FINDING OF NO SIGNIFICANT IMPACT
ENVIRONMENTAL ASSESSMENT
RATTLESNAKE BROOK RESTORATION
FREETOWN, MASSACHUSETTS

The U. S. Fish and Wildlife Service (Service), in partnership with the Massachusetts Division of Ecological Restoration and other partners, is proposing to complete the Rattlesnake Brook Restoration Project in Freetown, Massachusetts. The Project would remove the Rattlesnake Brook Dam's (Dam) western spillway, restore approximately 400 linear feet of stream, and fill a 215-foot-long diversion pipe. The purpose of the Project is to restore fish passage and natural river process to Rattlesnake Brook and eliminate a public safety hazard.

The Environmental Assessment analyzes the impacts of two alternatives on the human environment, including the Proposed Action (Breach Dam at the Western Spillway with Passive Release of Sediment) and a No Action Alternative. Additional alternatives were considered early on in the analysis and dismissed because of impacts to the environment and the inability to meet the Project's purpose and need.

The Proposed Action will have a net ecological benefit by restoring natural stream process to the watershed and reconnecting 5 miles of habitat for Alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), American eel (*Anguilla rostrata*), and other aquatic organisms within the watershed. Rainbow smelt (*Osmerus mordax*) would also benefit by the enhancement and increase in available spawning habitat. The Project complements the Service's ongoing efforts to restore diadromous and resident fishery populations within Taunton River Watershed and Narragansett Bay estuary. The Project will also improve public safety by preventing the potential of a catastrophic dam breach.

The Proposed Action would remove 100 feet of the entire vertical extent of the western spillway and restore approximately 400 linear feet of the downstream channel by reshaping the channel geometry to a watershed-appropriate width and depth along with the installation of random boulder clusters, large woody debris, and two grade control riffles. Native shrubs and trees would also be planted along the western channel to restore a diverse native riparian community. In addition, all legacy infrastructure associated with the Crystal Springs Bleaching and Dyeing Company within the western channel would be removed, including the concrete walls, culverts, and bridge abutments. It is estimated that restoration of the western channel will require excavation of 1,390 cubic yards of material. All sediment excavated during the construction of the downstream channel will be disposed of in accordance with the permit conditions outlined in the 401 Water Quality Certification issued by the Massachusetts Department of Environmental Protection on April 15, 2016. Implementation of these conditions will mitigate any potential adverse effects on the environment. In addition, the existing 215-foot-long diversion culvert at the eastern spillway will be filled with ordinary clean borrow by removing the top portion of the culvert and bringing it up to the previously existing grade.

Upstream of the Dam, Rattlesnake Brook will be allowed to naturally form a meandering channel through the current impoundment, which will passively transport the accumulated sediments downstream. It is expected that channels will form in both Rattlesnake and Terry

brooks in this fashion. Passive sediment migration is the preferred method for channel formation within the impoundment because it will minimize impacts to wetlands that would occur if the channel were to be excavated by mechanical means. In addition, sampling of the impoundment found the accumulated sediments to be relatively uncontaminated and cleaner than all samples downstream of the Dam. By releasing these accumulated sediments downstream, it is expected the cleaner sediment will bury, displace, and/or mix with some of the more contaminated sediments, thereby improving environmental conditions. Following removal of the Dam, the impoundment will also be seeded with native seed stock to help establish a native floodplain community.

The proposed Project will have negligible, if any, impacts on air quality, soundscapes, land use, socioeconomics, energy resources, geology, lightscapes, Indian trust resources, scenic resources, and prime and unique farmlands. No adverse effects to cultural resources are expected as a result of the Project.

The Service finds there will be no significant impacts resulting from the proposed restoration activities of the Project. The Proposed Action provides net benefits that far outweigh its potential impacts on the natural and human environment. Therefore, the Service concludes that a Finding of No Significant Impact be issued for the proposed Project.

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6/21/2016
Date

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Environmental Assessment, dated 06/21/16