ROUND GOBY AND THE CHAMPLAIN CANAL

- Champlain Canal barrier feasibility study to prevent the inter-basin transfer of aquatic invasive species between the Hudson and Champlain drainages
- Round goby detection at the confluence of Mohawk and Hudson Rivers initiates Rapid Response Task Force – reinforces need for all taxa barrier

Princeton Hydro

HDR

US Army Corps of Engineers ®
New York District

Lake Champlain Basin Program

NE IW PCC

DISTRIBUTION TO THE EAST

USGS science for a changing world

NAS - Nonindigenous Aquatic Species

Home | Alert System | Database & Queries | Taxa Information | Report a Sighting | Screening Tool (SEINeD)

Query | Species | Layers

Species Observations

- Clustered Specimen Records
  - 1
  - 2 to 5
  - 6 to 10
  - 11 to 19
  - 20 or more
  - Selected
- Individual Specimens
  - Selected

Neogobius melanostomus
Round Goby
Fishes
Exotic

Include ☐ HUC8 Level Records

Map | Records

Map updated Tue Jan 18 2022. Data Disclaimer: Number of records does not imply species abundance. These maps represent collection records only and may not reflect the actual dist
These data are preliminary or provisional and are subject to revision. They are being provided to meet the need for timely best science. The data have not received final approval by the
U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the data. Please contact NAS staff for a custom query.

Ecological, Fishery & Human Impact Concerns

Ecological effects

- Compete with and displace benthic species including sculpins, darters, stonecat, logperch
- Consume lake trout eggs and fry
- Destroy bass nests when male bass are removed, even temporarily, by catch-and-release anglers
- Carry VHS – viral hemorrhagic septicemia – impacts 25+ freshwater fish
- Alter flow of energy and nutrients in the Great Lakes
- Increase incidence of avian botulism

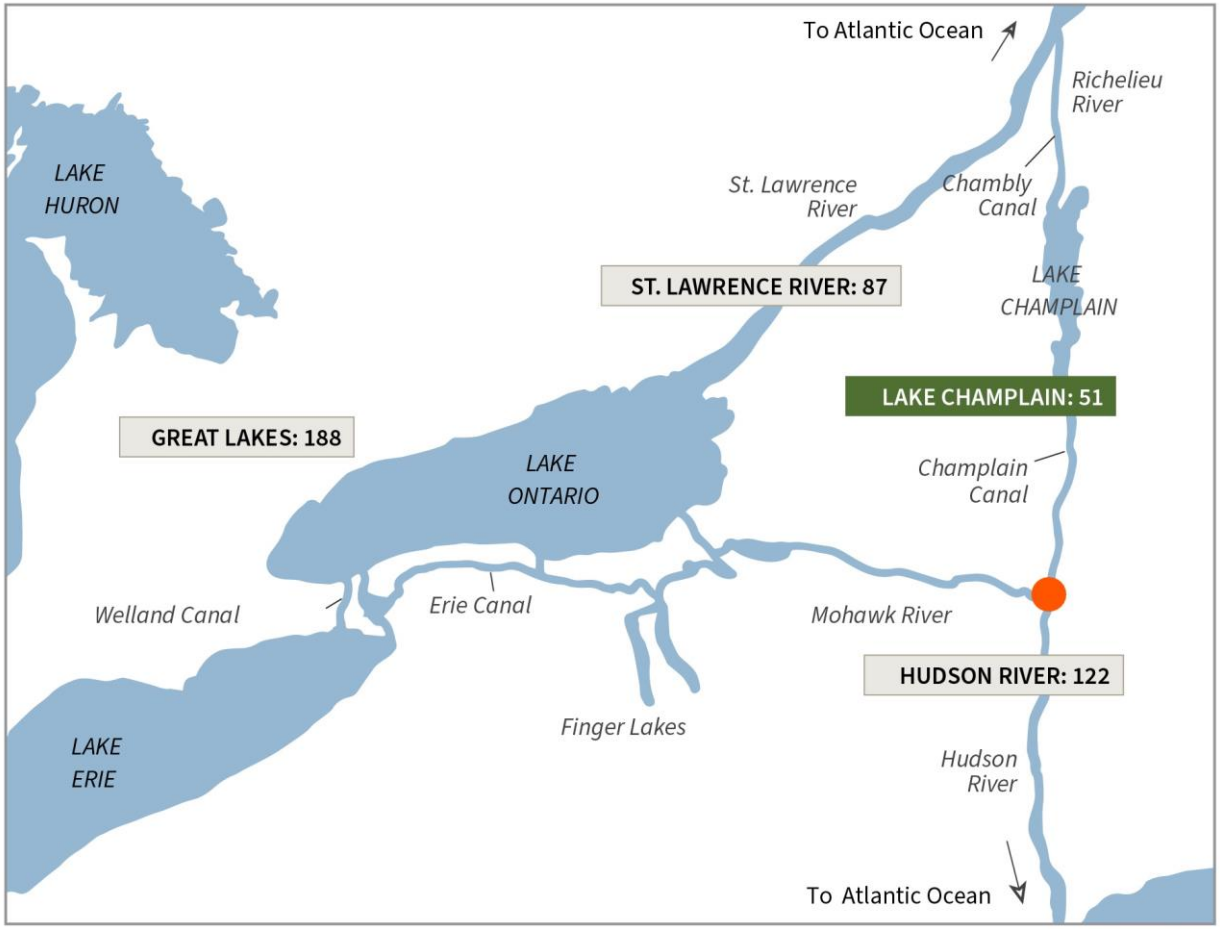
Human effects

- Provide a direct conduit of contaminants from sediments, via zebra mussels, to bass and other predator fish that eat gobies and are then eaten by humans
- Steal bait off hooks impacting fishery (e.g., walleye, bass & perch)

Lake Champlain Basin Program

NE IW PCC

ENTRY POINTS FOR NONNATIVE SPECIES TO LAKE CHAMPLAIN



NOTE: Data current as of January 2021. All waterways contain some overlap of species.
DATA SOURCES: UVM, LCBP, Lake Champlain Sea Grant, Great Lakes Environmental Research Laboratory, Lafontaine and Costan 2002, Strayer 2012, Egan 2017, and GLANSIS 2020.

USACE/HDR Project stakeholder Team

Summary of Control Measures used in Alternatives

- Defined 10 possible Measures for controlling the spread of Aquatic Invasive Species (AIS)
- Developed 6 Alternatives using combinations of the 10 measures to reduce or eliminate cross-basin transfer of AIS (Hudson River and Lake Champlain basins)
- Deliberately made the range of alternatives broad so costs & benefits of large & small investments could be considered

Control Measure	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6
1) Reverse Flow C9 → C8, Raise Weir	x	x	x	x	x	x
2) Back Pump		x	x			
3) Alternate Makeup Water			x			
4) Physical Barrier (Berm / Block Flow)		x				
5) Boat Lift and Cleaning Station		x		x	x	
6) Wedge Wire Intake Screen			x	x		
7) Modified Lock Passage Scheduling and Operations	x		x			
8) Water Filtration / Storage Tank Feed			x			
9) Repair Lock Seals	x	x	x	x	x	x
10) Chlorination Treatment Chamber						x

- Identify measures to form 6 alternatives
- Select to 3 alternatives
- Evaluating value functions for cost/benefit analysis of 3 alternatives

Lake Champlain Basin Program

NE IW PCC

Alternatives include constructing a berm south of Lock 9

Reverse flow at lock C9, back pump, build burm, raise weir, boat lift with cleaning station, repair lock seals
Study is underway

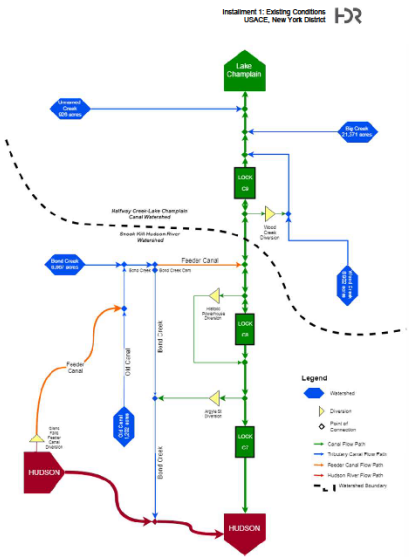
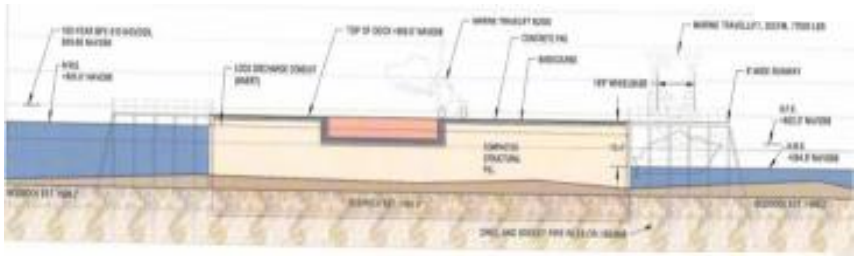


Figure 7 - Champlain Canal Schematic (Locks C7-C9)



Lake Champlain Basin Program

NE IW PCC

Lake Champlain Goby Response Plans

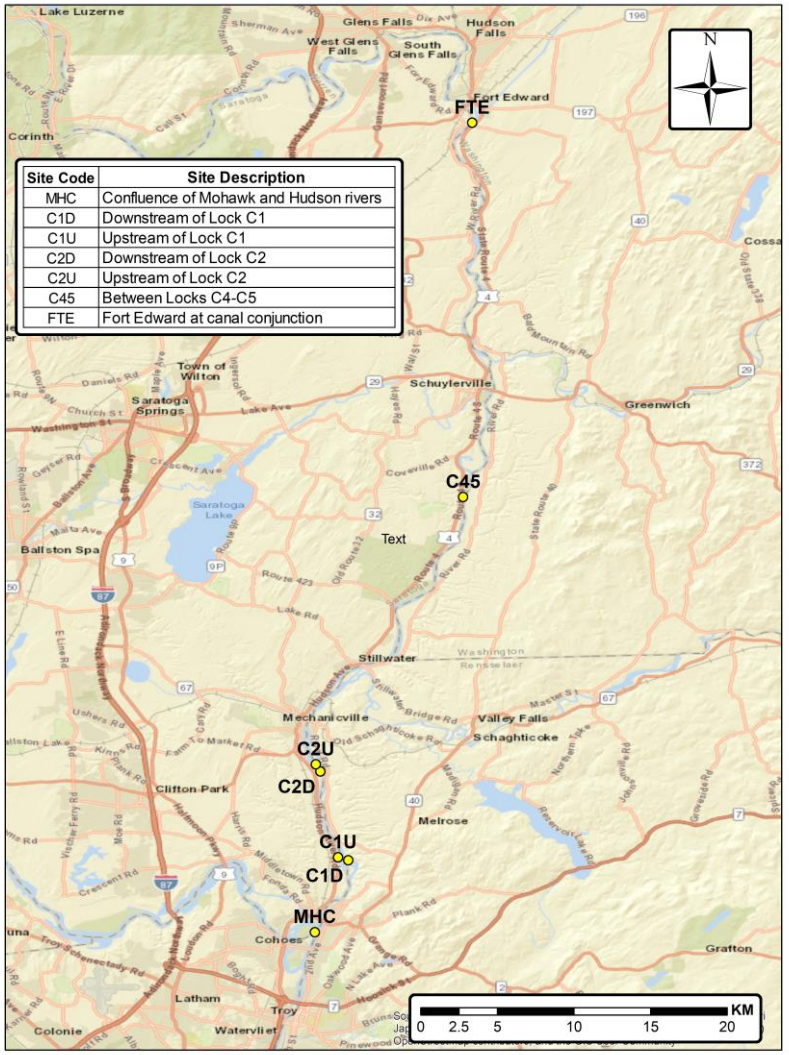
- Lake Champlain AIS Rapid Response Task Force (USFWS, NYSDEC, VFWD, Quebec MFFP)
  - Evaluating timing, threats and options
- Monitoring goby movement in Hudson and Richelieu (cooperation with USFWS and USGS)
- Considering Champlain Canal Barrier Alternatives (permanent and stop gap measures)
  - Complete Feasibility Study and Implementation Plan (USACE)
  - Evaluate Interim solutions
- Outreach to anglers, boaters and public (USFWS, NYSDEC, VFWD, LCBP, Sea Grant)
  - Impacts to ecology and fishery
  - Avoiding introductions by anglers/boaters
  - Needs and benefits of canal barrier

Lake Champlain Basin Program

NE IW PCC

Monitoring Round Goby: Proposed eDNA and Trawling Project

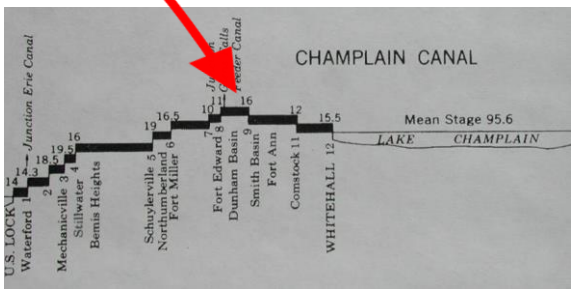
- LCBP/NEI and USGS contract executed - paired eDNA and trawl surveys
  - Hudson River (7 sites), and
  - Additional eDNA-only locations (8 sites)(eDNA only) in Lake Champlain Basin
  - Partners: USFWS and USGS

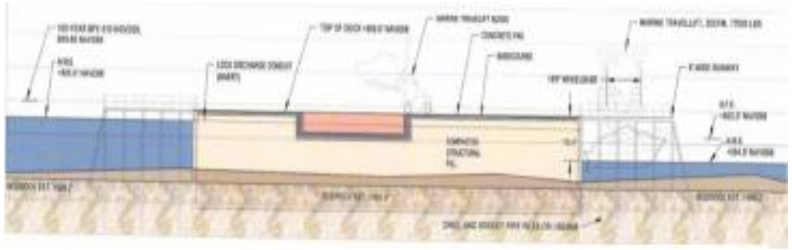


CHAMPLAIN CANAL BARRIER STUDY

- Phase I (Feasibility Study/Alternatives) – completed with local match (LCBP/NEIWPCC local sponsor) through Section 542 Watershed Assistance USACE program (35% local match)
- Phase II – data, NEPA, full design may be achieved through Section 542, or other program – estimated cost $4M and two years ($1M in local match that could come from Champlain Hudson Power Express project, GLFC, or other nonfederal source)
- Phase III – Implementation – pursue WRDA Sect. 5146 – full federal expense, no cost-share, appropriation of $40M+

Target Area of the Canal





Lake Champlain Basin Program

NEIWPCC

NEXT STEPS

- Implement Hudson/Lake Champlain goby early detection/monitoring and response plan
- Coordinate increased outreach with anglers, boaters and public – NEI position: Environmental Analyst – Outreach Specialist

https://neiwpcc.org/about-us/careers/current-openings/

- Assist Quebec with monitoring and alternatives for Chambly Canal
- Pursue Champlain Canal barrier Phase II feasibility study

Lake Champlain Basin Program

NEIWPCC

Meg Modley Gilbertson
NEIWPCC Environmental Analyst
Lake Champlain Basin Program
AIS Management Coordinator

mmodley@lcbp.org

lcbp.org | neiwpcc.org