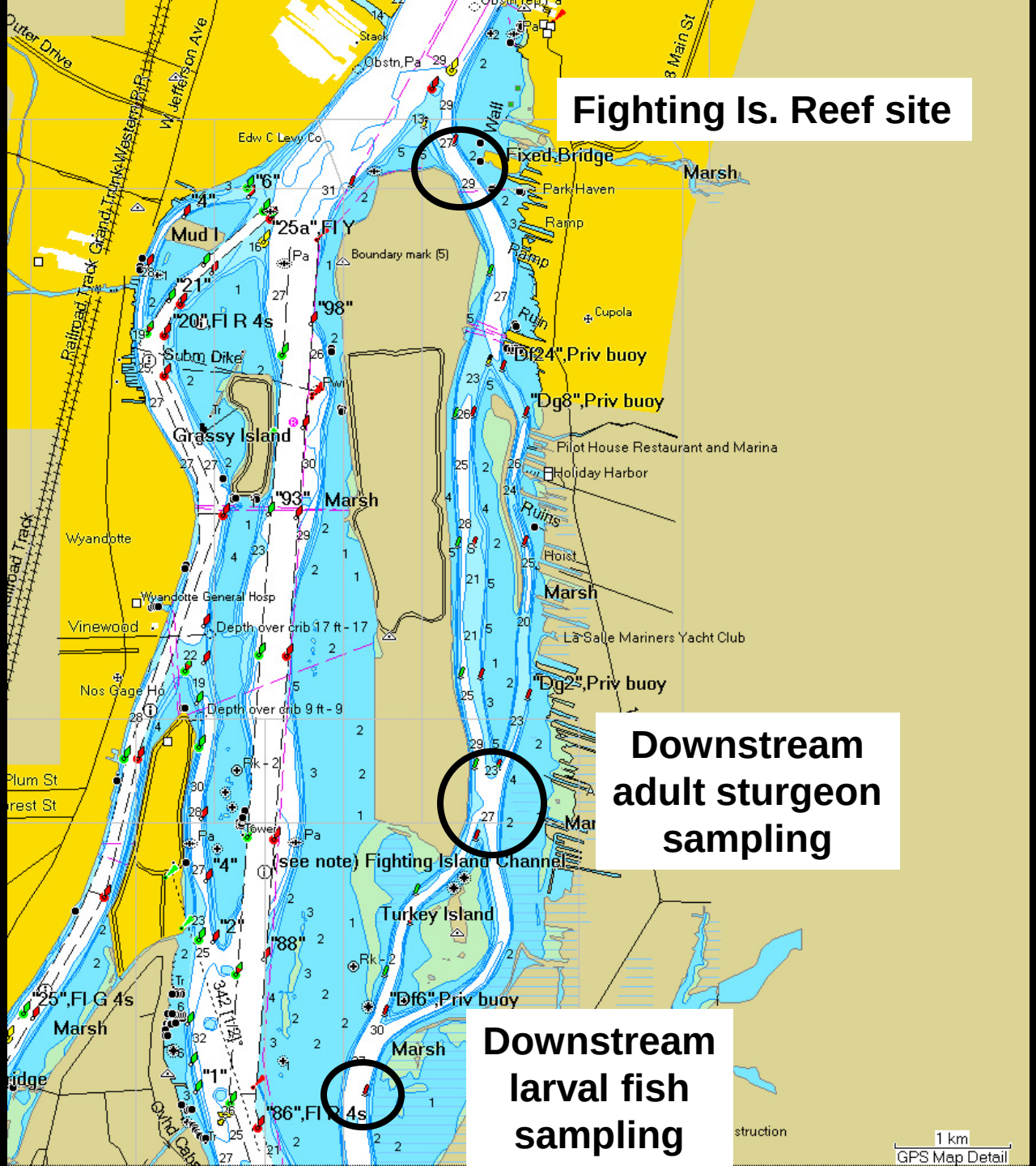
Huron – Erie Corridor

Annual Steering Committee Meeting, February 2010

Research updates:

Fighting Island Fish Habitat Restoration Project


Fighting Is. Reef site
Downstream adult sturgeon sampling
Downstream larval fish sampling
Fixed Bridge
Marsh
Park Haven
Ramp
Mud I
"25a",Fl Y
Boundary mark (5)
"21"
"98"
"20",Fl R 4s
Subm Dike
Cupola
"Df24",Priv buoy
"Dg8",Priv buoy
Grassy Island
Pilot House Restaurant and Marina
Holiday Harbor
"93"
Marsh
Ruins
Hoist
Wyandotte
Wyandotte General Hosp
Vinewood
Depth over crib 17 ft - 17
La Salle Mariners Yacht Club
"Dg2",Priv buoy
Depth over crib 9 ft - 9
(see note) Fighting Island Channel
Turkey Island
"88"
"2"
"4"
"6"
"25",Fl G 4s
"Df6",Priv buoy
"1"
"86",Fl R 4s
Edw C Levy Co
Stack
Obstn,Pa
Outer Drive
W Jefferson Ave
Railroad Track
Grand Trunk Western R.R.
Main St
1 km
GPS Map Detail

Chronology of Events

- 2006 – Fish spawning reef restoration proposed off Fighting Island (FI)
- 2006-2008 – Preconstruction assessment of fish use, active spawning, and site characterization performed
- September, 2008 – 12 spawning reefs constructed in the east channel, northeast of the BASF lodge on FI.
- Fall, 2008 – post assessment monitoring initiated (and aborted due to macrophyte drift)
- **2009 – Successfully conducted first full-year post construction assessment**

Spring 2009 Adult Fish sampling

- **Gillnets;** (Boase)
  - 1 night / wk (15 Apr – 12 May)
  - 9 species collected – mostly walleye, but also included n. pike, gizzard shad, white bass, white perch, rock bass, silver redhorse, golden redhorse, and northern hogsucker

- **Setlines;**
  - 78 overnight sets (38,394 hook hrs.)
  - 13 lake sturgeon collected (3 recaps)
  - Sizes ranged from 1.1 – 1.8 m (6.5 – 33.9 kg)

- **Minnow Traps;**
  - Northern madtom (7) collected (1st occurance)

Spring 2009 Egg Deposition Sampling

- **Egg mats:** (Kennedy)
  - 8 wks (7 Apr – 26 May); 4° - 16°C
  - 3-4 gangs ea., upstream and downstream (natural subst)
  - 1 gang ea. Reef (12) Total sample area < 0.1% per reef

- **14,861 total eggs collected (~90% walleye)**
  - **Walleye**; more egg deposition on natural substrate (avg 4,973/m^2 vs 1,616/m^2 on reef)
  - "**Suckers**"; more egg depositon on reefs (142/m^2 on reef vs 44/m^2 off)

- **346 Lake sturgeon eggs collected (1st occurance)**
  - Over 99% collected on reefs (density range; 0 – 383 eggs/m^2)
  - Four reefs closest to FI had all LAS eggs
  - No significant difference in egg density between substrate types
  - ~110 larvae provided for genetics testing (A. Welch, SUNY Oswego)

2009 Larval Fish Sampling (only spring)

- **Larval drift sampling – sub-surface tows** (Roseman)
  - Above/below Fighting Island reef
  - Eight weekly collections
  - Lake whitefish, walleye, yellow perch, Cyprinids, Morone, suckers, others

- **Larval lake sturgeon experimental sampling** (Boase/Roseman)
  - D-frame ichthio-plankton net
  - Designed method for sampling deep river drift (on bottom)
  - Generally fished from dusk to midnight
  - Effort restricted to the 4 reefs where lake sturgeon eggs had been collected (during the previous 2 weeks)
  - Successfully captured 7 larval lake sturgeon
  - Larvae provided for genetics testing

Fall 2009 Adult Fish Sampling

- **Only gillnets fished** (Boase)
  - About 20 km downstream of FI, at the mouth of the Detroit River (near Bar Point ON)
  - Attempt to collect lake whitefish as they entered the river
  - Nets fished 1 night/wk (21 Oct – 16 Nov)
  - Fishing period ranged from roughly dusk to Midnight to minimize clogging, and optimize time of greatest movement of lake whitefish
  - Sampling ended one week after eggs were collected at FI reefs

- **5 species of adult fish collected**
  - Only 1 lake whitefish collected (ripe male; 532 mm)
  - Other species collected included; walleye, freshwater drum, rock bass, and silver redhorse

Fall 2009 Egg Sampling

- **Egg mats:** (Kennedy)
  - ~8 wks (22 Oct – 5 Dec); 10° - 3.8°C
  - Targeted lake whitefish only
  - 5 gangs ea., upstream and downstream (natural subst)
  - 1 gang ea. Reef (12) Total sample area < 0.1% per reef
  - Eliminated buoys for 'leader' line hooked by grapnel – no gear lost!!

- **665 total eggs collected**
  - Most egg deposition on natural substrate (avg 168/m^2 off reef vs 41/m^2 on reef)
  - Egg deposition skewed to the island side of the channel
  - No significant difference above or below the reefs (slightly more downstream)
  - Larvae provided for genetics testing (W. Stott, USGS-GLSC)

2010 sampling

- **Continued monitoring at Fighting Is - Spring and Fall**
  - Egg mats, Setlines, gillnets, minnow traps, sub-surface larval tows, and D-frame larval drift nets
  - Genetics testing continuing for LAS and LWF
  - 18 month examination of the reef condition (SCUBA) to evaluate infilling and use by exotic species

- **Expanded larval fish studies**
  - SSP award @ $140K for three year study (Boase/Roseman)
    - Focus on downstream, nearshore, shallow nursery habitat
    - Help identify critical habitat for early life-stages of fish using the FI reefs
  - HEC – GLRI projects
    - (Roseman will discuss later...)