Finding of No Significant Impact

NARROW RIVER ESTUARY RESILIENCY RESTORATION PROGRAM

December, 2014

On October 30, 2014, the U.S. Fish and Wildlife Service (Service) published an Environmental Assessment (EA) for the Narrow River Estuary Resiliency Restoration Program, consistent with the requirements of the National Environmental Policy Act (NEPA) (42 U.S.C. § 4321 *et seq.)*.

This EA was developed to evaluate a proposal to restore estuarine and salt marsh habitats in the Narrow River Estuary (estuary), in the towns of South Kingstown and Narragansett, Washington County, Rhode Island. Much of the project area is located within the John H. Chafee National Wildlife Refuge. The proposed restoration is needed to restore and enhance salt marsh and estuarine conditions, and to increase the ecological resiliency of the estuary in the face of sea level rise, climate change, increased coastal storms, and other natural and anthropogenic trends and impacts. This need was made apparent by the impact of Hurricane Sandy in October, 2012. The proposed action was funded under the Disaster Relief Appropriations Act of 2013 (Public Law 113-2), and will help achieve the mission of the National Wildlife Refuge System, as well as the purposes for which the Chafee Refuge was established.

Section 2 of the EA describes the purpose and need for the proposed action: specifically, ongoing and projected degradation and loss of salt marsh and estuarine habitats in the estuary. Section 3 describes the mission and goals of the Chafee Refuge and the National Wildlife Refuge System, while Section 4 provides issues and concerns about the estuary and the proposed project raised by the public and the Service.

Section 5 of the EA provides a detailed description of the affected environment, including an overview of the estuary, public use and recreation, water quality, tidal flows, salt marsh habitat, marine and essential fish habitat, wildlife resources including shorebirds and waterbirds, and rare species such as the salt marsh sparrow *(Ammodramus caudacutus)*. This section provides detailed description of the habitats and resource values in the estuary, and describes trends of wetland loss and estuarine changes based on historic maps, aerial photography, and other data sources. Section 5 of the EA uses current scientific literature and site-specific data and analyses to evaluate the causes of these trends, and concludes that the problems are caused by poor water quality, sea level rise, climate change, poor surface drainage, insufficient marsh elevations, insufficient estuarine depths, accelerated shoreline erosion, and other natural and anthropogenic factors. This conclusion is based in part on the findings of a group of experts on estuarine and salt marsh ecology and habitat restoration convened by the Service in early 2014 to assist in evaluating the causes of habitat impacts in the estuary, and to identify potential options for restoration.

Section 6 of the EA evaluates two potential alternatives for preserving and restoring fish and wildlife habitats while enhancing ecological resiliency in the Narrow River Estuary. These are summarized below, along with alternatives that were initially considered, but eliminated from further study. Alternative 2 is identified as the Service's preferred Alternative and Proposed Action.

Alternatives Considered but Eliminated from Further Study: The Service considered but eliminated several potential actions. These were:

- Use of hardened shoreline structures for shoreline and channel restoration: Eliminated in order to maintain consistency with state coastal requirements, specifically the Narrow River Special Area Management Plan under the jurisdiction of the RI Coastal Resources Management Council.
- Dredging of flood tide delta in the Lower Narrow River below Sprague Bridge: Eliminated due to the potential for adverse impacts, specifically, increase in high tide elevations in the estuary; waterlogging and increased damage to salt marshes; and potential property flooding impacts. Detailed hydrodynamic modeling would be needed to fully assess this alternative.
- Acquire property for inland marsh migration: Suitable areas are limited and funding is not available for this potential action.

Alternative 1, No Action: As required by NEPA, the Service evaluated the no-action alternative. Under this action, the salt marshes and estuarine habitats of the Narrow River Estuary will continue to deteriorate and decline, leading to loss and degradation of salt marsh habitat, loss and degradation of estuarine fish habitat, loss of recreational and cultural value, and loss of fish and wildlife populations. Under the no-action alternative, it is expected that the salt marsh sparrow may lose all nesting habitat in the estuary, contributing to the potential extinction of the species by 2050.

Alternative 2, Proposed Action, Restore Estuarine Habitat and Salt Marshes: Section 6 of the EA describes a proposed alternative to preserve and restore estuarine habitats and salt marshes, improve fish and wildlife habitats, and enhance ecological resiliency in the Narrow River Estuary. This alternative consists of an integrated set of strategies (actions) designed to enhance key estuarine components with the goal of restoring conditions and improving resilience to sea level rise, climate change, and future storm events. These actions would be implemented over approximately the next three years. The six integrated strategies are summarized below, while details related to implementation of the various actions, including mitigation measures, management controls, project timing, maps, and tables, are provided in Appendix G of the EA.

- Action A. Watershed and Water Quality Restoration: The intent of this action is to improve water quality and flushing through the following measures:
    - Intensify ongoing, long term water quality monitoring to locate priority sites for water quality abatement actions.
    - Survey, design, and install best management practice (BMP) sites in the Mettatuxet drainage in Narragansett and at Kimberly Drive in South Kingstown.
    - Improve flushing and water circulation in Upper Pettaquamscutt Cove by removing remnants of a narrow gauge railroad line.
    - Enhance flushing potential by removing excess materials from historic channels as described under Action B.
- Action B. Eelgrass management, estuarine channel and basin restoration: This action would enhance marine fisheries habitat by excavating limited areas of the estuary within historic channels and recent depositional areas. Basins and channels will be deepened by removing existing sediments to a depth of approximately -5 feet NAVD88. This action will establish approximately 7 acres of deeper estuarine areas, suitable for eelgrass habitat and serving as thermal refugia and passage for important estuarine fish species. To ensure no significant loss of upper tidal flat habitat for important shore and wading birds

and shellfish, over three acres of tidal flat will be created or enhanced. As shown in Appendix G, 35,629 cubic yards of material will be excavated. Sediments removed from restoration areas will be repurposed for beneficial re-use in restoring degraded and lost salt marshes (Actions D and E, below). Excavation and placement of materials will be accomplished with the use of an excavator on a barge; activities will only occur during the winter dredging window of November 15 through January 31. A staging area would be temporarily constructed at the northwest corner of Sprague Bridge on National Wildlife Refuge lands.

- Action C. Restore Salt Marsh Shorelines: This action will restore salt marsh shorelines by installing "living shoreline" treatments along approximately 7% of shorelines in the estuary, targeting areas with serious bank stability issues. This approach uses fiber (coir) logs and bagged oyster shell to stabilize eroding marsh edges, and has proven effective in pilot-scale applications by RICRMC and The Nature Conservancy, demonstrating effectiveness in enhancing marsh edge habitat through re-vegetation and colonization.
- Action D. Restore Salt Marsh Surface Hydrology through Drainage Restoration/Runnels: Degraded salt marshes will be restored by improving surface drainage using the "runnel" method—excavating shallow (generally 8" to 12" or less in depth, and two feet wide) channels on the surface of the marsh to provide surface drainage. This action is intended to help restore growing conditions for marsh vegetation while improving habitat and productivity of small estuarine fish. This action will target areas of recent vegetation loss while preserving historic pools and pans on the surface of the marsh. This action will be implemented on 46.9 acres, or 27% of the total salt marsh, and will be undertaken through an adaptive approach—beginning small scale in the first year, and then evaluating the need and opportunity for continued hydrologic restoration.
- Action E. Restore lost low marsh, restore degraded marsh, and enhance resiliency to sea level rise through restoration of intertidal elevations: This action will increase low marsh habitat, restore degraded salt marsh, and increase salt marsh elevations to enhance resiliency in the face of sea level rise by repurposing sediments dredged under Action B (Eelgrass Restoration), for beneficial use through thin layer deposition (TLD) of dredged sediments. This action will re-establish 1.2 acres of historic low marsh and will restore approximately 14 acres of degraded marsh, using equipment on barges and the staging area near Sprague Bridge as described above. Areas with greater than 3 inch application of sediments will be planted with native salt marsh plants.
- Action F. Test Treatments to Enhance Conditions for Marsh Migration: In order to facilitate natural marsh migration, the Service is proposing to girdle approximately 24 trees to release understory plants in the vicinity of Starr Drive, Narragansett on National Wildlife Refuge lands. The girdling will kill the trees and allow nearby salt marsh to migrate landward with sea level rise, thereby reducing net loss rates of salt marsh.

Section 6 of the EA also describes monitoring efforts which will be used to assess the effectiveness of the proposed alternative and provide information for adaptive management as needed. Monitoring parameters include estuarine fish, salt marsh nekton, water quality, tidal flow and volumes, shoreline conditions, salt marsh elevations, and bird usage.

Section 7 of the EA evaluates potential impacts of Alternatives 1 and 2. This section concludes that the no-action alternative will have little or no short-term impacts, but will allow the continued decline and loss of salt marsh and estuarine habitats in the estuary, with commensurate loss of ecological

resilience, estuarine functions and values, and value for human use, recreation, and cultural values.

Alternative 2, the preferred alternative and proposed action, by contrast will help to preserve and restore salt marsh and estuarine habitats and ecological resiliency. Alternative 2 will improve fish and wildlife habitat, health and populations, and will best provide for human use, recreation and cultural values. This finding is based in part on an Essential Fish Habitat (EFH) Assessment provided as Appendix F to the EA. Alternative 2 will have minor, short-term negative impacts, such as limitation of public use of the Service's boat ramp during the winter due to construction operations. However, negative impacts will be avoided or minimized to the extent practicable, and are not deemed significant. Further, all actions will be submitted for state and federal environmental permitting; approval will be obtained before implementation, and all permit conditions adhered to. Alternative 2 therefore best supports Congressional intent in providing for Hurricane Sandy response, as well as the mission and purpose of the Chafee Refuge.

We distributed the EA for a 30-day period of public review and comment from October 30, 2014, to November 30, 2014. During the comment period, 1 letter was received representing 44 individual comments. All comments were assessed during the content analysis process. Appendix H in the Final EA includes a summary of those comments and our responses to them.

After reviewing the proposed management actions, and considering all public and agency comments and our responses to them, we have determined that the analysis in the EA is sufficient to support my findings. We are selecting Alternative 2, as presented in the EA, with the following changes recommended by the planning team, to implement as the Final EA. Changes made to Alternative 2 in the Final EA are:

1. Materials to be removed in the area of the former railroad trestle in Upper Pettasquamscutt Cove (Action A) will not be placed as fish habitat in the Cove, but will be removed for upland disposal. This change is made in response to comments by the National Oceanic and Atmospheric Administration indicating that removal of the materials would be more beneficial to EFH and managed species.

2. Materials excavated for eelgrass restoration (Action B) may be temporarily stored in an upland area near the staging area before application of TLD (Action E). Sediment controls and other best management practices will be utilized as necessary to ensure no adverse impacts from such storage. This change is based on discussion by state and federal regulatory agencies on November 13, 2014.

3. The Service will delay implementation of Action A, Water Quality Restoration, and limited portions of Actions B and E (specifically, relocation of the Sedge Island Channel, Units 11 and 12 in Figure B1 in Appendix G of the EA) subject to further engineering and regulatory review. The Service, however, includes these actions in our Finding of No Significant Impact, and will proceed without delay to implement all other components of Actions B and E. This change is also based on discussion by state and federal regulatory agencies on November 13, 2014.

4. We corrected all format and typographical errors that were brought to our attention.

We concur that the modified Alternative 2, including the above changes, helps fulfill the mission of the National Wildlife Refuge System; best achieves the John H. Chafee National Wildlife Refuge purposes, vision, and goals; maintains and, where appropriate, helps restore the refuge's ecological integrity; addresses the major issues identified during the planning process; and is consistent with the principles of sound fish and wildlife management. Specifically, in comparison to the no-action alternative, modified Alternative 2 will preserve and restore salt marsh and estuarine habitat, and will enhance ecological resiliency in the Narrow River Estuary, as mandated by Congress in response to Hurricane Sandy. Modified Alternative 2 will restore and preserve nesting habitat for the salt marsh sparrow; improve estuarine fish habitat through increase of eelgrass habitat and thermal refugia; maintain feeding and resting habitat for wading and waterbirds; improve wetland and estuarine functions and values; and will benefit human uses such as recreation and cultural uses. The proposed restoration actions are reasonable, practicable and will result in the most efficient management of the national wildlife refuge and best serve the American public. This Finding of No Significant Impact includes the EA by reference.

We have reviewed the predicted beneficial and adverse impacts associated with Alternative 2 that are presented in Section 7 of the EA, and compared them to the no-action alternative. We specifically reviewed the context and intensity of those predicted impacts over the short and long-term, and considered their cumulative effects. We have also determined that the proposed changes to Alternative 2 described are within the scope and scale of the alternatives analysis conducted in the EA and no additional analysis is needed. Our evaluation concludes that implementing modified Alternative 2 will not result in any concerns with public health or safety, nor result in adverse implications to any unique cultural or natural characteristics of the geographic area, including wetlands or Federal-listed species. We find that implementing the modified Alternative 2 adheres to all legal mandates and Service policies, and will not have a significant impact on the quality of the human environment, in accordance with Section 102(2)(c) of NEPA. Therefore, we concluded that an Environmental Impact Statement is not required, and this Finding of No Significant Impact is appropriate and warranted.