



BLUE WATER RIVER WALK



MAJOR HABITAT RESTORATION PROJECT BEGINS



The Upper St. Clair River Habitat Restoration Project, a.k.a. Blue Water River Walk, began in 2010 with a vision of what stakeholders felt the St. Clair River shoreline should look like. In December 2011, philanthropist Jim Acheson generously donated almost the entire shoreline of Desmond Landing to the Community Foundation of St. Clair County to ensure that this land would be restored and protected for years to come.

Construction for this ambitious project was able to begin in 2012 after

the Community Foundation received two federal grants: \$250,000 from the U.S. Fish and Wildlife Service (USFWS) and \$2,000,000 from the National Oceanic and Atmospheric Administration (NOAA). With the grant from the USFWS, the Community Foundation was able to restore 450 linear feet of shoreline located just south of the old Ferry Dock. The \$2,000,000 grant from NOAA's Great Lakes Habitat Restoration Program will allow the Community Foundation to restore the rest of this 4,300 feet of shoreline.

HISTORY

For much of the 1900's this stretch of shoreline supported the burgeoning growth of the industrial era. Train yards, scrap yards, shipping, warehouses and other industrial uses meant that this one-mile long stretch of shoreline was effectively off-limits to the public.

Although the heavy industry supported the regional economy, it did incredible damage to the natural habitat, leaving the area with no trees and very little native vegetation, suitable coastal wetland habitat, or shallow water spawning and nursery habitat.

In the late 1990's Jim Acheson began buying up the property along the shoreline and began a decade long effort to acquire, clear and clean approximately 60 acres. While the overall goal for this site is still to support the regional economy, it will do so with a more sustainable and naturalized shoreline that benefits people and wildlife.



CURRENT STATUS

Restoration of this beautiful waterfront property is currently in progress and has been since summer of 2012, starting with the removal of approximately 2,600 tons of industrial debris that had accumulated over the last 100 years.

With a grant from the U.S. Fish and Wildlife Service we were able to restore 13,500 square feet of shoreline habitat, 16,000 square feet of shallow water habitat, and create 2,500 square feet of new shallow water nursery habitat. Most of the invasive plants were able to be removed from the site with the exception of an invasive grass, known as phragmites which dominates the southern section of the River Walk. New topsoil and native plantings were put in, as well as bank-run gravel along the 450 linear feet of restored shoreline.

FIRST NATIVE TREE PLANTED

Due to hardening of the shoreline that has occurred over the last 100 years from industrial facilities, the area was void of any trees whatsoever. That changed last year, when the first tree, a Red Maple, was planted on site during the pilot phase of the project. It is part of the native plantings put in using the \$250,000 grant from the U.S. Fish & Wildlife Service. This tree is the first of many to be planted at the site, which we hope will attract more native birds to the area for breeding, feeding, and stopover grounds making our Blue Water River Walk a great place for wildlife watching.



WHAT IS A HERPETOLOGIST?



A herpetologist is a zoologist who specializes in the study of amphibians and reptiles, collectively known as "herpetofauna". Amphibians include animals such as frogs, salamanders, and newts; reptiles include turtles, snakes, and lizards. The Blue Water River Walk is utilizing the expertise of herpetologist and ecosystems specialist, David A. Mifsud with Herpetological Resource and Management, to monitor wildlife, such as amphibians, reptiles, birds, and aquatic macroinvertebrates (insects, crustaceans, etc.)

on our shoreline. These species are an important part of the ecosystem here and by monitoring them throughout the course of the project, we may evaluate their benefits from restoration and the benefits to the ecosystem.

According to Mr. Mifsud's initial wildlife assessment, this site is currently home to two species of herpetofauna (Mudpuppy and Midland Painted Turtle), fifty-two species of birds, and ten families of macroinvertebrates. It was determined that this site has the potential to provide habitat which is essential to wildlife survival and with careful restoration, it could support an increased number of wildlife species and a population increase of the species that are currently there.

GREAT LAKES FISH

By restoring the shoreline and creating shallow-water spawning and nursery habitat, the Upper St. Clair River will be able to support higher abundances of many native Great Lakes fish species. Threatened and protected species, such as mooneye, and river redhorse, and recreationally important species such as walleye, lake whitefish, yellow perch, rock bass and smallmouth bass will all benefit from the softened shoreline and shallow-water habitats. For example, adult smallmouth bass and walleye will favor the underwater structures, such as logs, boulders and riprap walls in deeper areas along the shoreline, while yellow perch and lake whitefish may use the shallow-water pools to feed on macroinvertebrates and the eggs of other fish.

Restoration and creation of spawning and nursery habitats offer native Great Lakes fish, particularly larval and young-of-year fish, better chances of survival, facilitating an increase in the abundance of native fish species.

MIGRATORY BIRDS OF THE ST. CLAIR RIVER

The St. Clair River and its surrounding area is a critical migration path for migratory birds and waterfowl. Avian species use this area as feeding, nesting, and breeding grounds during their breeding season. Out of the fifty-two species of bird observed during wildlife sampling, forty-eight of them were native, forty percent of which is comprised of waterfowl and seabirds. The most-abundant species of native birds observed at the site were six species of waterfowl and seabird. Some of the most common species found here are Mallard, Ring-Billed Gull, Herring Gull, Canada Goose, and European Starling.

Among the species observed at the site, seven of them are listed as rare or declining in Michigan and

two species are listed as endangered on the Michigan Department of Natural Resources Endangered and Threatened Species List. These two species are the Common Tern, a species of seabird, and the Trumpeter Swan, the largest species of waterfowl native to North America.

These results will serve as a guide for restoration efforts on the site; they tell us what types of habitat need to be created to give species native to the area the best chance at survival. With our habitat restoration and creation efforts, we hope to see more of these magnificent creatures using our shoreline as stop-over and breeding grounds.



Mallards

SHALLOW-WATER SPAWNING AND NURSERY HABITAT



One element of the Blue Water River Walk Project is to create new shallow-water spawning and nursery habitat because previously there had been very little suitable habitat for spawning fish and juveniles. Once the pilot phase of the project was completed in November of last year, 2,500 feet of new shallow-water habitat had been created.

These habitats are comprised of pebble beaches on the shore, logs that have washed up near shore, and old pilings left in the ground offshore. Old

pilings provide a barrier between the river current and the shallow-water habitat, as well as break the wave energy generated by passing watercraft. Logs and other woody debris were also left to be a part of the new habitat because they provide protection from predators and a food source via algal growth on its surfaces.

Not only will fish benefit from the new shallow-water habitat, but herpetofauna and macroinvertebrates will also benefit. Macroinvertebrates will live in the shallow-water pools on and under rocks and logs, feeding on woody debris and plant matter. The logs and woody debris will also give turtles the opportunity to bask in the sun; this is important for their survival because turtles are cold-blooded animals that rely on outside sources for warmth.

Construction of these shallow-water habitats will continue this summer. There is more debris to be removed from the shoreline and shallow-water areas and replaced with more natural structures such as boulders and native aquatic vegetation.

IMPORTANCE OF MACROINVERTEBRATES

Macroinvertebrates are small aquatic organisms that lack a backbone and can be seen without using magnification, such as aquatic insects, crustaceans, and mollusks. They feed on bacteria, algae and dead or decaying plant matter, influencing the nutrient cycle.

Macroinvertebrates are extremely important to underwater ecosystems because they serve as a food source for larger organisms (e.g. fish and herpetofauna) and they are indicators of water quality. A high diversity of macroinvertebrate species is a sign of good stream health because they are very sensitive to pollutants and changes in water quality. Pollutants often lower dissolved oxygen and change pH levels in the water and some species are more tolerant of these changes than others, indicating the levels of different nutrients. For example, mayflies and caddisflies require high dissolved oxygen and a neutral pH whereas aquatic worms can survive in low dissolved oxygen and extreme pH levels. Therefore, a high abundance of aquatic worms plus a low abundance of mayflies and caddisflies would indicate low dissolved oxygen and either high or low pH.



INVASIVE VS. NATIVE PLANTS

An invasive species is one that is non-native to a specific area and has been able to thrive and spread in that area, establishing itself. Invasive species often have an advantage over native species because the insects, diseases, and predators that exist in its natural habitat do not exist in new habitat. This means that invasive species can out-compete native species, spreading aggressively and killing the native vegetation. Resulting from the loss of native vegetation is the loss of habitat and food sources for native fish and wildlife species.

Over the years, the Blue Water River Walk site has been stripped of almost all native vegetation and has become overrun with invasive plants. One of the most abundant being Phragmites, also known as the common reed, which is a tall perennial grass commonly found in wetlands.

Phragmites is of particular concern because it grows in dense stands, which wear down coastal wetlands, crowd out native plants and wildlife, and block access for swimming, fishing, and shoreline views.

Native plants are critical to this habitat restoration project in that they will produce the most suitable habitat for native fish and wildlife. Keeping invasive plants in check is an ongoing project. Michigan Natural Features Inventory in collaboration with St. Clair County Health Department's Environmental Educator and Southeast Michigan Sea Grant's Extension Educator will be training local volunteers in identifying invasive vs. native plants and organizing work days to monitor, map, and control invasive plants on site after restoration is completed.



Phragmites

Other planned components:

- Restoration of the old Railroad Ferry Dock
- Display of the DB Harrington train
- A pedestrian trail
- Fishing pier & outdoor classroom construction
- Construction of Rotary Park and a planned County Wetlands Park

Restoration of the Railroad Ferry Dock and construction of the outdoor classroom and Rotary Park are set for this summer along with construction of the trail in the fall. For more information on the Blue Water River Walk, please visit www.stclairfoundation.org/riverwalk.



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