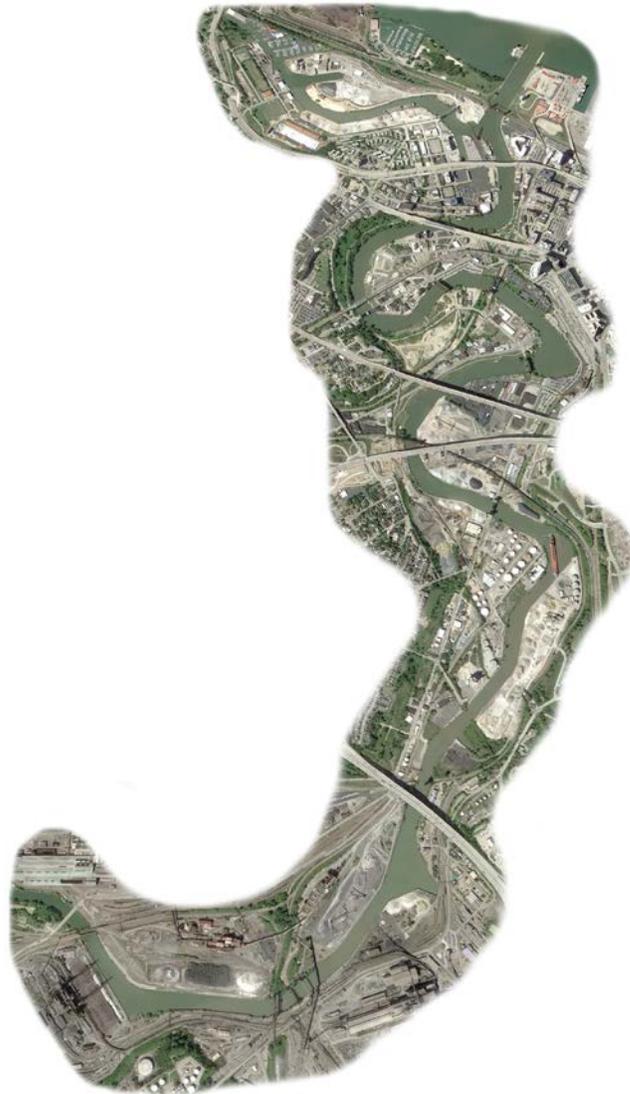


Fish Habitat Improvements in the Cuyahoga River Navigation Channel

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Project Summary

In order to restore, protect, and maintain an abundant Lake Erie fishery, the Cuyahoga River and the other Lake Erie tributaries must contribute by providing essential and effective habitat and passage for fish and other aquatic life throughout their watersheds.

Although the Cuyahoga does support substantial fish communities in most of its hundred miles, the last five miles of the river is a federal navigation channel, steel-walled, slow-moving due to being dredged to a depth of twenty-three feet, bereft of habitat, and inhospitable to fish.

This project provided support to address these problems in three ways:

First, the “Fish Habitat Improvements in the Cuyahoga River Navigation Channel” project has brought together stakeholders, landowners, planners, and experts in fish biology and habitat to develop and implement plans to restore abundant, diverse, and healthy fish populations in the ship channel in ways that will allow fish to migrate, reside, and possibly reproduce in areas where steel bulkheads and commercial ship traffic preclude the presence of natural habitat.

Second, it has contributed to the design and installation of more than five hundred new habitat structures on the face of steel bulkheads in the most industrial and habitat-challenged two miles of the channel to support larval, juvenile, and adult fish in the habitat gap between the natural river and Lake Erie.

Third, it has supported the planning and conceptual design process to identify areas of land behind and beyond the bulkhead where habitat areas more conducive to fish residency and reproduction could be created.

That last element is essential to developing a comprehensive habitat plan for the whole channel. Although they are the first line of protection for fish, the habitat structures on the face of the bulkheads still experience the heavy wave action of the large freighters’ bow-thrusters and propulsion systems. And though the structures have shelves that will eventually provide small rest areas, the dredged depth and narrow width of the channel do not allow for adequate space that could provide useful areas for residence or reproduction.

Through this project we have identified potential sites where habitat pockets, pools, or “mini-river” channels could be constructed that would provide habitat for fish out of the channel, in most cases behind the protective bulkhead and in some cases taking advantage of and increasing the flow of what little current exists. In doing so we analyzed the land uses in these areas, the property ownership, and the sites’ relationship to on-the-bulkhead habitat units that we have installed. In placing some of the on-bulkhead units, we avoided known problem areas where temperatures, discharges, freighter movement or docking would not support fish use, and sought behind-bulkhead sites that would supplement those gaps.

We then brought the two sides of the bulkheads together to form the basis of the master habitat plan, which is now in draft form and will be reviewed by the Habitat for Hard Places working group and other contributors.

Activities and Timeline

During the first quarter (April through June, 2015) we:

- Developed the work plan for the project
- Met with the Habitat for Hard Places work group to establish site criteria, which included
 - Location relative to discharges, hot zones, thruster wash, other stressors
 - Location relative to existing habitat and on-bulkhead structures
 - Property ownership and likelihood of collaboration, potential development plans
- Reviewed Port bulkhead assessments
 - Identified areas where degraded bulkheads would or would not be replaced
 - Identified sites where owner did not need or use river access
- Finalized phase 1 on-bulkhead habitat structure design, fabrication and began installation
- Finalized access and lease agreements with landowners for on-bulkhead structures
- Identified property ownership and begin outreach for further sites

During the second quarter (July through September, 2015) we:

- Met with H4HP group and additional Concept Plan committee
 - Identified potential sites for behind-bulkhead habitat areas based on criteria
 - Discussed the best approach to landowners, decided that first step should be to prepare a Plan/Concept Book to present to property owners/managers and stakeholders to explain and gain support.
- Began outline for plan book
- Leveraged LEPP funding that is supporting the preparation of the book to obtain funding from Western Reserve Land Conservancy and Dominion for the actual preparation and printing of the document.
- Continued installation of on-bulkhead structures
- Presented project to participants at symposium, invited ideas and comments

During the third quarter (October through December, 2015) we:

- Finished installation of first round of four styles of on-bulkhead habitat structures
- Made a site-by-site water-level tour and assessment of potential behind-bulkhead sites, current bulkhead conditions, and proximity to existing natural habitat
- Met with working group partners to prioritize both behind-bulkhead sites and evaluate performance and cost/benefit of designs of on-bulkhead structures
- Chose on-bulkhead designs to be made and installed in 2016 for phase two, revised structure designs and construction documents, prepared bid docs
- Defined behind-bulkhead styles and types of fish access for book

During the fourth quarter (January through March, 2016) we:

- Prepared rough draft of Plan Book to be Part 1 of comprehensive habitat plan
- Let bids and managed fabrication of year 2 on-bulkhead structures to be installed after in-water-work moratorium
- Finalized locations for remaining structures

Deliverables

We have produced a draft habitat restoration plan book that includes all but one set of numbers that will be needed for completion – cost of construction of behind-the-bulkhead habitats. This was largely an issue of timing, in most cases it taking longer than we expected to identify not only the current ownership of sites but who actually controls the sites. In some cases the owner is not the entity using the site, and in other cases we are still working our way up the chain of command (abandoned railway stub, for example.)

We completed the baseline of sites (both in-stream and land-based.)

We developed the methodology for selection of priority sites and mapped where land-based restoration sites relative to in-stream sites may provide a higher habitat benefit when combined.

We prepared location maps, current site conditions, evaluations of restoration benefit potential, and applicable restoration technique options for each site.

We identified and evaluated challenges and opportunities for land-based restoration implementation including environmental conditions, land ownership, and site access.

We developed the plan book with the abovementioned information that will provide the basis for the development of a comprehensive habitat restoration strategy for the Navigation Channel and serve as the framework for subsequent comprehensive habitat restoration planning for the mainstem of the Cuyahoga River in other areas with similar challenges within the Area of Concern.

Challenges

We had to keep reminding ourselves that this is a plan, not a final construction document, and we did find ourselves getting “in the weeds” in terms of whether or not we could do what we hope to do on a particular site.

As mentioned above, one of the challenges has involved the nature of land use, ownership, and site control on the properties we have identified as being the most advantageous from a fish habitat point of view. All of the sites are technically classified as brownfields, which makes landowners nervous about talking to anyone about digging soil out of the ground. Many of the sites are leased to operations that do not have the ability to negotiate for their use. During the grant period, some of the properties have changed hands and others have been earmarked for development, neither of which cases precludes the use for habitat but only slows the process.

This has only meant that the list of sites has changed over time, but the current list is one that we are fairly certain will work.

In conclusion

We have accomplished all that was set out in the grant project, except for the cost details, which may have been overreaching in the first place, and are subject to change in any case.

Please see the “Beyond the Bulkheads” draft plan/concept book, the publication deliverable for this project.