Targeted Supplemental Environmental Assessment
For The Homestead Woolen Mill Dam Removal Restoration Project

Introduction

The Community-based Restoration Program (CRP), under the authority of the Fish and Wildlife Coordination Act, 16 U.S.C. 661, as amended by the Reorganization Plan No. 4 of 1970 and the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 is proposing to provide financial assistance to a restoration activity entitled "Homestead Woolen Mill Dam Removal Restoration Project," through a partnership with The FishAmerica Foundation, and directly through the NOAA Open Rivers Initiative. Other financial assistance for the project is being provided by the United States Fish and Wildlife Service (USFWS), New Hampshire Fish and Game Department (NHFGD), New Hampshire Department of Environmental Services (NHDES), The Nature Conservancy (TNC), and New Hampshire Corporate Wetlands Restoration Partnership (NHCWRP).

Purpose and Need for the Action

After reviewing the proposed project, we determined that the proposed action is in keeping with the purpose and need analyzed in the February 6, 2002 Programmatic Environmental Assessment (PEA) for the Community-based Restoration Program Implementation Plan and the June 23, 2006 Supplement (SPEA). Those programmatic documents analyze the impacts to the human environment generally resulting from the award of community-based grant funds to undertake a variety of coastal and marine habitat restoration activities. As described in the PEA/SPEA, certain site-specific impacts, such as impacts to properties eligible for or listed on the National Register of Historic Places (historic properties), and projects with the potential to adversely affect a federally threatened or endangered species or critical habitat (listed species) warrant additional analysis via a Targeted Supplemental Environmental Assessment (TSEA) to assess the potential for significant impact on the human environment. Specifically, the proposed action would have an adverse effect on the Homestead Woolen Mill and Dam and the West Swanzey Village Historic District which were both determined as eligible for the National Register of Historic Places, as well as the potential to adversely affect the federally endangered dwarf wedgemussel (*Alasmidonta heterodon*).

Formal consultation with the New Hampshire State Historic Preservation Officer (NHSHPO) was initiated in June, 2003, pursuant to 36 C.F.R. Part 800, of the regulations implementing Section 106 of the National Historic Preservation Act (NHPA), and a Memorandum of Agreement (MOA) between NMFS and the NHSHPO was fully executed in July 2009. The consultation between NMFS and NHSHPO concluded that the proposed undertaking will have an adverse effect on the Homestead Woolen Mill and Dam and the West Swanzey Village Historic District which were both determined as eligible for the National Register of Historic Places and the MOA includes mandatory stipulations for resolving those adverse effects. As part of the proposed action, NMFS

will implement those stipulations, which, for NEPA purposes, will mitigate the adverse effects to historic properties.

Formal consultation with the United States Fish and Wildlife Service (USFWS) was initiated in January 2009, in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.), due to potential impacts to dwarf wedgemussel (*Alasmidonta heterodon*), and a Biological Opinion (BO) was issued on July 17, 2009. The BO concluded that the proposed action is not likely to jeopardize the continued existence of the dwarf wedgemussel. This non-jeopardy determination was based on review of the current status of the dwarf wedgemussel in the Ashuelot River watershed and throughout its range, the environmental baseline for the project area, and the effects of the proposed actions, including beneficial effects and cumulative effects.

This TSEA tiers to and incorporates by reference the pre-existing PEA and SPEA in accordance with 50 C.F.R. §1502.20 and NAO 216-6, subsection 5.09a. This TSEA level of review is conducted in accordance with the implementation procedures described in the SPEA and appropriately focuses on consideration of effects to historic properties and listed species and means for mitigating those effects through consultation in accordance with Section 106 of the NHPA, as implemented by 36 C.F.R. Part 800, and Section 7 of the ESA of 1973, as amended (16 U.S.C. 1531 et seq.) Beyond consideration of site-specific effects to historic properties and listed species, our review of the proposed action has not revealed any substantial changes in the proposed action or new potentially significant adverse effects to other elements of the human environment which would require additional review in the TSEA or supplementation of the pre-existing NEPA documents.

Preferred Alternative: Description of Proposed Action

NMFS is proposing to fund removal of the Homestead Woolen Mill Dam in West Swanzey, New Hampshire, on the Ashuelot River. NMFS has been working with the dam owner (Homestead Woolen Mills, Inc.) and other project partners for several years to implement dam removal.

The Ashuelot River is an ecologically and culturally significant river in southwestern New Hampshire, flowing nearly 65 miles from its source in Pillsbury State Park until its confluence with the Connecticut River in Hinsdale, NH. The river was recognized as a state designated river by the NHDES Rivers Management and Protection Program for its natural and cultural resources in 1993. In addition, it is included in the Silvio O. Conte National Fish and Wildlife Refuge Act, administered by the United States Fish and Wildlife Service (USFWS), and has been recently targeted for conservation by The Nature Conservancy in its Land Conservation Plan for New Hampshire's Coastal Watersheds (2006) and River Continuity Assessment of the Ashuelot River Basin (2007). Despite the presence of multiple barriers within the watershed, there is high quality spawning habitat available for many diadromous fish species and the USFWS has identified the Ashuelot River as one of the four most important refuges for the federally-listed endangered dwarf wedgemussel.

Efforts to restore and enhance diadromous fish populations (including Atlantic salmon, American shad and blueback herring) in the Ashuelot River began in 1995 with the stocking of Atlantic salmon fry by the NHFGD and the USFWS. By 1998, the NHFGD had developed an Ashuelot River Restoration Plan to restore a significant portion of the river to its natural state and allow migratory fish passage. Today, the NHFGD continues to stock salmon fry, American shad, and blueback herring into the Ashuelot River in an effort to restore sustainable populations as barriers on the river are removed. Removal of the dam will allow fish access to important spawning and nursery habitat above the dam and is expected to contribute to ecological improvements associated with free-flowing river conditions in this segment of the Ashuelot River (e.g., water quality improvements, natural transport of sediment and nutrients).

The dam once provided water power to the Homestead Woolen Mill, located immediately west of the dam, as well as a box mill that was once located on the east side of the river near a remnant tailrace. Structural analysis by the New Hampshire Department of Environmental Services (NHDES) Dam Safety program and private engineers indicates that the dam structure, dating from 1850 and composed mostly of timbers and rock, is unsound, in danger of failure, and represents a significant safety hazard. The current owner, Homestead Woolen Mills, Inc., contacted state officials to discuss dam removal following a 1997 inspection that revealed multiple deficiencies and because the dam had become an economic and safety liability. The Town of Swanzey was offered the opportunity to acquire the dam but voted not to pursue its acquisition in 2006.

Removal of the dam is expected to take approximately 2 weeks of work and will include removal of the full vertical extent of the crib dam and causeway, including all metal, timber, concrete, and other introduced materials that may be present, and hauling the material to a landfill for disposal. All stone ballast removed from the dam area will be re-used to construct three rock vanes structures in the streambed below the dam to create grade controls and reduce the potential for scour or changes to the riverbank, stabilize the channel and provide additional protection to an historic bridge located upstream. Although the rock vane structures themselves will require large boulders, the stone ballast will be used to fill in the voids. Additionally, the structures will concentrate water flow toward the center of the channel to provide the most efficient fish passage for the targeted species, including American shad. Concrete abutments on either end of the dam will remain in place to protect the mill foundation.

Channel stabilization is necessary to protect upstream properties and infrastructure, including the Thompson Covered Bridge, a historic structure listed on the National Register of Historic Places in 1980 and located approximately 200 feet upstream from the dam. The center pier of the bridge is located within the river channel and its integrity is currently threatened by river flows. Dam failure or removal of the dam is expected to increase scour and further threaten the bridge's integrity. Design plans for the removal of the Homestead Woolen Mill Dam include the installation of three cross vanes within the river to create grade controls, stabilize the channel and provide additional protection to the Thompson Covered Bridge. Further stabilization of the Thompson Covered Bridge is being undertaken by the Town of Swanzey and Hew Hampshire Department of

Transportation (NHDOT) and will occur either prior to or concurrently with the proposed action. The Federal Highway Department is acting as lead federal agency for the stabilization project and has satisfied its own NEPA analysis, including Section 106 and Section 7 consultations.

No Action Alternative

Under the no action alternative, the CRP would not fund the proposal to remove the Homestead Woolen Mill Dam and the dam would continue to prevent diadromous fish passage to upstream foraging and spawning habitat. The Homestead Woolen Mills, Inc. would be responsible for upkeep and repair of the dam which serves no useful purpose.

Impacts of the Preferred Alternative:

Impacts to Historic Properties

Removing the Homestead Woolen Mill Dam, while providing access to habitat for diadromous fish, will have adverse effects on historic resources associated with disturbance of the existing dam. The Homestead Woolen Mill and Dam is part of a mill complex located adjacent to the Ashuelot River in West Swanzey, New Hampshire. The complex has undergone multiple periods of new construction and reconfiguration, with extant portions dating from 1866-1977 and includes an intact, mid 19th century timber crib dam with a wooden spillway, one of several constructed on the Ashuelot River in the 19th and early 20th centuries. The dam stretches 175 feet across the full width of the river and is comprised of 12-18 inch log cribbing that is spiked, bolted, and pegged together to form an inverted V shape, which is filled with rocks and covered with planks to create a smooth spillway. Dam safety reports indicate that customary rock fill used to anchor timber crib dams is largely missing. The dam is partially protected from the full weight of upstream flow by an existing gravel causeway once used to divert flow during dam repairs in 1966. The dam is in very poor condition and partially failed during flooding in October 2005, when high flows dislodged and ruptured downstream decking material along approximately half of the crest and downstream face of the dam closest to the Homestead Mill. Based on the current condition of the dam, it is likely that the dam will fully breach within the next several years. The current owner, Homestead Woolen Mills, Inc., contacted state officials to discuss dam removal following a 1997 inspection that revealed multiple deficiencies and because the dam has become an economic and safety liability. The Town of Swanzey was offered the opportunity to acquire the dam but voted not to pursue its acquisition in 2006.

The Homestead Woolen Mill and Dam were determined to be eligible for the National Historic Registrar of Historic Places as a single property in December 2008 under Criterion A, for its significant long term association with the economic development of West Swanzey, and Criterion C, by representing a significant and distinguishable entity whose components may lack individual distinction. The complex displays the progression of mill architecture in the 19th and 20th centuries. Dating from 1850, the Homestead Dam is significant as an example of a mid 19th century timber crib dam and is the only remaining timber crib dam on the Ashuelot River. Removal of the dam will cause the loss of these characteristics.

These structures are contributing elements of the West Swansea Village Historic District. The Village of West Swanzey was determined to be eligible for the National Historic Registrar of Historic Places on December 2008 under Criterion A and C. The community is significant for association with local grist, lumber, textile and woodenware manufacturing in the Ashuelot River valley in southwest New Hampshire during the 19th and early 20th centuries as well as a significant example of community planning and contains a well preserved grouping of civic, residential, and industrial buildings displaying 19th century architecture. Removal of the dam will cause the loss of these contributing characteristics.

Mitigation

NOAA entered into a Memorandum of Agreement (MOA) with the NHSHPO to resolve the potential adverse effects of the project. NMFS and the NHSHPO agree that the undertaking shall be implemented in accordance with stipulations provided in the MOU, including historic documentation, interpretation including the erection of a NH Highway Historical Marker and creation of a public walking tour to include the dam site, and visual assessments to monitor archeological sensitive areas located upstream of the dam with potential for erosion . Via the MOA these appropriate mitigative stipulations have been agreed to by all parties. These mitigation measures, therefore, are considered part of the proposed action.

Impacts to Listed Species

Following consultation with the USFWS in accordance with Section 7 of the ESA of 1973, as amended (16 U.S.C. 1531 et seq.), a Biological Opinion (BO) was issued that concluded the proposed action will not jeopardize the continued existence of the dwarf wedgemussel.

Consultation was initiated in January 2009 in a meeting with the USFWS New England Field Office (NEFO) to discuss the proposed action and its potential to effect the dwarf wedgemussel. A Biological Opinion (BO) on the effects of the proposed action and an associated project to stabilize the Thompson Covered Bridge was completed based on information provided in a May 2009 biological evaluation (Dwarf Wedgemussel-Endangered Species Act-Section 7 Consultation: Homestead Dam and Thompson Covered Bridge on the Ashuelot River, Vanasse Hangen Brustlin, Inc. and Biodrawversity 2009), Intra-Service Section 7 biological evaluation form, and electronic and phone correspondence between NEFO staff, project consultants, and the project manager (NHDES).

The dwarf wedgemussel is a federally listed species ranging from New Hampshire to North Carolina, in small creeks to deep rivers with suitable substrate. Human activity has significantly reduced its habitat with subsequent population decline and reduction in distribution of the species. Dwarf wedgemussel populations in the mainstem of the Connecticut River are currently separated from each other as well as from populations in the Ashuelot River by a series of dams. There are no populations below the Homestead Dam and the confluence of the Ashuelot and Connecticut Rivers and little if any genetic

exchange is possible. Mussels are scattered throughout a 15-mile stretch of the Ashuelot River and may number in the thousands. They are generally distributed in areas of free flowing river with sand, pebble, and gravel substrates. During intensive surveys conducted in 2003-2004, only two live animals were identified within the impoundment behind the Homestead Woolen Mill Dam.

Direct adverse effects of the proposed action may occur from the placement of fill materials on live animals during construction of rock vane structures, disturbance and mortality from marking and moving any mussels found within the project site, sedimentation from construction activities, and desiccation of mussels that may not be located and moved prior to the removal and subsequent drawdown of water. Impacts may be avoided or minimized by limiting the time of year in which construction may occur, limiting siltation during construction using appropriate erosion and sedimentation controls, and by relocating individuals to suitable, safer locations from areas where fill will be placed or in areas being dewatered during the impoundment drawdown. Indirect effects may include impacts to adult and larval mussels due to increased turbidity in the project site before vegetation become reestablished or when temporary cofferdams are removed.

The majority of the dwarf wedgemussel population and habitat is not expected to be affected and the proposed action is expected to achieve beneficial effects. Removal of the dam will restore free flowing riverine habitat, improving multiple ecological conditions within the Ashuelot River. By improving existing habitat, the action will contribute to a diverse fish community, including a dwarf wedgemussel host species, the tessellated darter. Increased fish movement may allow the expansion of dwarf wedgemussel into restored habitat.

In summary, the BO concluded that the proposed action is not likely to jeopardize the continued existence of the dwarf wedgemussel. This non-jeopardy determination is based on the limited duration of adverse effects within much of the suitable habitat within the impoundment, and the very small and localized population of mussels that may be impacted. The few animals identified at the Homestead Dam are only a small fraction of the population within the Ashuelot River and their possible loss is not expected to significantly affect genetic diversity of long term productivity of the Ashuelot River population. Beneficial effects are anticipated as the proposed action is intended to restore natural riverine conditions and improve habitat, fish passage, and possibly expanding mussel habitat.

Impacts of the No Action Alternative

Under the no-action alternative, NMFS CRP would not fund the proposed project. Other agencies would still have the option to fund this project. However, the need for coastal habitat restoration is great, and this project responds to those needs and meets important priorities of the CRP, therefore not funding would not contribute to the fulfillment of the CRP purpose and need. There would be no foreseeable direct, indirect or cumulative impacts to the human environment under the no action alternative.

Comparison of Alternatives

Based on the analysis presented here, including the capacity to mitigate the loss to historic resources and a non-jeopardy determination by the USFWS, the preferred alternative can be conducted in a manner that minimizes the impacts to historic resources and listed species. The No Action alternative does not immediately impact the historic resource or listed species, however, significant work is required to stabilize the dam, and the No Action alternative would not assure that historic preservation nor protection for the dwarf wedgemussel be provided prior to damage or loss of the resource. In addition, the preferred alternative meets the purpose of the CRP by restoring important habitat for fish species under NMFS jurisdiction, whereas the purposes of the CRP are not advanced via the No Action alternative.

References

National Marine Fisheries Service, 2009. Memorandum of Agreement between the National Marine Fisheries Service and the New Hampshire State Historic Preservation office for the Removal of the Homestead Woolen Mill Dam, West Swanzey, New Hampshire. Agreement number HC- 2009-215.

New Hampshire Department of Historic Resources, 2008. Homestead Mill Complex Individual Inventory Form. Prepared by Vanesse Hangen Brustlin, Inc.

New Hampshire Department of Historic Resources, 2008. Homestead Mill Complex Area Form. Prepared by Vanesse Hangen Brustlin, Inc.

United States Fish and Wildlife Service, 2009. Biological Opinion and Incidental Take Statement for the Homestead Woolen Mills Dam Removal and Thompson Bridge Stabilization Project.