

Nyanza Natural Resource Damage Assessment Project: Red Maple Trail Final Report

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August 21, 2017

Introduction

As part of the Nyanza Natural Resource Damages Superfund site settlement, the Nyanza Natural Resource Damage Trustee Council approved the allocation of \$161,000 for improvements to the Red Maple Trail at the Great Meadows National Wildlife Refuge. A second project for Sudbury River access improvements was funded at \$7,000. This latter project was later abandoned, and on December 13, 2016, the trustees agreed to make those funds available to the U.S. Fish and Wildlife Service (FWS) for use on the Red Maple Trail. A total of \$168,000 in Nyanza Natural Resource Damage Assessment funds was directed to the rehabilitation of the Red Maple Trail. This was supplemented by Great Meadows NWR station funds (materials and staff time) and volunteer time.

The restoration objective of this project was to improve pedestrian access on a popular woodland walking trail that overlooks the Sudbury River and its associated wetland habitats. It encompassed making about 1,300 feet of the trail around a pond and along a buttonbush marsh wheelchair accessible on a stone dust base. It also involved the construction of over 1,400 foot long boardwalk and a 10' x 15' wildlife observation platform with a 40' walkway. The entire trail and viewing platform are ADA compliant and was completed in phases as depicted in Figure 1.

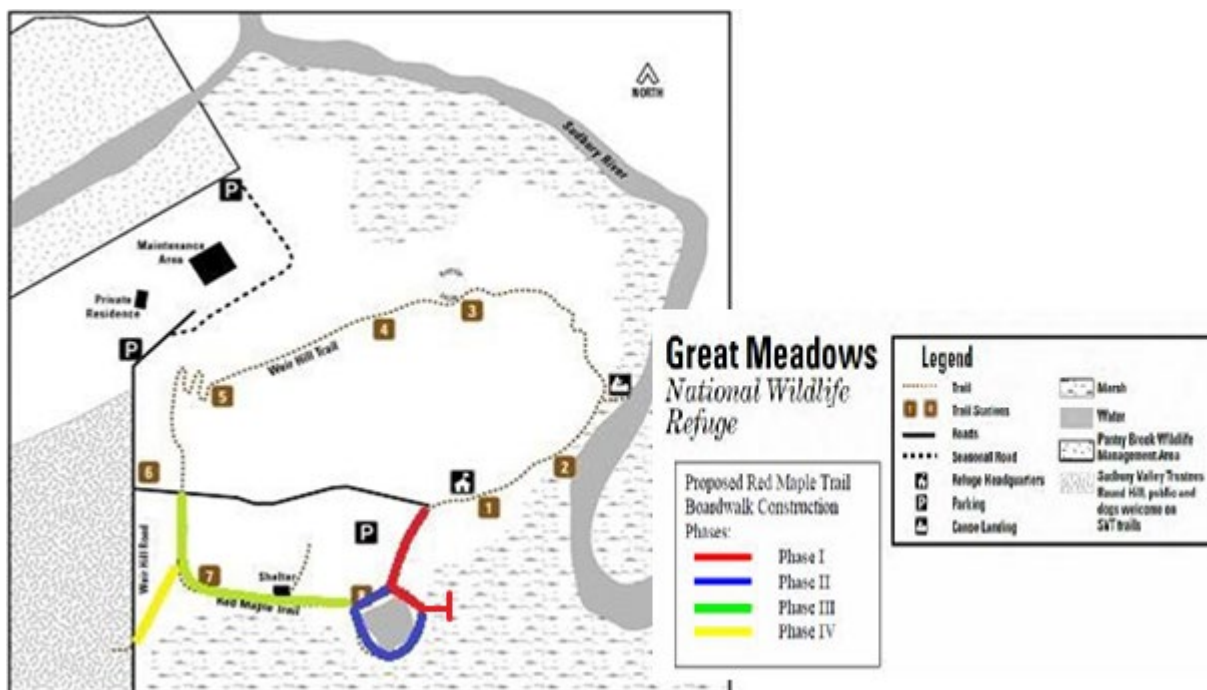


Figure 1: The trail was completed in phases to help focus available efforts on certain sections.

Management and Permitting

In 2015 FWS entered into a cooperative agreement with Mass Audubon’s Ecological Extension Service (EES) to oversee the permitting and design of the Red Maple Trail Project. The project involved obtaining Massachusetts Division of Fisheries and Wildlife approval, which was received on June 16, 2015, and securing Massachusetts wetland permits (DEP 301-1159). We received the certificate of compliance for this project on March 13, 2017. EES also arranged for the completion of cultural resource surveys (conducted by the Public Archaeology Laboratory (PAL) in Pawtucket, RI) in compliance with section 6 of the National Historic Preservation Act. PAL sent the report to the Massachusetts Historical Commission (MHC) at their request on March 18, 2016. The request by MHC for a second copy of the report indicates that they reviewed and accepted the report and have no further comments on the project. EES also contracted an engineer to check the area of the proposed platform for structural integrity and any cultural resource conflicts.

Trail Construction Details

The gravel trail was built by removing approximately 6 inches of material from the existing trail bed and replacing it with gravel and stone dust to match existing contours. The gravel fill was designed to promote drainage and the stone dust surface was installed so that it remains smooth to meet accessibility goals as well as require minimal maintenance. As the new gravel replaces excavated material, its addition will not affect flood storage capacity. This work, in the higher elevation areas, was installed by the use of a small skid-steer and hand tools.

The boardwalk stands approximately 1 foot off of the ground, with wooden sections supported on 2-inch galvanized steel pipe posts that are augered into the ground. This form of construction minimizes ground level barriers associated with the boardwalk to minimize impacts on the movement of small animals. Three 2X8-inch stringers 10 feet long will run between the posts. The decking will be 5-foot lengths of 2X6-inch boards. All wood portions are ACQ (Alkaline-Copper-Quaternary) pressure treated lumber. All boardwalk work was done by hand and with small power tools (no large equipment). Figure 2 illustrates how the steel pipes hold the decking off of the ground while minimizing ground-level barriers. The design is adapted from the Acton Land Stewardship Committee’s “Boardwalk Construction Guidelines” See <http://www.actontrails.org/BoardwalkDesign.pdf>

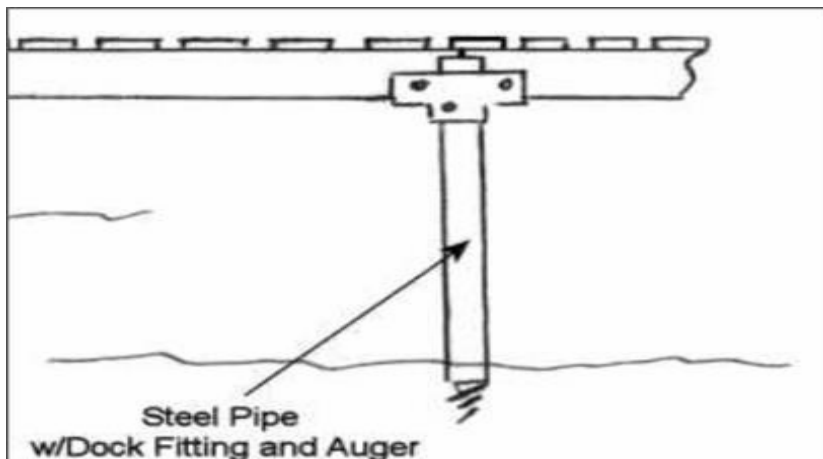


Figure 2: Helical pier construction of boardwalk and platform

FWS staff cleared an area for the trail and observation platform in preparation for trail construction to begin in 2016. EES installed the platform posts in preparation for construction completion. Mass Audubon oversaw the contract to finish the platform by installing the decking as well as make adjustments on the height of the railing. In the spring and early summer of 2016, refuge staff graded the soil and installed the gravel trail. EES applied, contracted and oversaw two Americorps crews to help install the helical piers for the boardwalk in July. In collaboration with FWS SCA intern Tim Puopolo, 31 work parties were scheduled from June 2016 to February 2017. The work parties averaged almost 19 volunteer hours per day. We had over 60 volunteers work on the project. The personal volunteer average was 10 hours. Corporate volunteers, Team Rubicon (military veterans), and the New England Regional Council of Carpenters, also provided key support. Volunteers helped on the full range of job duties including, moving spreading gravel, setting up erosion control materials, installing the augers for the boardwalk, as well as constructing the frame and decking. FWS also contributed a considerable amount of staff time, provided equipment, and purchased materials with station funds to support the project.

SCA intern Tim Puopolo designed two 2' x 3" interpretative panels which were produced locally and installed near the wildlife observation platform. One features the "legacy of the Nyanza Superfund site" which specifically highlights the restoration project and the role of the trustees, Mass Audubon and volunteers who helped make the project possible. The other interpretative panel explains the buttonbush marsh and the value of wetlands and wildlife on the refuge. New trail signs were installed.

Trail completion culminated with a dedication ceremony on May 13, 2017 which was attended by 50 people. Guest speakers included representatives from the federal and state trustees (John Catena, NOAA; Molly Sperduto, FWS; Paul Locke, DEP) as well as Jeff Collins from Mass Audubon, SCA intern Tim Puopolo, and State Representative Carmine Gentile. It was emceed by Libby Herland, Refuge Manager. Plaques recognizing the key contributions to individual volunteers, Team Rubicon, and the New England Regional Council of Governments were awarded.

Photos are attached in Exhibit 1. The New England Regional Council of Governments also produced a 3-minute video about the project. This will be sent to the trustees via email. The budget for the project is attached in Exhibit 2.

Exhibit 1: Photos



Photos 1 and 2: Gravel trail around fishing pond



Photos 2 and 3: Left: Observation platform; Right: Gravel trail to boardwalk transition



Photos 5 and 6: Boardwalk over wettest sections of trail

Exhibit B: Budget

Engineering	\$3,500.00
Cultural Resources	\$10,749.00
Platform- SolidEarth	\$48,550.00
Boardwalk Materials	\$54,466.00
Gravel Trail Materials	\$9,670.00
Erosion Control	\$3,710.00
SCA MA Americorps Crew	\$7,400.00
SCA HS Crew	\$5,105.00
EES- design, permitting, coordination	\$21,000.00
USFWS- staff time	\$3,850.00
	\$168,000.00