

Handshake Partnership Program Final Project Close-Out Report

1. **Fiscal Year Selected as Winning Project:** FY23
2. **Name of Corps Project/Lake:** Mansfield Hollow Dam
3. **District / Division of Corps Project/Lake:** NAE/NAD
4. **Handshake Project Name:** Pine Barren Restoration
5. **Amount of Handshake Funds remaining:** \$0.00
6. **What has been accomplished?** Please provide photographs; before, during, and after!:

Mansfield Hollow Dam maintains a pine barren protection and habitat management project on four acres of pitch pine and scrub oak habitat. The pine barren ecosystem maintains numerous pollinator plants in its understory. These plants support pollinator species by supplying food in the form of nectar and pollen as well as habitat to many imperiled species of birds and insects, including the Frosted Elfin butterfly. This project aimed to restore native plants and improve the wildlife habitat across the pine barrens.

In order to facilitate a successful growth of herbaceous pollinator species, a tree removal contract was completed. This contract removed undesirable tree species to improve site access for conducting selective tree thinning of the woody canopy to promote our conservation efforts.



Photo 1: Tree clearing to improve access for conducting selective tree thinning.

The site of the pine barrens is adjacent to a walking trail which was utilized by 150K annual visitors in FY23. To educate visitors of the prevalence and importance of this ecosystem, interpretive signage was procured through the Corps Foundation funding. This signage was designed in conjunction with our Handshake partners to capture the historical importance of the ecosystem and the invertebrate species who benefit from the plants found there.

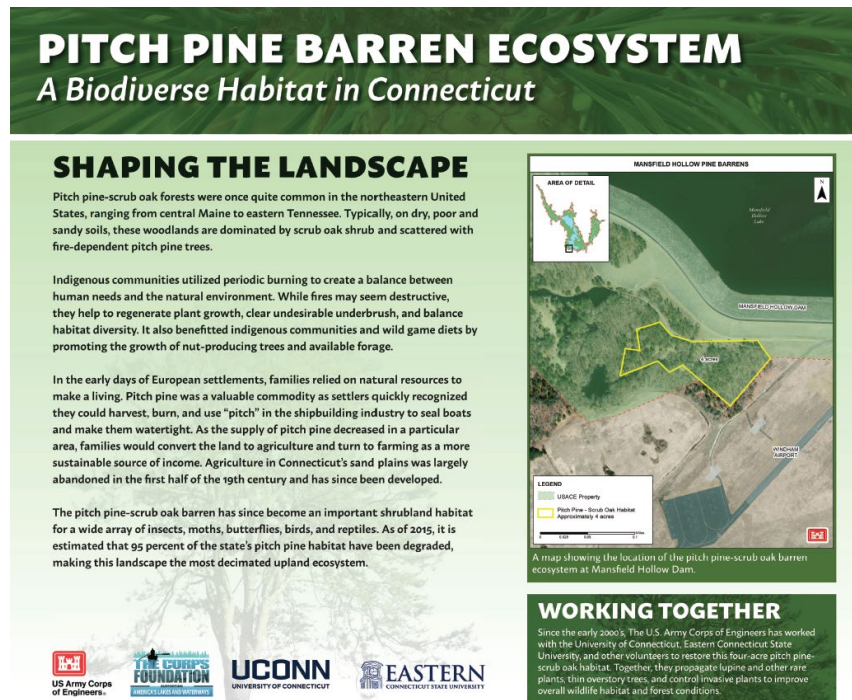


Photo 2: One of the interpretive panels designed for the adjacent walking trails, focusing on the historical importance.

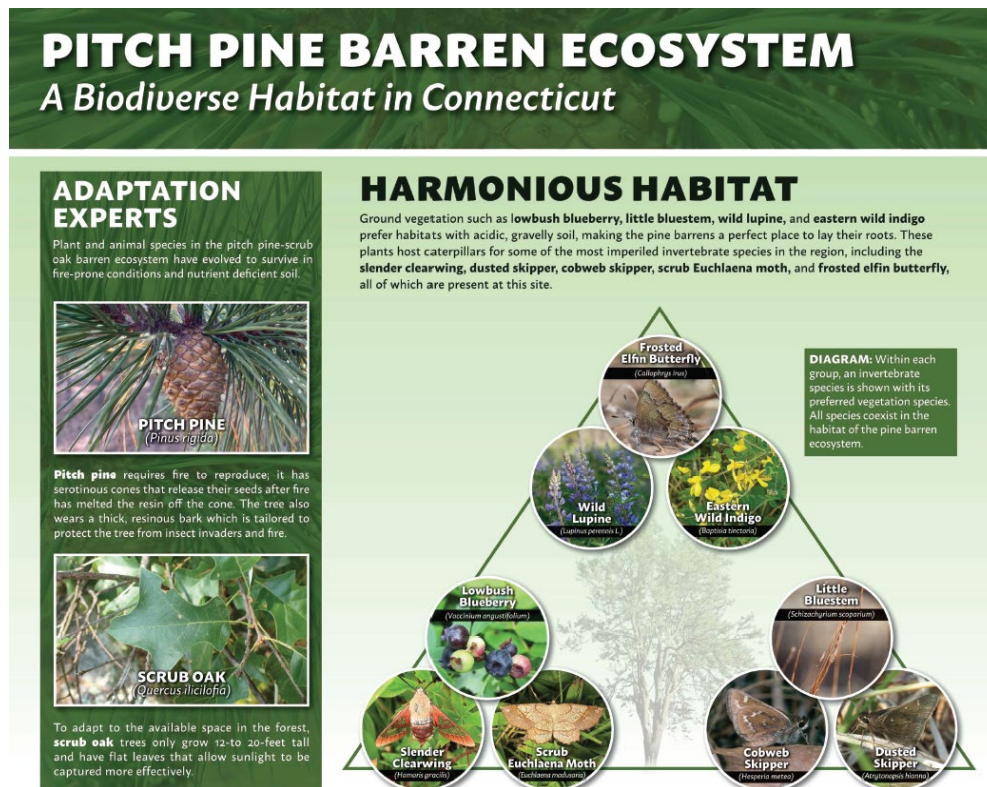


Photo 3: An interpretive panel designed for adjacent walking trail focusing on the species found in the pitch-pine ecosystem.

Received Handshake Funds allowed USACE and the Partners opportunities to collaborate and work together to improve existing deer fence enclosures, which protect the herbaceous vegetation as well as young pitch pine and scrub oak trees. Building new relationships with volunteers and partners allowed for a new sense of community to grow.



Photo 4: Volunteers working together to install new deer fence enclosure.



Photo 5: USACE assisting in installing deer fence posts for protecting the pitch pine ecosystem.



Photograph #6: Wild lupine growing among the pitch pine in the established management area, protected by deer fencing

	Total
Handshake Program Funding Amount	\$16000
Local Corps Office Funds (total expended on labor, materials, contracts, etc.)?	\$2530
Partner's Contributions (total value of funds, goods, services, volunteer hours, etc.)	
Partners Name	Total Value of Contributions
1 University of Connecticut	\$6964
2	\$
3	\$
4	\$
5	\$
6	\$
7	\$
8	\$
9	\$
10	\$

6. Handshake Program Recipient Feedback

Please take this opportunity to provide feedback on all aspects of the Handshake Program and the Challenge Partnership Agreement authority. Your productive comments are important to the ongoing improvement of the program. Make sure to let us know how the Handshake funds have benefited your efforts to initiate and/or strengthen your partnerships.

This project would not have been possible without the funds supporting this initiative. With this new opportunity, individuals who walk on the recreational trail can engage more critically and learn about their surrounding environment, more habitat has been protected to promote the various invertebrate species populations, and USACE and its partners were able to work together on a project with lasting impact.

7. Handshake Summary:

Please also include a separate newspaper type article describing the project and the benefit to the Corps of Engineers and to the public as a result of this partnership project. Examples can be found on the gateway under [Handshake Success Stories](#).



Pine Barren Restoration

Mansfield Hollow Dam (NAE/NAD)

Handshake Agreement (FY23)

August 30, 2024

Mansfield Hollow Dam maintains a pine barren protection and habitat management project on four acres of pitch pine and scrub oak habitat. The pine barren ecosystem maintains numerous pollinator plants in its understory. These plants support pollinator species by supplying food in the form of nectar and pollen as well as habitat to many imperiled species of birds and insects, including the Frosted Elfin butterfly. This project aimed to restore native plants and improve the wildlife habitat across the pine barrens.

This project consists of protection and improvement of pitch pine barren and sandplain grassland habitat at Mansfield Hollow Dam by the United States Army Corps of Engineers (USACE) in coordination with the University of Connecticut (UConn) and Eastern Connecticut State University (ECSU).

Pitch pine requires disturbance to regenerate. As such, the project selectively removed undesirable tree species including the white pine and aspen to allow more sunlight to hit the ground and allow pitch pine seedling to not be shaded out. To facilitate the success of future herbaceous pollinator species, the USACE executed a contract to remove trees and improve site access to the pine barren ecosystem for conducting selective tree thinning of the woody canopy.



Tree clearing to improve access for conducting selective tree thinning.

A selective tree thinning opens up the canopy and allows for the propagation of early successional species of herbaceous plants, including three pollinator plants; Eastern Wild Indigo, Wild Lupine, and the New Jersey Tea. These plants are the food plant for various rare butterflies including the Frosted Elfin Butterfly, the Slender Clearwing, and the Cobweb Skipper. Propagation of these desired plants as well as the site/seed bed preparation and the seeding of the desired area were conducted by UCONN and ECSU.



Close up of wild lupine with Mansfield Hollow Dam in the background (not fenced in yet)

Volunteers gathered on numerous volunteer-led work days to install approximately 250 feet of fencing around the newly planted area to deter grazing from animals while the plants are getting established.



USACE and volunteers working together to install deer fence enclosure to protect establishing plants

Adjacent to the pitch pine ecosystem is a walking trail that is utilized by 150K annual visitors. Interpretive signage was designed to capture the value of pitch pine and scrub oak habitat and inform the public on the value of partnership and management activities. Visitors on this recreational trail now can engage more critically with the landscape around them.

PITCH PINE BARREN ECOSYSTEM

Biodiverse Habitat in Connecticut

SHAPING THE LANDSCAPE

Pitch-pine-oak forests were once quite common in the northeastern United States, ranging from central Maine to eastern Tennessee. Typically, on dry, poor and acidic soils, these woodlands are dominated by scrub oak shrubs and scattered with persistent pitch pine trees.

Early communities utilized periodic burning to create a balance between human needs and the natural environment. While fires may seem destructive, they help regenerate plant growth, clear undesirable undergrowth, and balance ecosystem diversity. It also benefitted indigenous communities and wild game diets by creating the growth of nut-producing trees and available forage.

In early days of European settlements, families relied on natural resources to survive. Pitch pine was a valuable commodity as settlers quickly recognized its utility for building, fuel, and use "pitch" in the shipbuilding industry to seal boats and other water-tight. As the supply of pitch pine decreased in a particular area, settlers would convert the land to agriculture and turn to farming as a more reliable source of income. Agriculture in Connecticut's sand plains was largely based in the first half of the 19th century and has since been developed.

Pitch-pine-oak barren has since become an important shrubland habitat with a wide array of insects, snails, butterflies, birds, and reptiles. As of 2015, it is estimated that 95 percent of the state's pitch pine habitat have been degraded, leaving this landscape the most degraded upland ecosystem.

PITCH PINE BARREN ECOSYSTEM

Biodiverse Habitat in Connecticut

ADAPTATION PARTS

Pitch pine is a hardy species that grows in the pitch pine-oak ecosystem. It is a long-lived tree that can live for over 100 years. It is a pioneer species that can grow in poor soil conditions and is highly resistant to fire.

HARMONIOUS HABITAT

Ground vegetation such as lowbush blueberry, little bluestem, wild lupine, and eastern wild garlic prefer habitats with acidic, gravelly soil, making the pitch pine-oak ecosystem a perfect place to lay their roots. The plants host caterpillars for some of the most imperiled insectivore species in the region, including the slender bluewinged black flycatcher, scarlet tanager, scrub jay, and eastern bluebird.

Interpretive panels focusing on the species found in the pitch pine ecosystem

USACE and its partners utilized this opportunity to work together towards a common goal: creating a healthier pitch pine barren ecosystem for years to come. Together, they improved habitat conditions by removing undesirable tree species, established a new

restoration area for herbaceous species to grow, promoted the longevity of key foodplants for imperiled invertebrate, enhanced educational opportunities for the public to learn about local conservation, and promoted new volunteer opportunities at Mansfield Hollow Dam.



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