Friends of the Detroit River Habitat Restoration Project Update















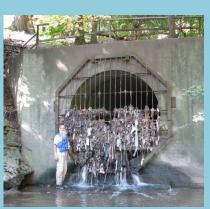
Canadian and U.S. Areas of Concern in the Great Lakes-St. Lawrence River Basin



11 Beneficial Use Impairments (BUIs) were originally identified to be associated with the Detroit River:

- 1. Restrictions on fish and wildlife consumption
- 2. Tainting of fish and wildlife flavor
- 3. Degradation of fish and wildlife populations
- 4. Fish tumors or other deformities
- 5. Bird and animal deformities or reproductive problems
- 6. Degradation of benthos
- 7. Restrictions on dredging activities
- 8. Restrictions on drinking water consumption or taste and odor problems
- 9. Beach closings
- 10. Degradation of aesthetic
- 11. Loss of fish and wildlife habitat

The two BUIs highlighted in red have been removed.



CSOs impede removal of many BUIs

9 Beneficial Use Impairments (BUIs) remain:

- 1. Restrictions on fish and wildlife consumption
- 2. Degradation of fish and wildlife populations
- 3. Fish tumors or other deformities
- 4. Bird and animal deformities or reproductive problems
- 5. Degradation of benthos
- 6. Restrictions on dredging activities
- 7. Beach closings
- 8. Degradation of aesthetic
- 9. Loss of fish and wildlife habitat

Friends of the Detroit River is focusing on the two BUIs highlighted in red – fish and wildlife-related BUIs.

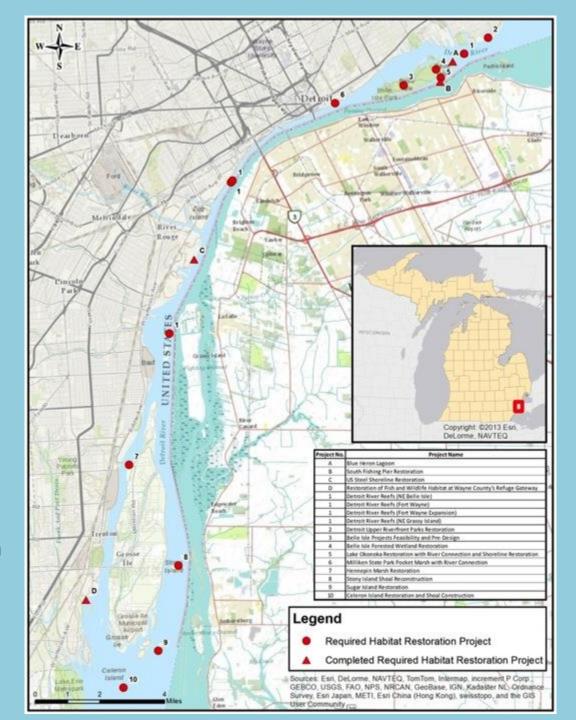


CSOs impede removal of many BUIs

The Guidance Plan to remove fish and wildlife related BUIs requires completion of 14 specifically chosen, habitat restoration projects.

Four projects are already complete:

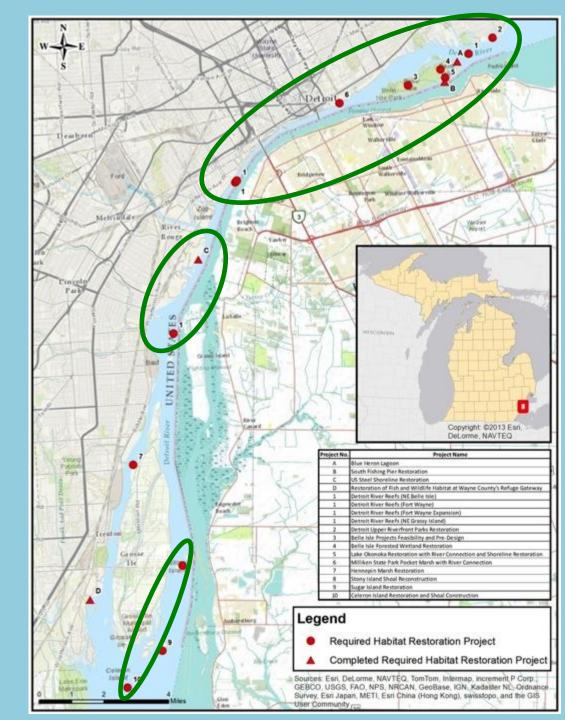
- Blue Heron Lagoon Restoration
 - Completed 2013
- South Fishing Pier Restoration
 - Completed 2013
- U. S. Steel Shoreline Restoration
 - Completed 2013
- Shoreline Restoration at Wayne County's Refuge Gateway
 - Completed 2012



Remaining projects include:

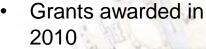
- 1. Detroit River Reefs
- Detroit Upper Riverfront Parks Restoration
- 3. Belle Isle Hydrologic Analysis, Feasibility and Pre-Design
- 4. Belle Isle Forested Wetland Restoration
- 5. Lake Okonoka Restoration with River Connection and Shoreline Restoration
- 6. Milliken State Park Pocket Marsh with River Connection
- 7. Hennepin Marsh Restoration
- 8. Stony Island Shoal Reconstruction
- 9. Sugar Island Habitat Restoration
- 10. Celeron Island Restoration and Shoal Construction

Projects highlighted in red and circled on the map are underway or completed.









Both budgets include a \$30,000 match

Project budget: \$1,460,000







Completed August, 2013

Funded by the Great Lakes Restoration Initiative



Blue Heron Lagoon



DETROIT Belle Isle









New bridge piers were placed prior to the lagoon opening.



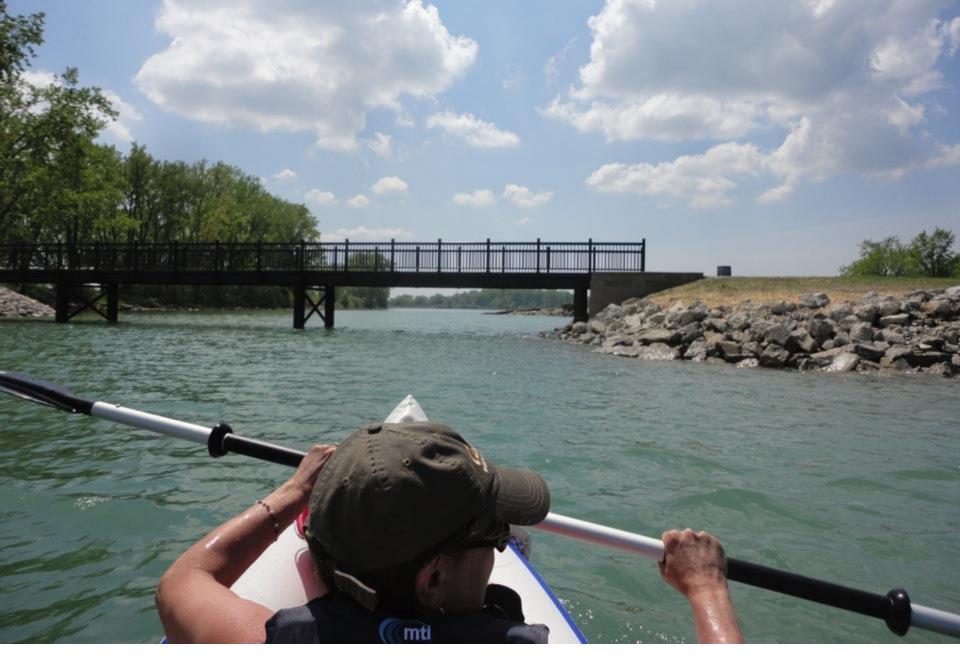
A turtle nesting mound and vernal pools were constructed on the peninsula.



Snake houses, vernal ponds and a turtle nesting were completed before winter.



July of 2013

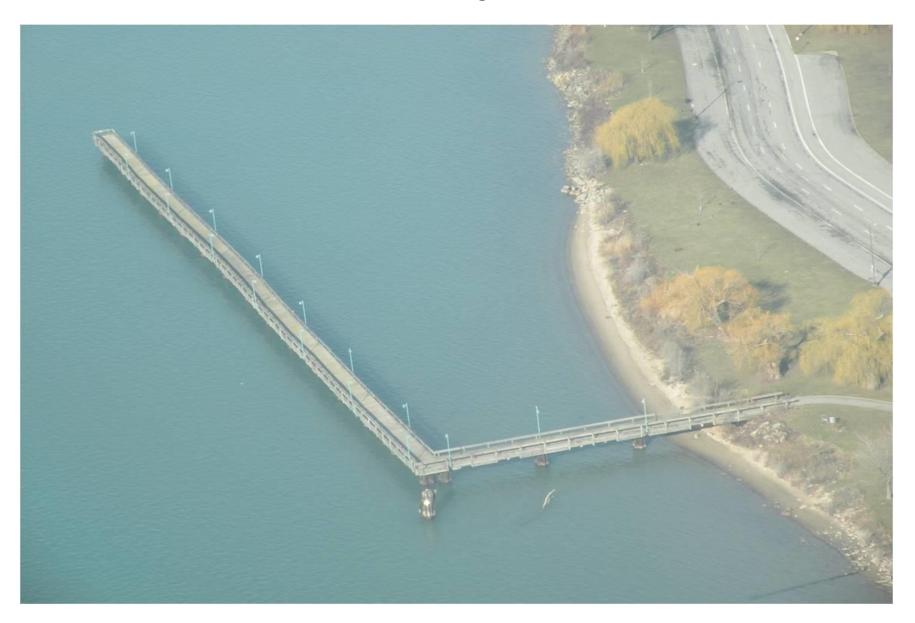


late summer 2013 brings new habitat and recreation opportunities.



July of 2014: Cleaner water and more fish....

South Fishing Pier

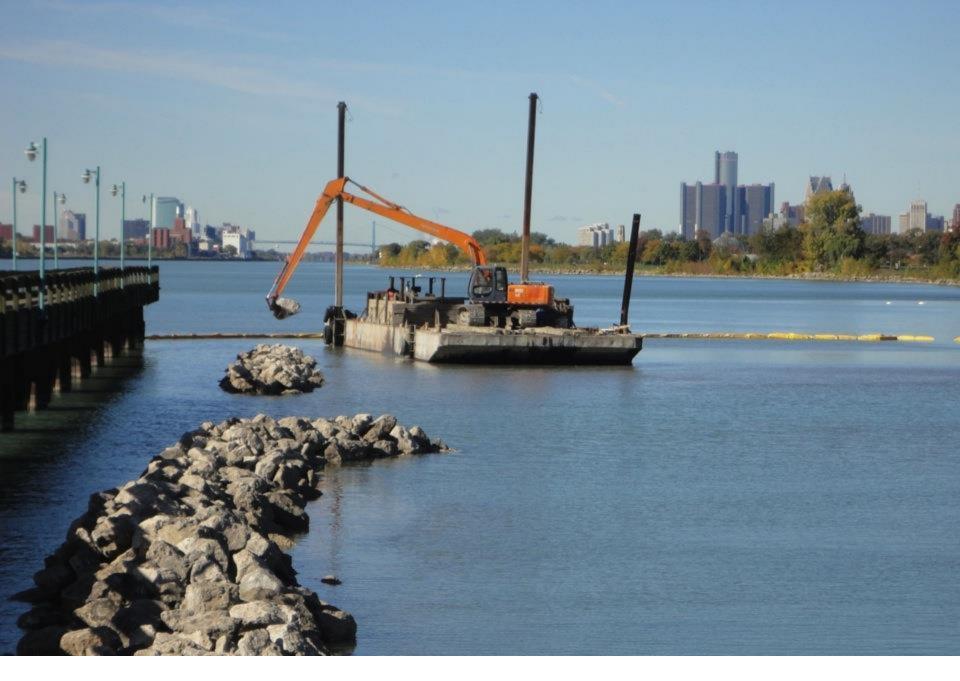


DETROIT Belle Isle





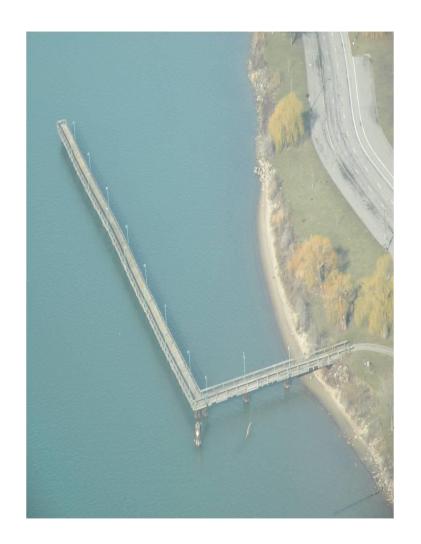


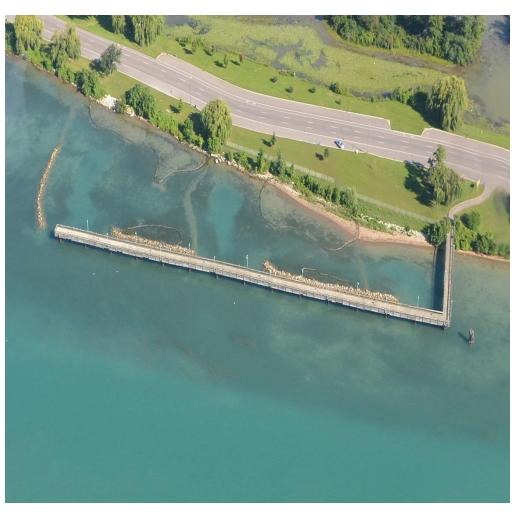


Final stones in breakwater are being placed.



South Fishing Pier





Before Restoration Project

After Restoration Project

Lake Okonoka









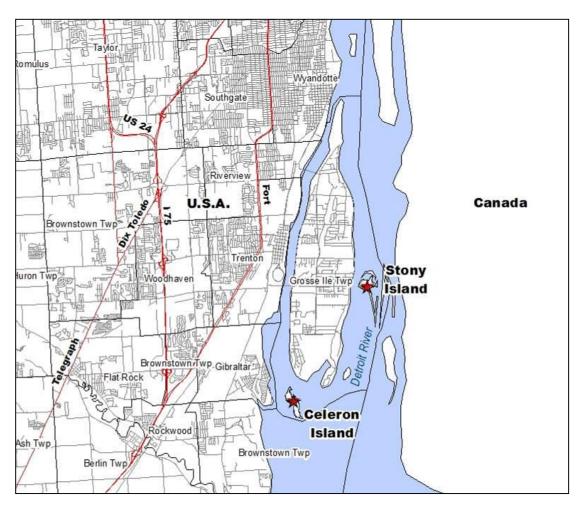
Detroit River AOC- Stony and Celeron Islands Habitat Restoration



FDR received funding in September of 2015 to begin construction on Stony Island.



ECT will be assisting with project design and construction administration



Stony Island



Celeron Island Aerial





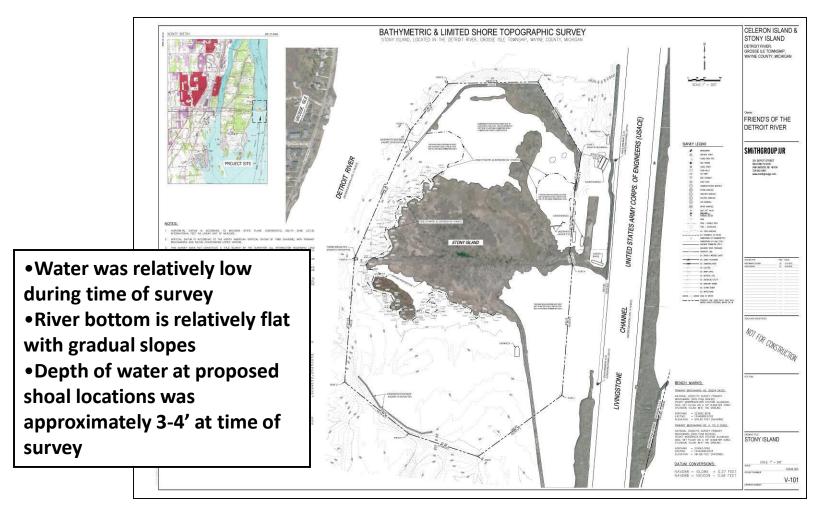


Design Project Components

- √ Field Data Gathering
 - √ Topographical Survey
 - √ Geotechnical Investigation
 - ✓ Baseline Fish Sampling
 - ✓ Sediment Sampling
 - ✓ T&E Evaluation and Survey
 - ✓ Baseline Aquatic Habitat Mapping
- ✓ Design
- ✓ Permit Application

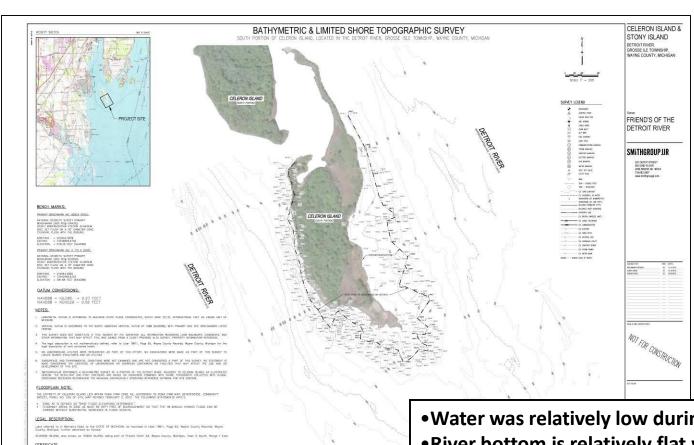


Topographical Survey





Topographical Survey

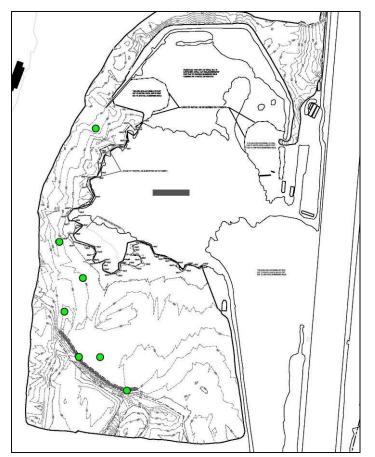


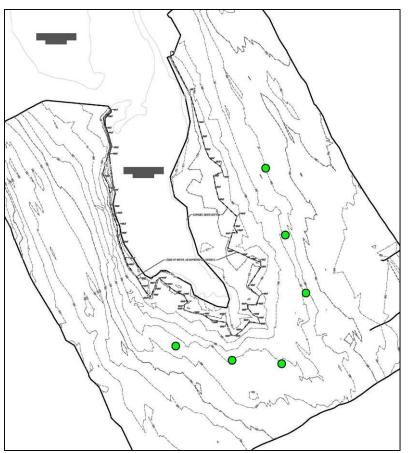
- Water was relatively low during time of survey
- •River bottom is relatively flat with gradual slopes
- Depth of water at proposed shoal locations was approximately 4-5' at time of survey



Geotechnical Investigation

- 13 Test Pits
- Silty clay, sand/silty sand, and/or cobbles were encountered.
- Due to the variation of the bearing material, a separator fabric material between the existing sediment/river bottom and the proposed shoal material has been included.







Fish Sampling

Sampling events

- April, 2014 (cool water)
- May, 2014 (cool water)
- July, 2014 (warm water)

Results

Number of Fish species
 increased as water warmed









Sediment Sampling- Stony Island

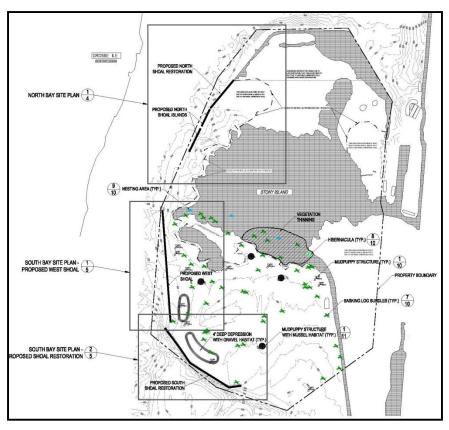
ECT Sediment Sample December 2013 Excavated Area

Test Pit Sediment Sample April 2014 -- Shoal

EPA Sediment Sample September 2013

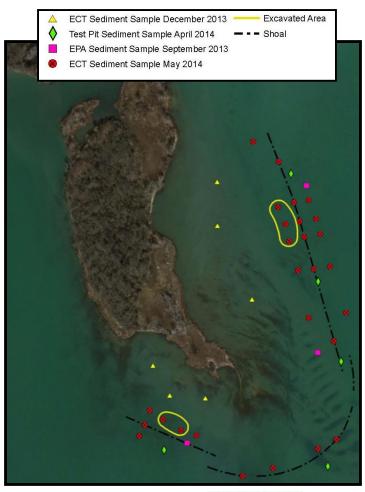
ECT Sediment Sample May 2014

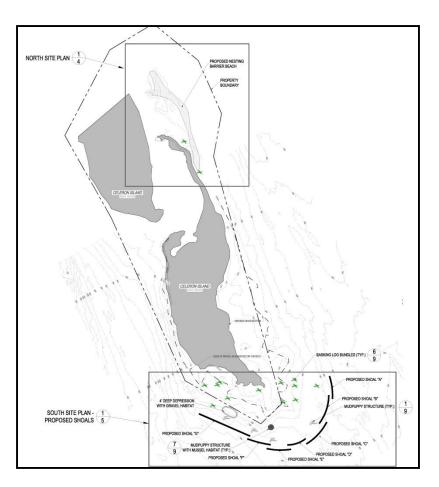






Sediment Sampling- Celeron Island







T&E Evaluation

Surveys

- July, 2014- Fish
- July and September, 2014-Plants and Terrestrial Wildlife
- August, 2014- Mussels
- Conclusion: Proposed project will have no effect on majority of target species. Proactive protective measures are included in the project including avoiding the heron rookery, and potential bat habitat.





Herpetological Considerations

Stony and Celeron Islands Habitat Restoration Recommendations

June 2014



Prepared For

Environmental Consulting and Technology, Inc 2200 Commonwealth Blvd, Ste 300 Ann Arbor, MI 48105

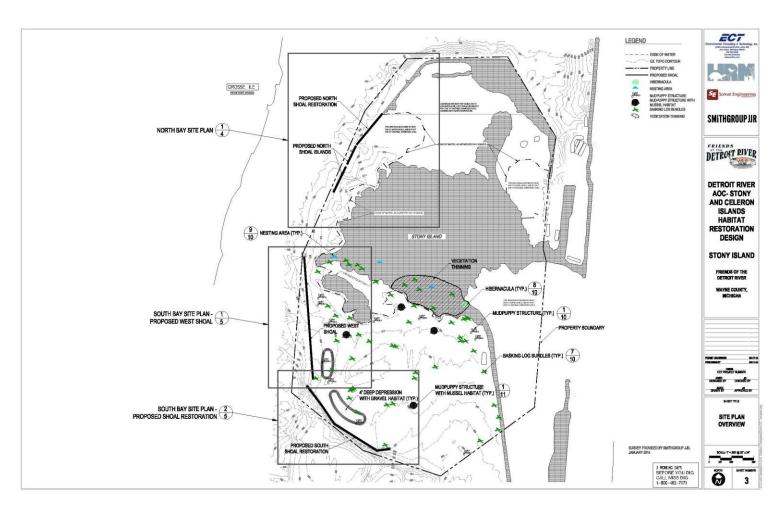
Prepared By:

Herpetological Resource and Management, LLC P.O. Box 110 Chelsea, MI 48118

- Herpetological Resource and Management, LLC- onsite May 20, 2014
- Recommendations Report
 - Basking Logs
 - Cover Logs
 - Hibernacula
 - Mudpuppy Structures
 - Nesting Areas

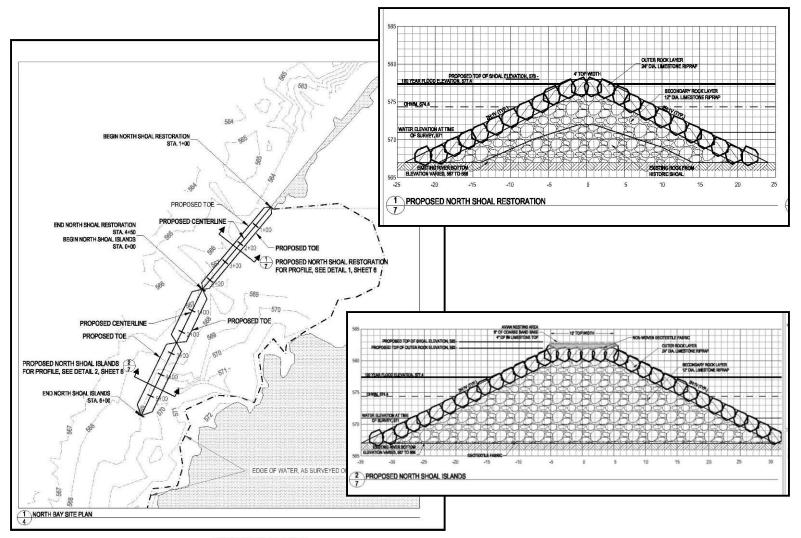


Stony Island Design



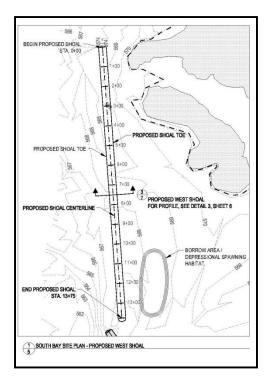


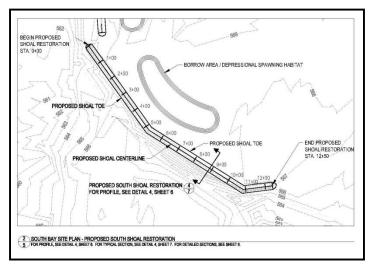
Stony Island Design

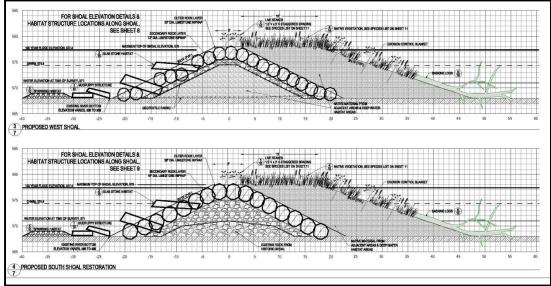




Stony Island Design

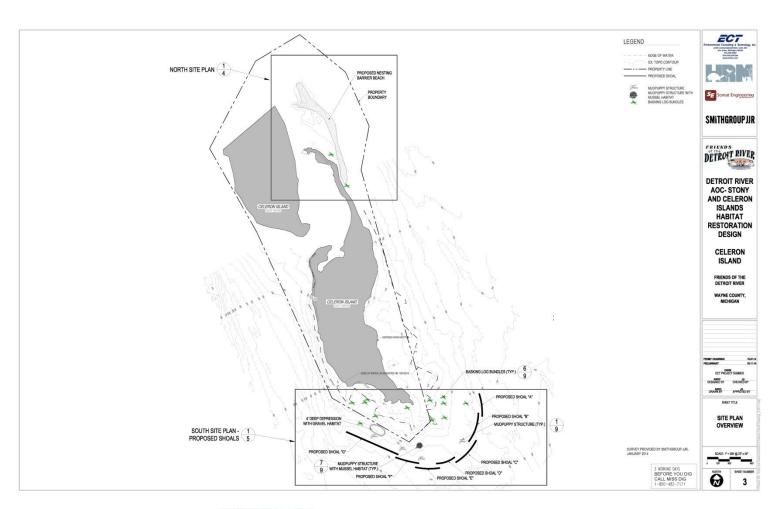






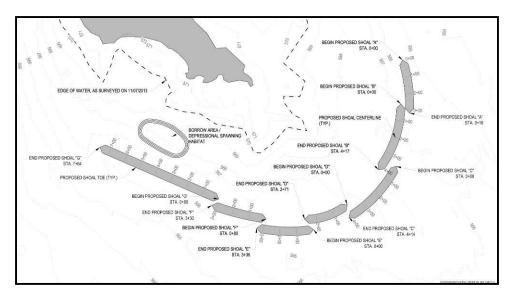


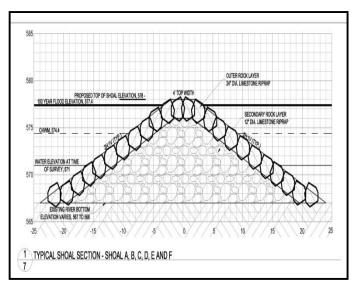
Celeron Island Design

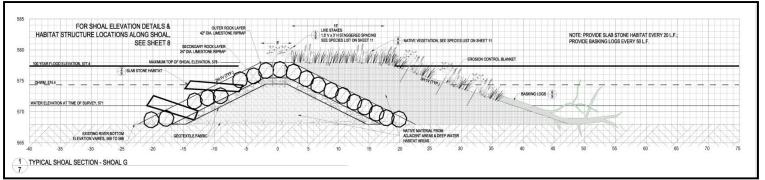




Celeron Island Design









Design Summary

Stony Island

600 Linear Feet of Shoal Islands 10,000 Square Feet of Common Tern Habitat 3,000 Linear Feet of Shoal Restoration/ Creation

50 Acres of Back Water Habitat Protected

100 Slab Stone Habitats

41 Basking Logs

37 Basking Log Bundles

34 Gravel Spawning Habitats

10 Mudpuppy Habitat Structures

4 Mudpuppy with Mussel Habitat Structures

2 Acres of Deeper Water Habitat

Celeron Island

2800 Linear Feet of Shoal Restoration/ Creation

3000 Linear Feet of Shoreline Protected

57 Acres of Back Water Habitat Protected

38 Slab Stone Habitats

15 Basking Logs

12 Basking Log Bundles

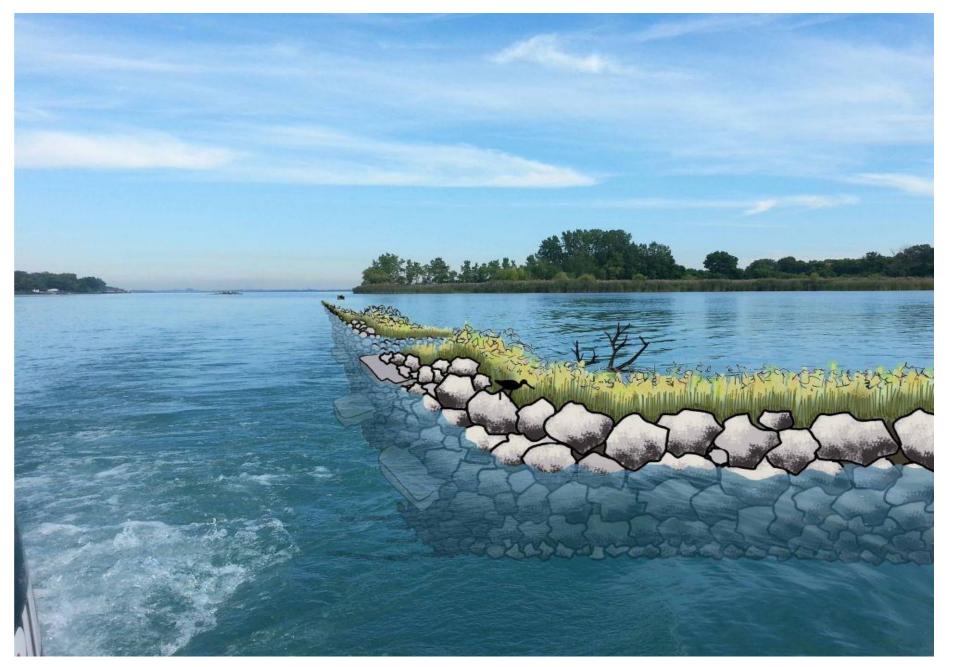
6 Acres of Nesting Barrier Beach

4 Mudpuppy Habitat Structures

1 Acre of Deeper Water Habitat

1 Mudpuppy with Mussel Habitat Structure





2/21/2016

Questions?

