surveyed in 2004-2005, which was prior to salt water intrusion into refuge wetlands. We recognize that there will be a loss in habitat and wildlife diversity due to the effects of saltwater intrusion and those impacts have been addressed in the chapter 5 of the final CCP/EIS.

Comment: One individual writes, “Hunting in the salt marshes, particularly in Unit I, will result in excessive loss of birds due to the numerous mosquito control OMWM ditches.”

Response: We respectfully disagree. Ditches created from Open Marsh Water Management (OMWM) and grid ditching are common on the refuge and throughout Delaware’s salt marshes, where waterfowl hunting has occurred for years. By law, hunters must make a reasonable effort to recover downed birds in their respective hunt area and the Service believes that the vast majority of hunters go above and beyond a reasonable effort.

Comment: One individual writes, “Keep it in the same area with the addition of a proposed “run and gun” area in unit 1, however no jumpshooting. Don’t open PMH Creek to hunting as it’s a roost area. Don’t open blind sites on Broadkill River across from a neighbor’s permanent duck blind.”

Response: Based on responses from the CCP public comment period, the Service has revised the final CCP/EIS to not open the areas along the Broadkill River and west of Foord’s Landing on Prime Hook Creek to hunting. Please see similar comments and responses regarding free roam hunting under “Hunting Safety, Including Conflicts with Other Users and Adjacent Landowners.”

Waterfowl Hunting – Blinds

(Letter ID#: 4, 9, 14, 15, 16, 17, 28, 31, 32, 36, 37, 43, 53, 60, 64, 73, 77, 80–Petition, 81, 88, 92, 95, 97, 98, 100, 103, 104, 105, 106, 108–Form Letter, S16)

Comment: Many commenters noted waterfowl hunting should stay the same with the blinds provided. For example, the form letter states, “Blinds are a must with waterfowl hunting.” Many were particularly concerned about the impacts of removing waterfowl blinds on youth and older hunters and public safety. One individual writes, “In order to provide a quality hunting experience for ALL hunters, these blinds MUST be maintained. Hunting from a boat is far too dangerous for adolescent hunters just learning to properly handle a firearm, and too physically demanding for aging hunters...[free-roam areas provide little to no hunting opportunities for these group]...It is my belief that the USFWS has the responsibility to provide equal opportunities to these age groups.”

However, several individuals were ambivalent about, or supported, phasing out waterfowl blinds. One felt that going to blind stakes since it provides hunters with an opportunity to adapt to changing environments. Another says, “I could live with this change, but we will need better markings for blind sites and ditches.”

Another individual suggested compromise. He writes, “I am probably the exemption to most hunters that have contacted you & I would like to see the blinds removed & have just blind sites. I also understand the desire some people have for keeping blinds, especially for children or older hunters. Maybe a compromise & remove 1/2 to 3/4 of the blinds & replace them with blind sites. This will reduce your management costs some & still provide a protected area to hunt from.”

Response: We appreciate the concern with the planned phase out of permanent waterfowl hunting blinds on the refuge. This is a difficult issue due to the number of hunters involved and the strong traditions that have developed. Hunters have expressed an interest in scouting and/or the ability to adjust their hunting locations for weather conditions to enhance the quality of their hunt. Upland habitats on the Refuge are expected to change with more acreage proposed to be managed in forests and grasslands, further emphasizing the need allow hunters the freedom to choose how and where they hunt (See also comments and responses under “Hunting Safety, Including Conflicts with Other Users and Adjacent Landowners”).

Comment: The form letter states, “Offer some field blinds in Units II, III, and IV. Hunting the field blinds the same days as the waterfowl blinds.” Another individual suggests the following: “Place A-frame blinds in some fields similar to Bombay Hook [National Wildlife Refuge] for more opportunities.”

Response: We appreciate the suggestions. However, under alternative B, we propose to eliminate cooperative farming and plan to either reforest these fields or allow them revert to shrubland. Because of this, there will not be quality opportunities to hunt from field blinds in these Units.

Comment: Many commenters were concerned that the refuge is planning to remove some of the most productive waterfowl hunting blinds on the refuge, specifically blinds 17, 19, 20, 21, and 32. For example, one writes, “No to shutting down the 6 south side blinds. It is the best hunting at Prime Hook.” Several also felt that the proposed new hunting areas would not offer quality waterfowl hunting opportunities.

Response: Based on responses from the CCP public comment period, the Service has revised the final CCP/EIS to keep the area where these blinds are located open to waterfowl hunting. Proposed waterfowl hunting areas now include Unit I (free-roam hunting), Unit III (south of PH Road-free roam hunting; the lottery hunt area which now includes the area south of the HQ Ditch), Unit IV (disabled blind only). The area near Prime Hook Beach for disabled hunters is now closed and all disabled waterfowl hunting will be in the current wheelchair accessible blind in Unit IV. Areas of free-roam hunting along the Broadkill River and hunting west of Foord’s Landing on Prime Hook Creek are now closed.

Comment: Several individual suggested using volunteers to maintain permanent waterfowl blinds. One writes, “...if it is because of money, have us volunteers help out to manage them, or raise the regular drawing fees up and put some money to maintain them.” Another writes, “Is the proposed removal of hunting structures because of budget shortfalls?”

Response: Volunteers contribute great ideas and enthusiasm, and we are very supportive of expanding opportunities for volunteers at Prime Hook NWR. Volunteers contribute, and will continue to contribute, by helping with the success of the hunting program through maintenance and public outreach. The reasoning for proposed changes to the hunting program, including the removal of hunting structures, are discussed in detail in objective 5.1 of the Service’s preferred alternative in chapter 4 of the final CCP/EIS. Similar comments and responses can also be found under “Hunting Fees and Program Costs” in this appendix.

Comment: One individual is concerned that eliminating permanent waterfowl blinds may lead to conflicts among hunters. He writes, “I see blind sites causing problems amongst us hunters. I see hunters hunting outside of the designated areas causing a conflict amongst other hunters.”

Response: Although the permanent waterfowl blinds on the refuge are proposed to be phased out over a five-year period, hunters in the lottery area will be required to hunt within a defined area around a designated blind site (marker). This will minimize hunter conflict in an area historically known to attract large hunter numbers. Although some conflicts are expected, most hunters promote proper hunting ethics, are law-abiding, and are respectful to fellow hunters.

Comment: The Humane Society of the United States and one individual were concerned that adding additional blinds would negatively affect migratory birds. The individual writes, “Your proposed hunt would close blinds in the “sanctuary” area but add others, an increase of 5 blinds. Added to the marsh opening and the early teal season, the birds get the short end of the stick. So much for wildlife first. Is not the refuge purpose to manage for migratory birds?”

Response: We have included a complete analysis of the impacts to all wildlife, including waterfowl, in chapter 5 of the refuge’s final CCP/EIS (see also responses under “Hunting – General”). To minimize waterfowl disturbance, we have designated approximately 3,185 acres as waterfowl sanctuaries that will be closed to hunting and other recreational uses on a seasonal or annual basis. Given the dominant role of the refuge in the Atlantic Flyway migration corridor, this closed area system was established to provide waterfowl with a network of resting and feeding areas and to disperse waterfowl hunting opportunities on the refuge. These sanctuaries lie in Unit II (~1,800 acres), the southern half of Unit III (~390 acres), and in Unit IV (~995 acres). The northern portion of Unit IV, which contains a trail and observation platform, will be closed from the Monday before Thanksgiving to March 15 to also minimize disturbance to wildlife in this area. The southern portion of Unit IV will not be open to any public use. Waterfowl hunting will stop at 3:00 pm in all hunting areas and will be limited to four days per week to reduce disturbance to waterfowl feeding patterns, which in turn will result in high quality hunting experiences. We will also decrease disturbance by closing the Oak Island Area in Unit II, the area south of Fowler Beach Road in Unit II, and disabled deer hunting area in Unit IV in late November to hunting and by closing the Deep Branch Trail to non-consumptive users from September 1 through March 15. Literature reviews of visitor use and its relationship to disturbance to waterbirds support the time restriction and are reflected in the hunting regulations of other refuges, particularly in the Service’s Southeast Region (DeLong 2002).

The term “sanctuary”, as used in the context of the CCP, indicates an area free from hunting and other uses. A key feature of a sanctuary is to make it large enough that intrusions on its borders do not unduly disturb the normal lifecycle functions (e.g., feeding, resting, preening, and courtship), or cause the birds to take flight. We believe the areas designated for sanctuary are sufficiently large to reduce the detrimental effects of all forms of disturbance, including those resulting from hunting activity. Sanctuaries also allow birds to have adequate “escape distances”, which are defined as the shortest distance at which they flush or otherwise move away from the approaching person or other disturbing stimulus. Many factors influence escape distances such as hunting, flock size, hunger, migratory motivation, etc. Laursen et al. (2005) suggested providing a mean escape distance of the largest escape distances of a bird species plus one to two standard deviations to calculate the size of the core area or buffer zone. In their study, the largest escape distance was 1,000 meters for wigeon (other species included mallard, teal, pintail, waders, and gulls) and would be approximately 1,700 meters with two standard deviations. Based on this information, refuge sanctuary areas can accommodate the escape distances of most species.

More specifically, hunting on adjacent private property causes disturbance to waterfowl every year in the following areas: Unit I along the western boundary, Unit II along Cods Road and Fowlers Beach Road, Unit III along the southeastern portion near Broadkill Beach, along Prime Hook Creek, and in the state managed Prime Hook Wildlife Area, and Unit IV along the Broadkill River, Petersfield Ditch, and in salt marshes on the western boundary. Hunting has been open in all four units of the refuge and Unit I has been hunted for years by free-roaming hunters seeking deer and upland game in refuge salt marshes. Despite disturbance of waterfowl from vehicular traffic, refuge staff observe visitors year after year viewing and photographing waterfowl within 20 yards of vehicle even during the hunting season.

Comment: The Humane Society of the United States and the Delaware Audubon Society were concerned with the impacts on refuge habitats from removing waterfowl blinds. The Human Society writes, “1,723 acres of marsh areas that would be subject to lottery hunting, and where roam hunting would not be allowed, would be subject to serious habitat degradation and widespread elimination of habitat values (see Map 4-17, page 4-121 [of the draft CCP/EIS]). This would occur for two reasons. First, Alternative B requires that the permanent duck blinds in place be destroyed and removed from the refuge. Eliminating these structures will result in serious habitat degradation and destruction because multiple trips back and forth through the marsh would be necessary. In addition, habitat degradation would be accelerated because each blind removed would be replaced by a stake; some new stakes also will be added for a total of 24. Each of these stakes will be the point around which hunters, within a certain radius of the center stake, will be required to set up their hunting site each day that hunting is allowed.”

Response: We respectfully disagree. Providing elevated deer stands, and to a lesser degree waterfowl blinds, is relatively unique to Delaware. There are many areas on the Delmarva Peninsula, other than the refuge, that offer public hunting opportunities in free-roam areas where the hunter is required to provide the blind or stand, if desired (refer to previous comment/response regarding free-roam hunting for more information). In fact, deer hunters have been free-roam hunting in Unit I of the refuge for years and upland game hunters free roam hunt in areas in Unit I, Unit II, and Unit III with negligible impacts to habitat. Free-roam hunting of deer was permitted in all deer hunting areas between 9am and 3pm up until the 2002-2003 hunting season, but was prohibited due to complaints of unethical hunting behavior such as harvesting deer from the stands of other hunters. Access to existing waterfowl blinds is by boat and the majority of new blind site locations will also require a boat to access them, which would result in the same negligible disturbance currently observed under the current hunting program. In fact, many of the hunters may opt to hunt from their boat, using it as a blind. Some vegetative disturbance is expected around blind site markers and is expected to be negligible.

Turkey Hunting

(Letter ID#: 15, 26, 28, 29, 67, 71, 73, 81, 90, 93, 107)

Comment: We received many comments on turkey hunting. The Delaware Division of Fish and Wildlife and a few individuals supported the proposal to offer turkey hunting. The Delmarva Ornithological Society and four individuals opposed the proposed turkey hunt, while another felt like there needed to be better turkey population counts before allowing hunting to occur. Those who opposed turkey hunting cited the following reasons:

- Concerns that “turkeys are not in sufficient abundance to warrant hunting” and that the Service and Delaware Fish and Wildlife “are understaffed” and may not be able to get an accurate count of turkeys on the refuge.
- Concerns that turkey hunting would conflict with other users by closing roads, trails, and other refuge areas during the hunting season and lowering the refuge’s turkey population or changing their behavior, ultimately resulting in reduced wildlife viewing opportunities. One individual feels the draft CCP/EIS fails to consider the negative impacts of turkey hunting on birdwatchers and other users. He also points out that many more people come to the refuge to bird and watch wildlife than to hunt. Another writes the opening over 3,000 acres of the refuge to turkey hunting will, “severely impact...birding due to closed areas in April/May for hunting. This is prime birding time. Will the office area be closed during hunting?”
- Concerns about the impacts of turkey hunting on refuge habitats. One individual states that allowing turkey hunting in refuge salt marshes “will have significant adverse impacts on salt marsh vegetation during a critical time of the year when new and vulnerable wetland plants emerge.”

Response: We respectfully disagree. Turkey hunting, which occurs in April and May, is expected to have negligible impacts on birding because only designated areas of the 3,729 acres will be open. We would only issue five or fewer turkey hunting permits and the vast majority of the refuge would remain open to wildlife observation and other non-consumptive uses during the turkey hunting season. We will post notices of any closures (i.e., on designated dates until the end of legal shooting hours, which is 1:00pm) on the refuge’s website and in press releases.

Turkey hunting is not expected to have direct, indirect, and cumulative impacts on refuge salt marsh habitats because hunter numbers are limited to less than five and are scattered over 1,732 acres. The preferred habitat of wild turkeys is mature or old growth forests due to both the structural characteristics and food production in such habitats. We believe that the salt marsh in Unit I would seldom be used by turkey during any stage of its lifecycle and consequently seldom hunted. Wild turkeys take advantage of different habitats throughout the year based on their food and nesting needs. In the fall, turkeys forage in mast-producing stands of oak/hickory, oak/pine, and hardwoods. Turkeys favor hardwood stands with south-facing slopes are favored in winter and need large softwood or hardwood trees for roosting. In winter, turkeys often forage on agricultural lands. We aware that free-roam areas for turkey hunting will provide hunters greater access and may also increase the potential for marsh disturbance. However, hunters are aware of the species habitat preferences and would direct their hunting efforts accordingly within the defined hunt unit. Any potential disturbances are mitigated by creating salt marsh sanctuary areas where no hunting occurs.

Comment: The Delaware Division of Fish and Wildlife writes, “The CCP indicates that there will be a \$10 daily fee for a turkey permit and a \$5 application fee for the preseason turkey lottery. Since the Division will be administering the preseason turkey lottery, how will these fees be implemented?”

Response: The partnership between the Delaware Division of Fish and Wildlife and the Service provides unique opportunities to lower costs for both agencies across many of the programs that they share, such as the hunting program. Since the Division may be administering the turkey lottery, the Service plans to waive the application and permit fee for the hunter. In the event that unanticipated circumstances prevent the Division from administering the lottery during the next 15 years of the CCP, then the Service will conduct this lottery and the fee structure presented in the CCP and Hunting Management Plan will take effect.

Comment: The Delaware Division of Fish and Wildlife “recommends allowing turkey hunting on the refuge till 1:00 pm, as this would be consistent with management on State areas (both wildlife areas and state forests) providing familiarity and reducing complexity to turkey hunting regulations within the State. A noon closure would create a confusing situation.”

Response: The Service agrees that consistency with state hunting regulations reduces complexity. We have revised the final CCP/EIS to allow turkey hunting on the refuge until 1:00 p.m.

Comment: One individual writes, “What is a ‘hunnable’ population [of wild turkey]? Who determines this?”

Response: As used in the draft CCP/EIS, a “hunnable” population of turkey is a population of sufficient size to support harvest of a limited number of male birds each spring without jeopardizing population viability. Wild turkey is a resident game species managed by DNREC’s Division of Fish and Wildlife. Prime Hook NWR falls within Zone 9 of DNREC’s Wild Turkey Management Regions and the refuge will work closely with DNREC to evaluate the status of the turkey population and its hunting potential. Zone 9, which includes the State-owned Prime Hook Wildlife Area that is adjacent to the refuge, is currently open during the spring turkey hunting season. To ensure a sustainable harvest of the state’s turkey population, DNREC biologists track their health, distribution, and reproductive success. Current efforts include a volunteer-based survey used to generate an index of annual turkey productivity and recruitment, monitoring turkey harvest and hunter efforts, tracking turkeys with radio transmitters to evaluate their reproductive ecology, habitat use, and survival, and evaluating the genetic diversity of turkeys.

Comment: Several respondents wondered if it was worth all the planning “to open up 3,000 acres for turkey hunting for an extremely small number of refuge users.”

Response: Hunting is one of the priority public uses mandated by the National Wildlife Refuge System Improvement Act of 1997 and hunters will benefit from a new hunting opportunity. The refuge hunt program is expected to have an overall beneficial impact on wildlife as hunting provides opportunities for visitors to become interested in and enjoy quality wildlife and outdoor experiences and potentially learn about, understand, and support natural resource protection and management.

Hunting for Individuals with Disabilities

(Letter ID#: 5, 13, 28, 32, 36, 57, 107, 108–Form Letter)

Comment: Some commenters asked that the refuge find a way to provide specific hunting opportunities for non-ambulatory disabled hunters separately from ambulatory disabled hunters, because under the current system ambulatory disabled hunters can get equal access to handicapped-accessible blinds, leaving non-ambulatory disabled hunters with very limited hunting opportunity on the refuge.”

Response: The refuge’s proposed action in the CCP offers opportunities for all disabled individuals. We propose to reestablish hunting areas for disabled hunters permanently confined to wheelchairs for movement to ensure that these individuals have opportunities for quality deer and waterfowl hunting experiences. This is proposed in Objectives 5.1a and 5.1b in alternative B. Hunters confined to wheelchairs have limited mobility and there are no opportunities on the refuge to hunt unless refuge staff provides them with accessible infrastructure such as ground blinds with vehicular access. These hunters do not have the option to hunt other areas, as they are limited by the accessibility that the refuge provides them. Since there are no other reasonable accommodation options for non-ambulatory individuals to hunt in other areas of the refuge, we feel it is important to provide specific areas for them. Other disabled, yet ambulatory hunters are provided opportunities to hunt in the free-roam areas, are not required in any fixed location, and may choose how far they are capable or willing to travel to hunt. Because these proposed changes do not exclude hunters with other types of disabilities from the refuge’s hunting program, these methods comply with the intent of the Americans with Disabilities Act.

Non-ambulatory hunters have commented about their frustration with the current hunting system. The number of non-ambulatory hunters on the refuge has decreased since 2005, when access was granted to all individuals with any permanent disability (not just non-ambulatory hunters) to hunt in the disabled hunting area along with additional hunting days. Hunter success rates for deer have also decreased from an average of 32% from 2000-2005 to an average of 18% from 2005 to present.

Comment: One individual suggests, “Keeping the stands in to allow these to be for the helpers of the disabled hunters”

Response: Although we recognize the important assistance that these helpers provide for disabled hunters, we do not plan to offer them a special privilege over and above other hunters.

Table M.1. Letter ID Numbers and Respondents

Letter ID Number	Name/Organization
1	Robert Sylvester
2	James W. Bailey
3	Lester (Rusty) Pride
4	James D. Gormley
5	Michael Joswick
6	Melaine Hoff
7 (see also 19)	William H. Meredith
8	Marjorie Snee
9	Scott H. Willey
10	Barry V. Hollingsworth
11	John Mitrisin
12	Pat Nicosia
13	John Joswick
14	Jordan L. Reynolds
15	Derek Anderson
16	Scott Riniker
17	Anonymous
18	Larry Brown and Vicki Brown
19 (see also 7)	William H. Meredith
20	Amy J. Reed Parker
21	Lucy Huffman
22	"Jean Public"
23	Robert Hughes
24	Richard Weiner, John Chirtea, John Nicosia, Raymond Medvedik, Richard Rogers, and Jeff Mahle
25	Gabi Gail
26	Lee Noles
27 (see also 82)	Prime Hook Beach Organization – Richard S. Allan, Cindy Miller, David Allwood, Thomas Burke, Richard Capoasso, Carson, Huffman, Joe McCann, Diance McConnell, John Robinson, and Barbara Vandegrift
28	Charles N. Darling
29	David Weber
30	C. Kersey
31	Ricky Chorman
32	Ron Krakowski
33	Alliance of Bay Communities – Lisa Jones, James W. Bailey, Cindy Miller, Amy Parker, Caroline Schwartz, Kelly Reavis, James Krikbride, and Glenn Gauvrey

Service Responses To Comments By Subject

Letter ID Number	Name/Organization
34	Canoe Cruisers Association of Washington, D.C. – Edward Gertler
35	Broadkill Beach Preservation Association – James W. Bailey, James Bartlett, Bob Betts, Ray Burton, Robert Conte, William Fisher, Elvin Hold, Tony Keen, William Lawson, Mandell Much, George Naegele, Chales Sammartino, Richard Snyder, and Theodore Wallius
36	John Joswick, Jr.
37	Ralph W. Holston, Jr.
38	Delaware Riverkeeper Network – Jane P. Davenport
39	Sussex County Councilwoman Joan Deaver
40	Andrew (Drew) Miller
41	Jeff Horvat
42	Cathy McCarthy
43	Tyler Brown
44	The Delaware Nation – Jason Ross
45	Richard Weiner
46	Karolyn Schrufer
47	Ethan Boden
48	Kevin Nichols and Laura Nichols
49	Milton H. Maslin, Jr. and Dorothy K. Maslin
50	Anna Kavalauskas
51	The Center for Food Safety – Ryan L. Crumley, George Kimbrell, Paige Tomaselli, and Sylvia Wu
52	Cynthia Lyons and John Lyons
53	Keith Calvert
54	Ducks Unlimited – Bernie Marczyk
55	Mark J. Wells
56	Keith Snyder
57	Scott R. Ward and Wayne Carter
58	Anonymous
59	James P. Offutt
60	Jarrold Gormley
61	Chris Argo and Jackie Argo
62	Terri T. DeVore and Lawrence M. DeVore
63	Timothy Donofrio
64	Town of Slaughter Beach – Mayor Amy J. Reed Parker
65	Jack B. Gingrich
66	G. Ronald Shoop and Christiane Shoop
67	William A. Fintel
68	Reginald D. Hill

Letter ID Number	Name/Organization
69	Delaware Chapter of the Sierra Club – Amy Roe
70	Bill Krause
71	Public Employees for Environmental Responsibility – Jeff Ruch
72	U.S. Environmental Protection Agency – Jeffrey D. Lapp
73	James B. Remaily
74	Fred A. Bennett, III
75	Kris O. Battaglini
76	John Pleisse
77	Matt Burton
78	Dale Lindsay and Eleanor Lindsay
79	George Walker and Laurel Walker
80	Save Our Beach Petition – Cheryl C. Myers, Pamela M. Schaefer, Bill Krause, Ellen Barag, Carol Ramos, and Patricia Catanzariti
81	George F. O’Shea
82 (see also 27)	Prime Hook Beach Organization – Cindy Miller
83	David R. Kemper
84	Michael Short
85	Suzie
86	Richard S. Huffman and Lucy T. Huffman
87	Terry Rahmeier
88	Lisa Jones
89	Rick McCorkle
90	Glenn L. Garner
91	Richard S. Allan
92	Richard Clifton
93	Delmarva Ornithological Society – Matthew Sarver
94	Dr. and Mrs. Robert Sutcliffe
95	Kyle Hamilton
96	Defenders of Wildlife – Julie Kates
97	Hank Draper
98	Delaware Department of Natural Resources and Environmental Control – Division of Fish and Wildlife, Mosquito Control Section – David E. Saveikis
99	John Nicosia
100	Kenneth Morris
101	Jana Hood
102	Delaware State Senator Gary Simpson
103	Anonymous

Letter ID Number	Name/Organization
104	Delaware Audubon Society – Mark Martell
105 (see also 106)	The Humane Society of the United States – John W. Grandy
106 (see also 105)	The Humane Society of the United States, The Pegasus Foundation, and Delaware Votes for Animals – John W. Grandy
107	Delaware Department of Agriculture, Delaware Department of Natural Resources and Environmental Control, and Delaware Department of Transportation – Edwin Kee, Collin O’Mara, Shailen Bhatt
108	State of Delaware Historical and Cultural Affairs – Craig Lukezic

Table M.2. Public Meeting Speakers ID Numbers and Names

Speaker ID Number	Name/Organization
S1	Joe McCann
S2	Richard Huffman
S3	Prime Hook Beach Organization - Rick Allan
S4	Jim Bailey
S5	Richard Rogers
S6	Michael Volzone
S7	Karl Schweiger
S8	Larry Devore
S9	John Nicosia
S10	Otis Clifton
S11	Doug Sentman
S12	David Harris
S13	Bill Krause
S14	Mike Charney
S15	DNREC, Division of Fish and Wildlife, Mosquito Control Section - Bill Meredith
S16	Hank Draper
S17	David Webber
S18	Humane Society of the United States and Delaware Votes for Animals - John Grandy
S19	Sussex County Councilwoman - Joan Deaver