

Mud Bay

SLELO-PRISM Water Chestnut & Hydrilla Surveillance 2012

June 27th (Water Chestnut) & August 2 (Hydrilla), 2012



Figure 1: Panoramic view of Mud Bay, looking west, June 27, 2012. Photo by Mike McHale.

Report drafted by Greg Chapman and Mike McHale, 6/29/12. Updated 7/11/12 & 8/21/12.

Introduction and Background

Mud Bay is an approximately 200-acre bay on the northeastern shore of Lake Ontario, south of the village of Cape Vincent in Jefferson County, New York.

Public boating access is available from an unimproved gravel boat launch recently installed and maintained by the NYS Department of Environmental Conservation, located off Bates road on the south shore of the bay. Informal shoreline fishing access is also available at the eastern end of the bay in the area near the County Route 6 bridge. Several marinas also charge a small fee for public use of their concrete boat launch ramps.

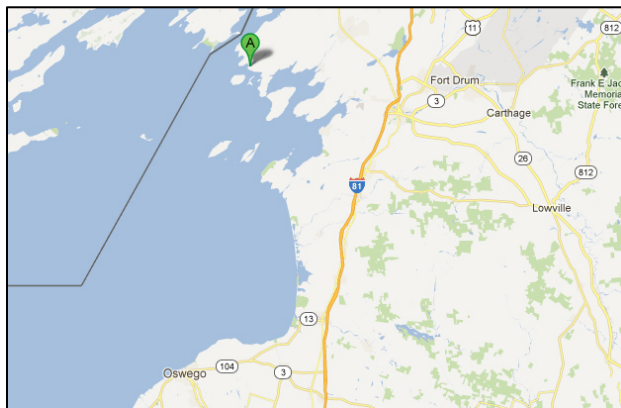


Figure 2: Location of Mud Bay within the eastern Lake Ontario region.



Figure 3: Map of Mud Bay and surrounding area, with marker showing the location of the NYSDEC Boat Launch (access is from Bates Road).

Objectives and Procedures

A survey targeting water chestnut (*Trapa natans*) and other aquatic and riparian invasive species¹ was undertaken by SLELO-PRISM seasonal employees Mike McHale and Greg Chapman on June 27, 2012. The bay's size allowed for a full perimeter survey to be completed.

A subsequent survey targeting Hydrilla (*Hydrilla verticillata*) was undertaken by SLELO-PRISM seasonal employees Mike McHale and Greg Chapman on August 2, 2012.

Additional data detailing submerged aquatic vegetation was collected via rake toss during both surveys. For each rake toss location, a weighted rake was thrown twice, once from each side of the canoe. Submerged aquatic vegetation collected on the end of the rake was then analyzed from each toss, and the total number of species present was recorded, as well as the number and identification of all invasive species present.

Invasive species occurrences were recorded using the iMapInvasives Observation Field Form and reported to the iMapInvasives database. A Garmin hand-held GPS unit was used to record invasive species occurrence coordinates, locations of rake tosses as well as tracking the route taken during the survey.

Observations

No occurrences of Water Chestnut or Hydrilla were observed during either survey of Mud Bay's perimeter.

Small patches of Swallow-wort (*Cynananchum* spp.) were observed growing at the perimeter of the NYSDEC boat launch lower parking lot and near the boat launch itself (see Figure 4). A more focused survey of the boat launch property on July 2, 2012 found additional Swallow-wort growing scattered throughout the property. See the section below (Actions Taken - Swallow-wort Rapid Response) for additional data regarding Swallow-wort occurrences at the Mud Bay NYSDEC Boat Launch and removal/suppression actions taken.



Figure 4: Photo of Swallow-wort (*Cynananchum* spp.) growing adjacent to the NYSDEC Boat Launch on Mud Bay, June 27, 2012. Photo by Mike McHale.

Several other common invasive species were observed to occur throughout Mud Bay, including Eurasian Watermilfoil (*Myriophyllum spicatum*) and Curly-Leaf Pondweed (*Potamogeton crispus*). Scattered patches of Eurasian Frogbit (*Hydrocharis morsus-ranae*) were observed growing in the quiet, weedy areas near point 254 and rake-toss point 261. Zebra/Quagga Mussels (*Dreissena* spp.) were observed growing upon submerged vegetation at rake-toss points 252 and 259 (see Figures 9 and 10 for point locations). Small clumps of Swallow-wort (*Cynananchum* spp.) were observed growing at the perimeter of the NYSDEC

1 For a list of targeted species, see the SLELO-PRISM 2012–2016 Strategic Plan, pp. 36 – 37.

boat launch lower parking lot and near the boat launch itself (see Figure 4). For complete observation data, see Tables 2, 3 and 4.

Actions Taken - Swallow-wort Rapid Response

Following initial detection of Swallow-wort at the NYSDEC Boat Launch on Mud Bay on June 27, a follow-up survey and rapid response actions took place on July 2, 2012. A walking survey of accessible areas at the boat launch property revealed additional occurrences of Swallow-wort in scattered locations throughout the property. Most of these occurrences were individual plants or small clusters, however one large patch covering an area approximately 40' x 50' was discovered. See Figure 8 and Table 1 on the following page for full Swallow-wort survey results and a map of occurrences.

Physical removal (hand digging/pulling) of all but the largest Swallow-wort patch was undertaken by Greg Chapman and Mike McHale on July 2. Approximately three cubic yards of plants were removed.

The remaining large patch was sprayed with a 2-3% glyphosate solution by SLELO Licensed Herbicide Applicator and Field Crew Member Mike Parks on July 9, 2012. A total of eight gallons of herbicide was applied.



Figure 5: SLELO Licensed Herbicide Applicator Mike Parks spraying the large Swallow-wort infestation at the NYSDEC Mud Bay Boat Launch on July 9, 2012. Photo by Mike McHale.



Figure 6: Photo of the largest Swallow-wort infestation at the Mud Bay NYSDEC Boat Launch on July 2, 2012. Photo by Greg Chapman.



Figure 7: Photo showing the state of Swallow-wort seed pods, July 2, 2012. Photo by Greg Chapman.

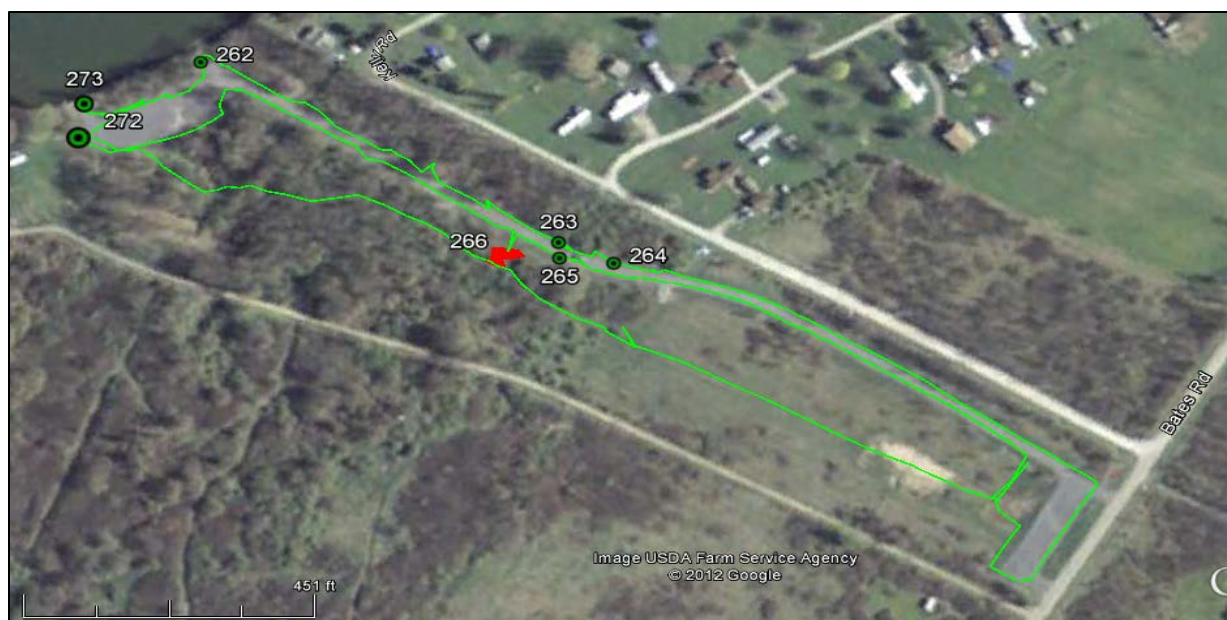


Figure 8: Map showing Swallow-wort occurrences at the Mud Bay NYSDEC Boat Launch observed on July 2, 2012. The red polygon (266) shows the area occupied by the largest observed patch, to which herbicide was applied on July 9, 2012. All other occurrences were removed by hand digging on July 2. The green line shows the route taken during the survey. For further details about individual points, see Table 1 below.

Location: Mud Bay NYS-DEC Boat Launch (Bates Rd.)			Date: 7-2-12
Point	Lat/Long	Species	Notes
262	44.0704228 -76.33010625	Swallow-wort	Single Plant Removed by SLELO Field Crew 7-2-12
263	44.06953515 -76.32797113	Swallow-wort	Single Plant Removed by SLELO Field Crew 7-2-12
264	44.06943457 -76.32764859	Swallow-wort	Two Plants Removed by SLELO Field Crew 7-2-12
265	44.06945955 -76.32796543	Swallow-wort	Moderate Sized Patch (<20 Plants) Removed by SLELO Field Crew 7-2-12
266	44.069464 -76.328328	Swallow-wort	Very Large Patch Sprayed by Mike Parks (SLELO) 7-9-12
272	44.070058 -76.330827	Swallow-wort	Large Patch Amongst Shrubs (~100 plants) Removed by SLELO Field Crew 7-2-12
273	44.0702161 -76.33078761	Swallow-wort	Moderate Sized Patch (<20 Plants) Removed by SLELO Field Crew 7-2-12

Table 1: Additional point data for Swallow-wort observations at the NYSDEC Mud Bay Boat Launch.

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Additional Maps & Data Tables

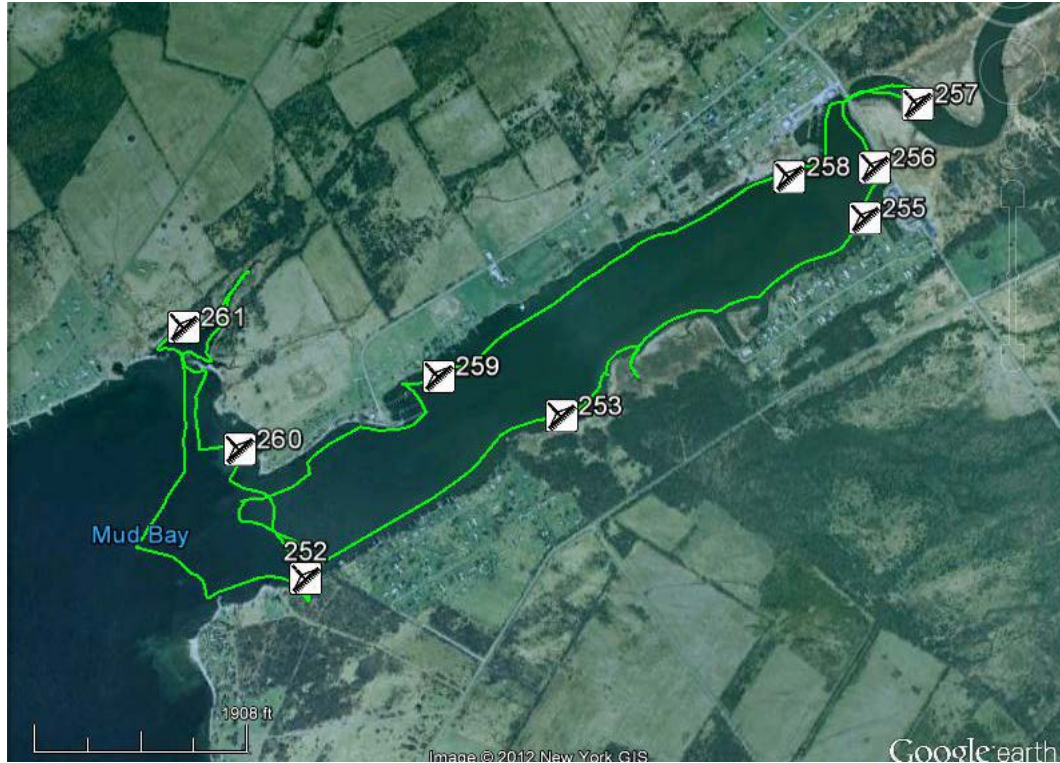


Figure 9: Rake-toss locations on Mud Bay, June 27, 2012 and August 2, 2012. The green line shows the route taken during the Water Chestnut survey; a similar route was taken for Hydrilla. See Tables 2 and 4 for corresponding data.

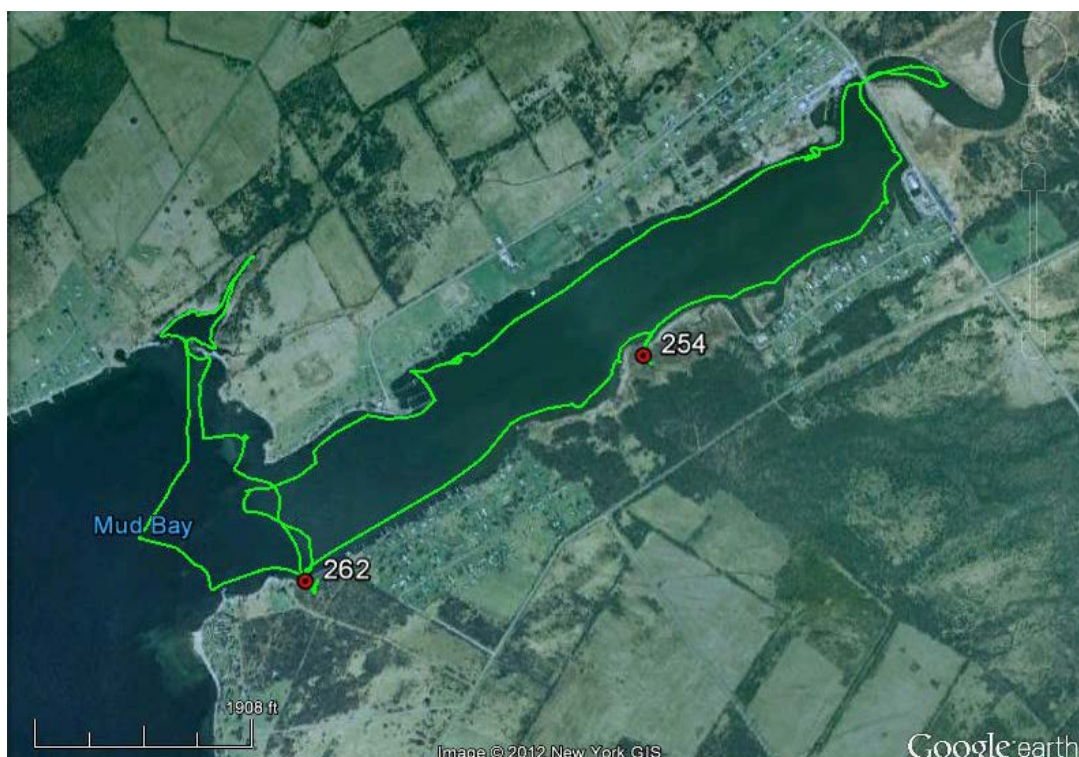


Figure 10: Visual observation locations on Mud Bay, June 27, 2012. See Table 3 for corresponding data.

Data Tables

Key for Data Tables:

EWM: Eurasian Milfoil; **CLPW:** Curly-Leaf Pondweed; **ZM:** Zebra Mussels, **EFB:** Eurasian Frog-bit.

Table 2: Water Chestnut survey rake toss data, collected June 27, 2012. See Figure 9 for locations.

Location: Mud Bay							Date: 6/27/12
Point	Lat/Long	Throw	Depth	# Spp.	# Inv.	Invasive Spp.	Notes
252	44.07047049	1	4'	5	2	EWM, ZM	
	-76.33059978	2	8'	3	1	EWM	
253	44.074427	1	3'	3	1	EWM	
	-76.32194026	2	3'	3	0		
255	44.07924081	1	3'	2	0		
	-76.31164477	2	3'	3	1	EWM	
256	44.08047278	1	3'	3	1	EWM	
	-76.31132039	2	3'	2	0		
257	44.08201765	1	2'	4	1	EWM	Visual: CLPW
	-76.30987049	2	2'	3	1	EWM	

258	44.08024488	1	3'	3	0		
	-76.31421299	2	3'	2	0		
259	44.07539033	1	3'	3	0		
	-76.32610163	2	4'	5	2	EWM, ZM	
260	44.07361153	1	2'	2	0		
	-76.33285216	2	2'	2	0		
261	44.07658526	1	2'	2	1	EWM	Visual: EFB in small patches at cattail perimeter
	-76.33473876	2	2'	4	1	CLPW	

Table 3: Visual observations for Mud Bay.

Location: Mud Bay				Date: 6/27/12
Point	Lat/Long	Species	Notes	
262	44.070239	Swallow-wort	Small clumps at parking lot edge and near boat launch	
	-76.330783			
254	44.07561203	CLPW EFB	Scattered clusters amongst thick submerged vegetation	
	-76.31956751			

Table 4: Hydrilla survey rake toss data, collected August 2, 2012. See Figure 9 for locations.

Location: Mud Bay							Date: 8/2/12
Point	Lat/Long	Throw	Depth	# Spp.	# Inv.	Invasive Spp. present	Notes
252	44.07047049	1	5'	4	2	EWM, ZM	
	-76.33059978	2	6'	3	1	EWM	
253	44.074427	1	2'	2	0		
	-76.32194026	2	2'	2	1	EWM	
255	44.07924081	1	3'	3	1	EWM	
	-76.31164477	2	3'	4	1	EWM	
256	44.08047278	1	2'	4	0		
	-76.31132039	2	3'	4	0		
257	44.08201765	1	1.5'	4	1	EWM	
	-76.30987049	2	1.5'	3	0		

258	44.08024488	1	2.5'	2	0		
	-76.31421299	2	2.5'	5	1	EWM	
259	44.07539033	1	3'	3	1	EWM	
	-76.32610163	2	3'	3	1	EWM	
260	44.07361153	1	3'	0	0		
	-76.33285216	2	3'	1	0		
261	44.07658526	1	1'	4	1	EWM	
	-76.33473876	2	1.5'	3	1	EWM	