



# Implementation of Coastal Habitat in the Detroit Area of Concern (AOC) - Stony and Celeron Islands

## NCER 2018

**ECT** Environmental Consulting & Technology, Inc.

August 2018

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# Background - Project Team

- ◉ **Property Owner:** Michigan Department of Natural Resources (MDNR)
- ◉ **Funding Recipient/Contracting Owner:** Friends of the Detroit River (FDR)
- ◉ **Funding Agency:** National Oceanic and Atmospheric Association (NOAA)
- ◉ **Permitting Agency:** Michigan Department of Environmental Quality (MDEQ)
- ◉ **Permitting Agency:** United States Army Corps of Engineers (USACE)
- ◉ **Engineer:** Environmental Consulting & Technology, Inc. (ECT)
- ◉ **Contractor:** E.C. Korneffel Company (ECK)

# Background - Island Locations



# Background - Stony Island

- ◉ Named for exposed limestone bedrock
- ◉ 1907 to 1912- Dunbar and Sullivan Dredging Co. created a on the island for the work force constructing the Livingston Channel
- ◉ Mid-1990's- wetland portion of the island was sold to the State of Michigan
- ◉ Currently managed by the MDNR's Pointe Mouillee State Game area



# Loss of Habitat - Wetlands

## Celeron and Stony Island Restoration Projects



The Detroit River has lost over 90% of its original historical wetlands

# Loss of Habitat - Celeron Island



# Loss of Habitat - Native Spawning

- River bottom before blasting for construction of the Livingston channel



- River bottom after blasting occurred



# Projects Purpose

## ○ Restore Habitat

- Restore Coastal Wetland Habitat
- Provide Habitat Diversity
- Protect Islands from Erosion
- Address Degradation of Fish and Wildlife Populations BUI
- Address Loss of Fish and Wildlife Habitat BUI

## ○ Maintain and Enhance Recreational Benefits





# Projects Components

- ◎ Field Data Gathering
  - Topographical Survey
  - Geotechnical Investigation
  - Baseline Fish Sampling
  - Sediment Sampling
  - T&E Evaluation and Survey
  - Baseline Aquatic Habitat Mapping
  - Design
- ◎ Permitting
- ◎ Construction - On Going



# Project Design - Stony Island

**GENERAL NOTES**

- ALL WORK TO BE PERFORMED ACCORDING TO THE SCHEDULED AND USAGE PERMITS AND ALL OTHER PERMITS ISSUED FOR THIS PROJECT.

**STAGING AND ACCESS ISLES**

- CONTRACTOR TO COORDINATE WITH OWNER AND ENGINEER ON LOCATION OF STAGING AREAS.

**CONTRACTOR TO COORDINATE WITH OWNER AND ENGINEER ON ACCESS TO WORK AREAS.**

THE CONTRACTOR MAY ACCESS THE WORK AREAS THE CHANGES AS SHOWN AS LONG AS HE IS COVERED BY RESTRICTIONS AND PERMITS PRESENTED IN THESE CONTRACT DOCUMENTS.

THE CONTRACTOR SHALL NOTE THAT A PORTION OF THE EAST SIDE OF THE ISLAND IS COVERED BY A PRIVATE SHUTTY. CONTRACTOR SHALL NOT BE ALLOWED TO ENTER THE PROPERTY FROM THE EAST SIDE OF THE ISLAND. CONTRACTOR SHALL PROVIDE TRAVEL TO THE WORK AREA FOR THE CONTRACTOR, PROPERTY OWNER, AND OWNERS REPRESENTATIVE AT A REASONABLE FREQUENCY THROUGHOUT THE DURATION OF THE PROJECT WORK.

THE OWNER, PROPERTY OWNER AND ENGINEER WILL PROVIDE "T" VIEWS OF THE PROPERTY AT THEIR OWN RISK. THERE MAY BE OCCUPANCY AND/OR ACCESS OF MEMBERS OF THE PROJECT TEAM WILL NOT BE ABLE TO PROVIDE THESE ON TRAVEL TO THE PROJECT WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TRAVEL TO THE WORK AREA FOR THE CONTRACTOR, PROPERTY OWNER, AND OWNERS REPRESENTATIVE AT A REASONABLE FREQUENCY THROUGHOUT THE DURATION OF THE PROJECT WORK.

**TURBIDITY CONTROL NOTES**

- NO WORK OR DREDGE IS TO BE ALLOWED FROM JULY 1 THROUGH JULY 30 OUTLET THE USE OF A TURBIDITY CURTAIN TO DISCLOSE THE RESTRICTION CURTAIN TO APPLY TO THE USE OF CLEAN ROCK AND GRAVEL.
- WHEN REQUIRED, TURBIDITY CURTAIN TO DISCLOSE THE WORK AREA SHALL BE INSTALLED TO BE SECURED TO ENTER FROM THE BED OF THE WATER BODY TO A POINT ABOVE THE STATIC WATER SURFACE.
- WHEN USED, TURBIDITY CURTAIN TO BE MAINTAINED FOR THE DURATION OF THE PROJECT AND LEFT IN PLACE AFTER COMPLETION OF DREDGEING. ALL CURTAIN SEDIMENTATION SHALL BE SETTLED.

**PROTECTION OF SPECIFIC SPECIES**

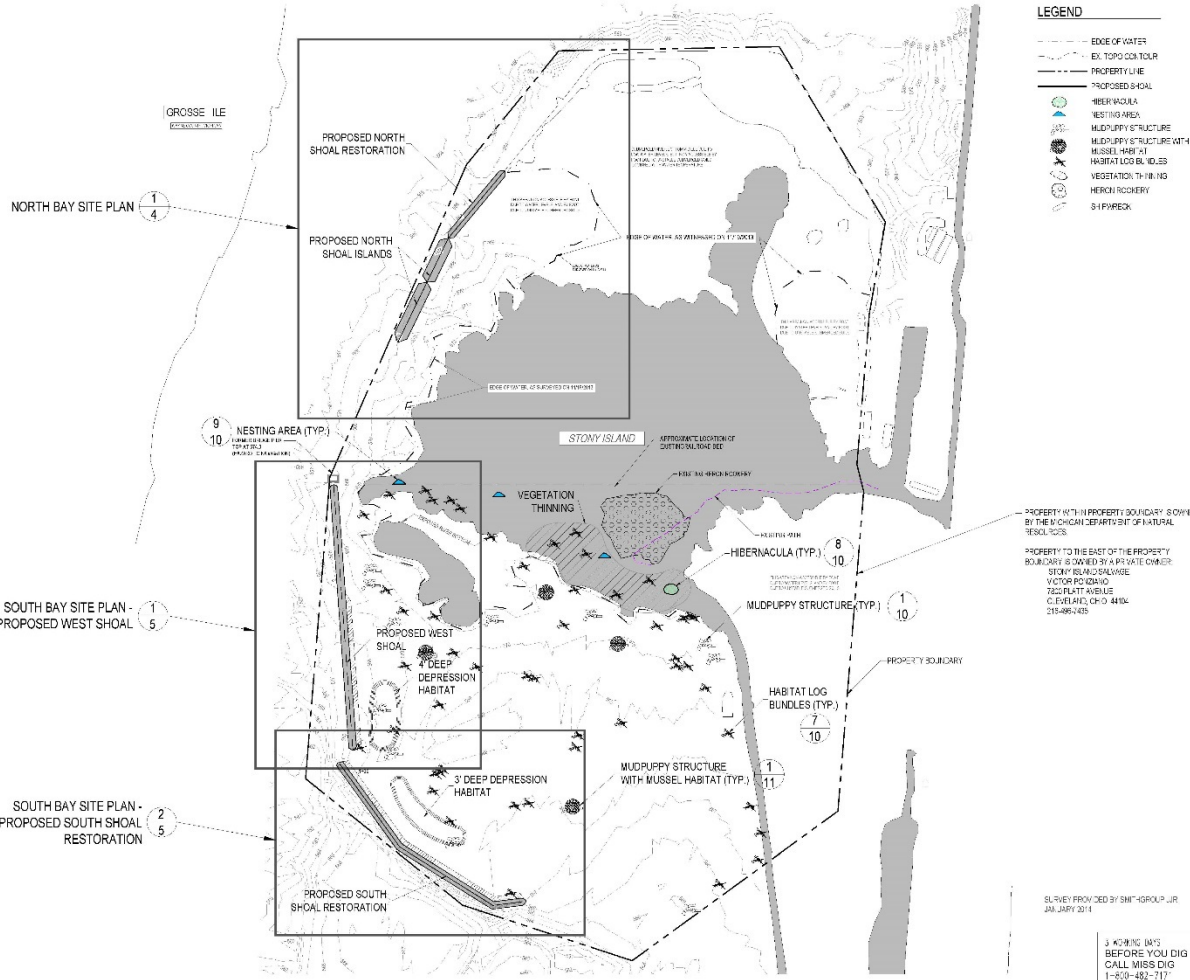
NEARBY ROCKERY: THE ROCKERY HAS BEEN DELINEATED BY THE DNR. THE ROCKERY IS PROTECTED UNDER THE BROWN BIRD TREATY ACT. WORKING ON THE ROCKERY SHALL BE LIMITED TO OCCUR WITHIN THE LIMITS OF THE ROCKERY MARCH 15<sup>TH</sup> THROUGH SEPTEMBER 15<sup>TH</sup> AND SHALL NOT BE ALLOWED TO OCCUR WITHIN THIS AREA AT ANY TIME.

FRANKLIN WILSON: THIS AREA IS CONSIDERED BY SPECIAL CONCERN. WORKING ON FRANKLIN WILSON CLUSTERS OF ROCKY SANDWICH THE SOIL. THESE AREAS OF THE OLD RAILROAD GRADE. IF ON ISLAND CONTRACTOR HAS TO USE TRUCKS TO ACCESS BUT ACCESS ALONG THE RAILROAD GRADE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS TO PROTECT THE SPECIAL AREA. BE COVERED BY THE CONTRACTOR IF DEEMED NECESSARY.

SAVING FOR SPOTS: EASTERN FOX SHOULDER IS A RARE BIRD SPECIES. WORKING TO OCCUR ON THE ISLAND NO BIRD WORK SHALL BE ALLOWED DURING THE BIRDS ACTIVE PERIOD. FROM APRIL 15<sup>TH</sup> THROUGH NOVEMBER 15<sup>TH</sup> OF EACH YEAR. THE BIRDS ARE IN PLACE. THE ISLAND APPLIES TO THE STAGING OF CONSTRUCTION MATERIALS ON ISLAND DURING THE BIRDS ACTIVE PERIOD. CONTRACTOR TO CREATE TEMPORARY COVERABLES THAT MAY RESULT IN SPECIES DESTRUCTION AT A LATER DATE.

PERMIT REQUIREMENTS TO INCLUDE 200 YD BUFFER OF 85% SILT. PERMIT AROUND ALL STAGING AREAS, AND ALONG ALL ACCESS DRIVES. THE CONTRACTOR SHALL MAINTAIN THE WORK AREA STAGING AREA SHALL BE RESTRICTED TO SPECIFICALLY IDENTIFIED AREAS TO BE RECORDED AND PROVIDED TO ENGINEER ON A PERIODIC BASIS.

ADDITIONAL AND RESTRICTIONS ON WORKING ON STONY BAY: FEDERAL AND STATE RESTRICTIONS ON WORKING ON STONY BAY. FEDERAL AND STATE RESTRICTIONS ON WORKING ON STONY BAY. FEDERAL AND STATE RESTRICTIONS ON WORKING ON STONY BAY. FEDERAL AND STATE RESTRICTIONS ON WORKING ON STONY BAY.



**DETROIT RIVER AOC-STONY ISLAND HABITAT RESTORATION PROJECT**

FRIENDS OF THE DETROIT RIVER

WAYNE COUNTY, MICHIGAN

| DATE         | BY       |
|--------------|----------|
| FOR APPROVAL | APR 2016 |
| FOR REVISION | JUN 2016 |
| FOR CHANGE   | 11-08-16 |
| FOR APPROVAL | 08-01-16 |
| FOR APPROVAL | 08-11-16 |

**SITE PLAN OVERVIEW**

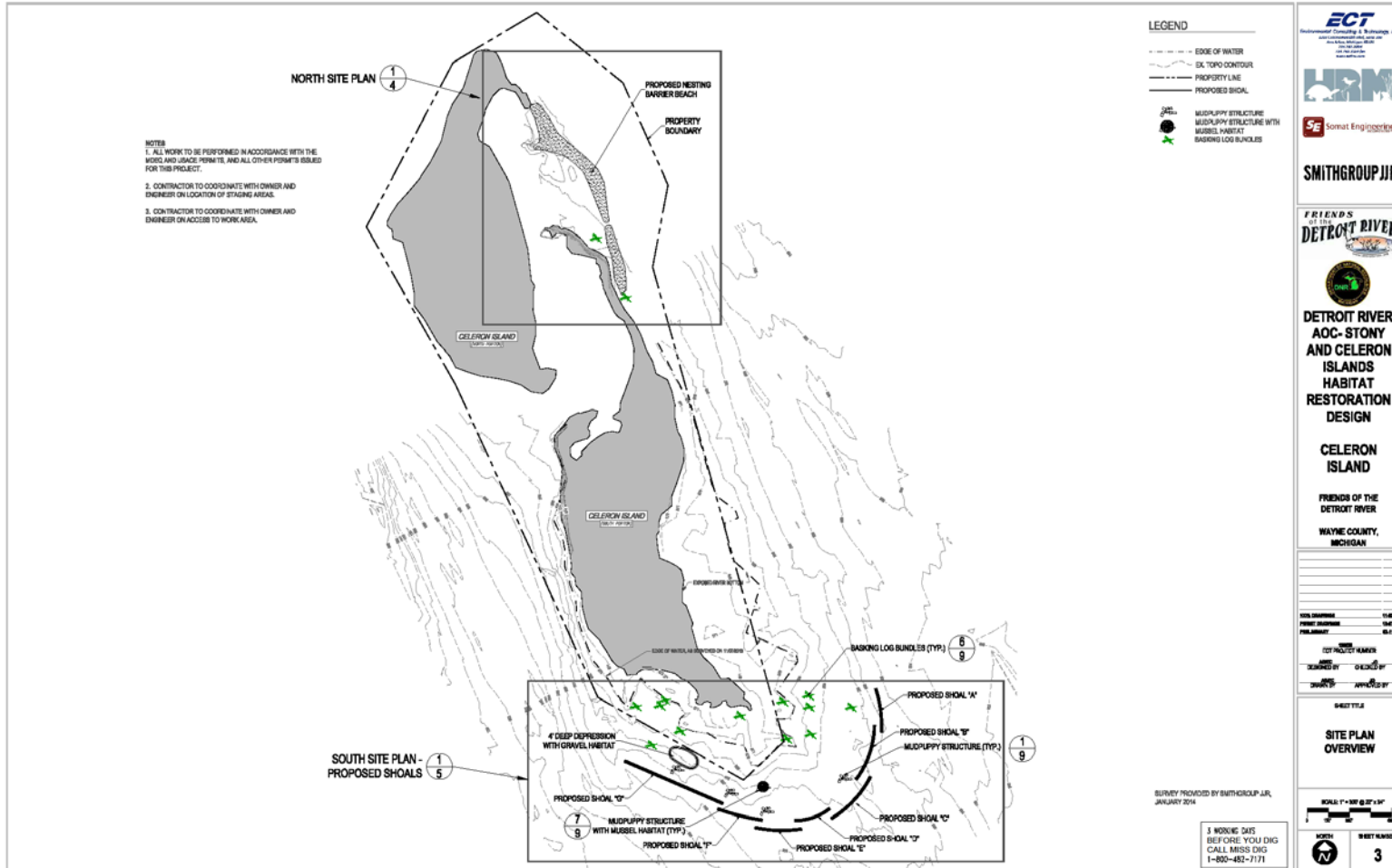
SCALE: 1" = 200' ±

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 1-800-482-7177

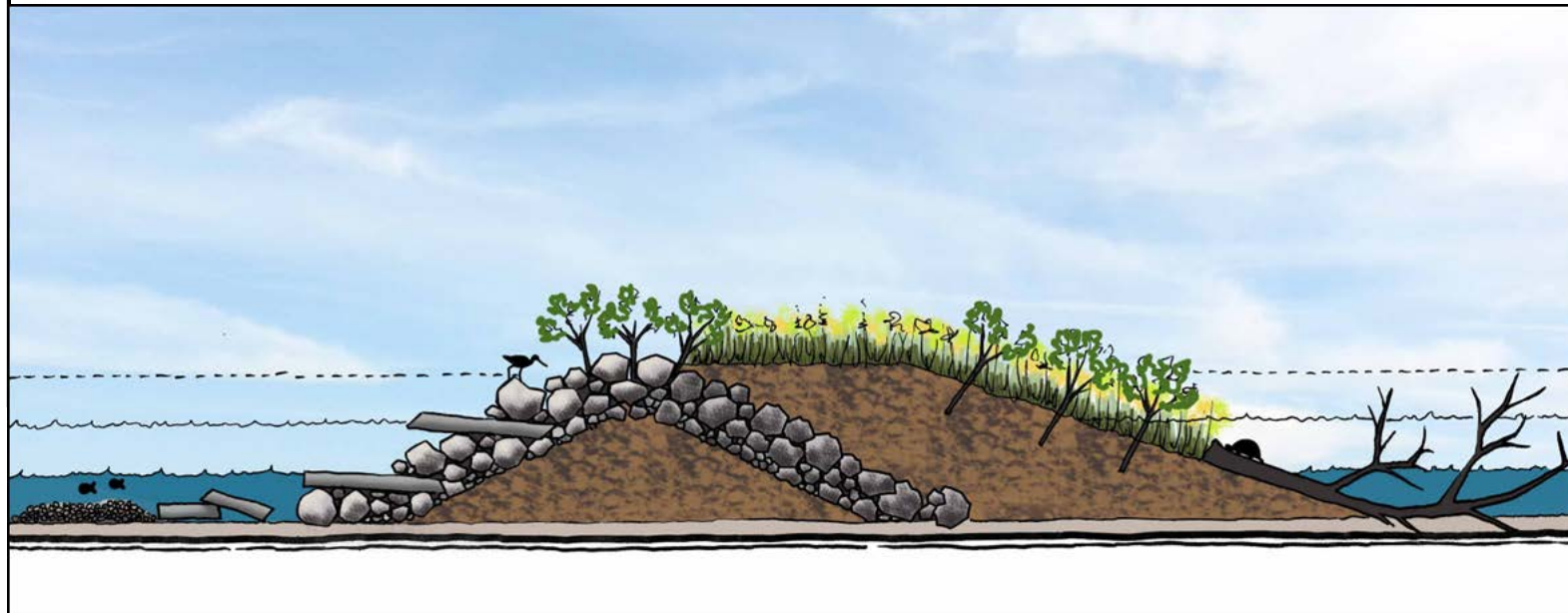
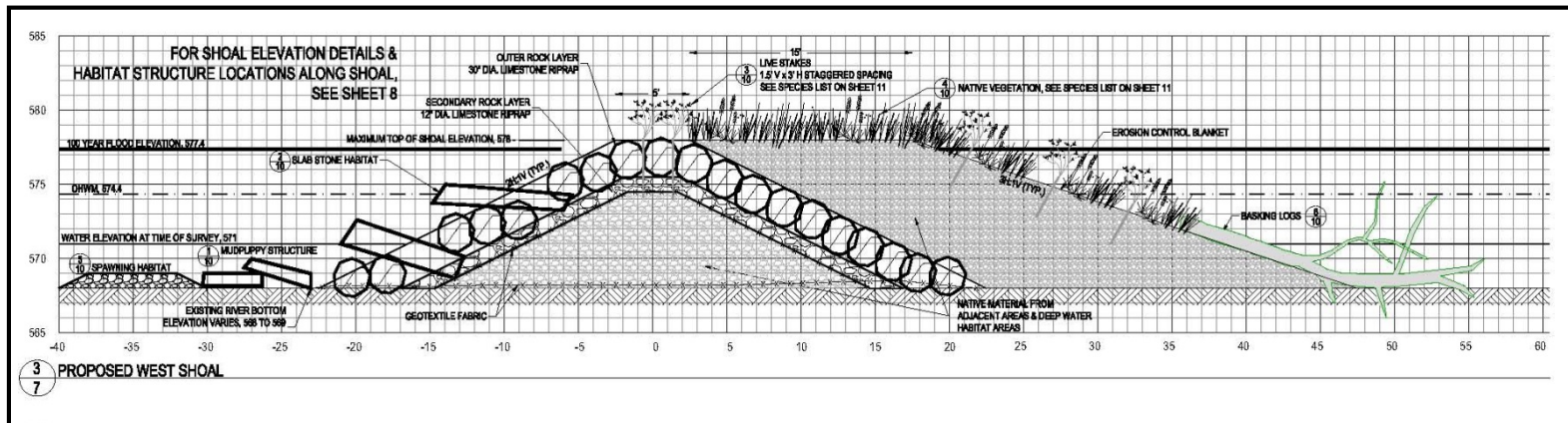
SHEET NUMBER: 3



# Project Design - Celeron Island



# Projects Design - Shoals



# Projects Outcomes

## Stony Island

- ⦿ 600 Linear Feet of Shoal Island
- ⦿ 3,000 Linear Feet of Shoal Restoration/Creation
- ⦿ 50 Acres of Back Water Habitat Protected
- ⦿ 2 Acres of Deeper Water
- ⦿ Rock hibernacula on the island (Snake Condos)
- ⦿ Tern Habitat Creation
- ⦿ Sand turtle nesting areas on the island
- ⦿ Approximately 90 habitat structures
- ⦿ Cost - \$7,573,138
- ⦿ NOAA GLRI Funded

## Celeron Island

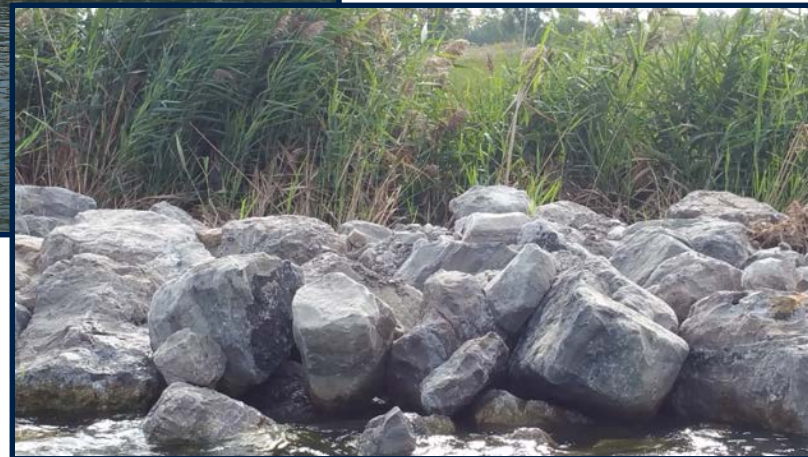
- ⦿ 2500 Linear Feet of Shoal Restoration/Creation
- ⦿ 1,500 Linear Feet of Barrier Beach Shoal
- ⦿ Tern Habitat Creation
- ⦿ 3,000 Linear Feet of Shoreline Protected
- ⦿ 55 Acres of Back Water Habitat Protected
- ⦿ Approximately 30 habitat structures
- ⦿ 1 Acre of Deeper Water Habitat
- ⦿ Cost - Approximately \$7,984,000
- ⦿ NOAA GLRI Funded

# Construction - Stony island

- Began - June 2016
- Completion- Fall 2018



# Construction - Stony Island

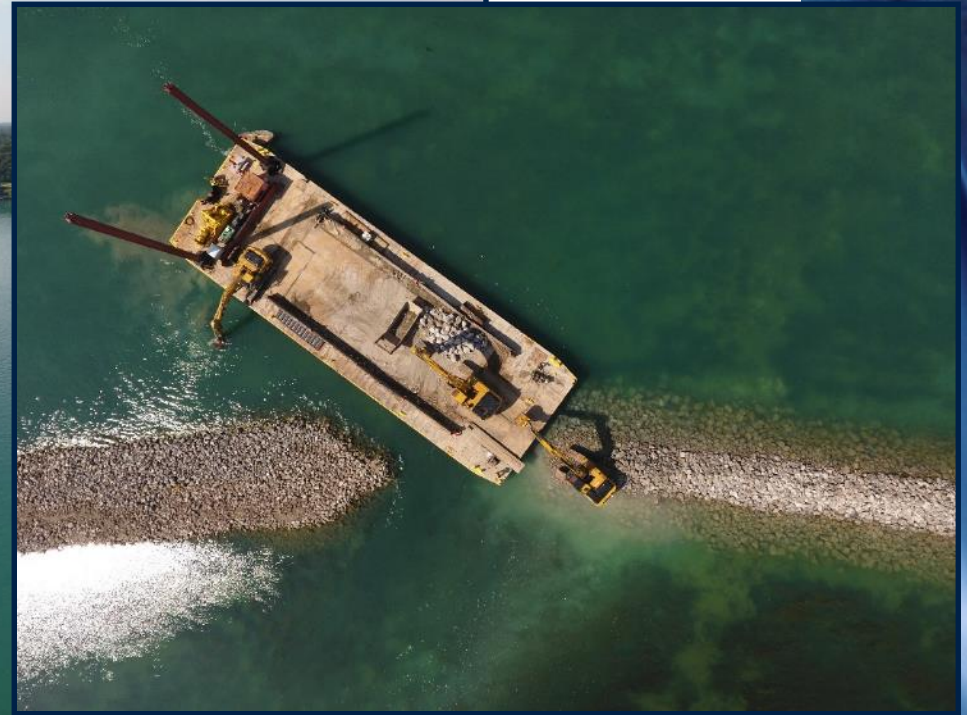


# Construction - Stony Island





# Construction - Stony Island



# Construction - Stony Island



# Construction - Stony Island



# Construction - Celeron Island



# Construction - Structural Habitat



# Post Use

- ◉ Snowy Owls
- ◉ Ring billed gulls
- ◉ Herring Gull (bigger brownish gull)
- ◉ Cormorants (all black)
- ◉ Common Tern (the smaller ones)
- ◉ Caspian Tern (the bigger ones)
- ◉ Blue Heron
- ◉ White and black raptors (possibly Coopers Hawk)



# Post Use

- Yellow perch; black, brown, and yellow bullhead, freshwater drum, bluegill, pumpkinseed, rock bass, northern pike
- Mudpuppies
- Prior to restoration, Stony Island was known to historically support 7 species of herpetofauna post monitoring yield 12 species including multiple rare and sensitive species in Michigan.



# Final Thoughts

- Stick with it.... These projects were 15+ years in the making
- Stakeholder driven for sustainability
- Incorporation of recreation enhances stakeholder acceptance and drive
- Political will





# Thank you

