St. Lawrence Eastern Lake Ontario Partnership for Regional Invasive Species Management

Special Note

The partners of the SLELO PRISM have identified 24 Priority Conservation Areas on which we conduct early detection surveillance on a two year rotation. This report is to be considered as an addendum to the field reports from 2013-2016. The previous reports are attached to the end of this report.

2017 Field Survey
Addendum to
Salmon River Estuary
Hydrilla, Water Chestnut, Fanwort, and Slender False Brome Assessment

Figure 1: Panoramic view of the Salmon River Estuary. Photo taken by Alicia Wood.

SLELO-PRISM Early Detection Surveillance
June 20-21, 2017

Report prepared by Alicia Wood and Bryna Daykin, 6/22/2017

Survey Methods and Observations

The Salmon River Estuary was surveyed in June of 2017 by the SLELO Early Detection team **(Figure 1)**. The survey involved examining highly probable areas (HPAs) for invasive aquatic species. To determine species present at HPAs, the rake toss method was used **(Figure 2)**. For this, a double-sided rake was tossed off both ends of the canoe to collect aquatic vegetation. The vegetation attached to the rake was identified and determined to be invasive or native.

Figure 2: Rake Toss performed by Alicia Wood. Photo taken by Zach Bengtsson.

Visual observations were also used when surveying to find and identify invasive species at the HPAs. The location of each HPA was marked using a handheld Garmin GPSmap 60CSx.

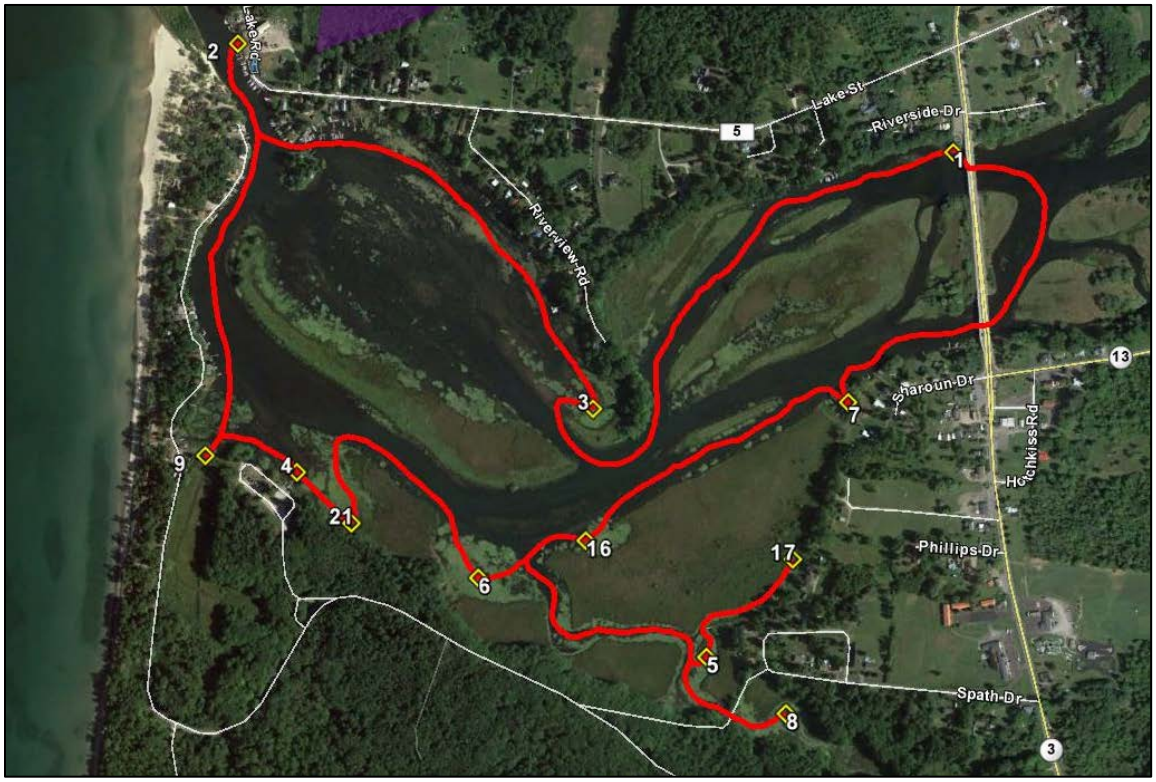

Figure 3: Survey route of the HPAs in the Salmon River Estuary.

HPAs 1-6 were resurveyed from the 2013-2016 field reports **(Table 1; Figure 3)**. HPA 9 (*previously noted as HPA 2 in the 2016 report*), 16, 17 and 21 were resurveyed from 2016. Other sights surveyed in previous reports were examined and deemed not to be HPAs in 2017. Two new HPAs (7 and 8) were added based on their stagnant water, which creates suitable invasive species habitat. Note that higher waters were observed in 2017 compared to previous years. This change in water depth may have affected our visual observations.

No 'Prevention "Watch-list" Species' were found in the 2017 survey.

The following 'Target Management Species' were found during the field survey (**Table 1**): Eurasian water milfoil (*Myriophyllum spicatum*), purple loosestrife (*Lythrum salicaria*), water chestnut (*Trapa natans*), Japanese knotweed (*Fallopia japonica*), and phragmites (*Phragmites australis*). In addition to these, the following 'General Species of Concern' were found (**Table 1)**: curly leaf pondweed (*Potamogeton crispus*), European frogbit (*Hydrocharis morsus-ranae*), and yellow iris (*Iris pseudacorus*).

Figure 4: Curly Leaf Pond Weed. Photos taken by Bryna Daykin (left) and Alicia Wood (right).

Curly leaf pond weed was found in HPAs 4-6, 8-9, 16-17 and 21 **(Figure 4)**. An unrooted fragment of this plant was additionally observed floating in HPA 2. Establishment seems unlikely as this HPA is located in close proximity to the mouth of the tributary leading into Lake Ontario. The area experiences rough water conditions that are less conducive to settlement. Eurasian water milfoil was found in HPAs 4-9, 16-17 and 21. European frogbit was found in HPAs 5-9, 16-17 and 21. Additionally, water chestnut was found in HPAs 6, 8 and 21.

Figure 5: European frogbit (left), Eurasian Water Milfoil (middle) and Water Chestnut (right). Photos taken by Bryna Daykin and Alicia Wood.

Terrestrial plants found include Japanese knotweed, which was observed on private property at 43.5724°N, 76.1990°W, as well as at HPA 1 **(Figure 6)**. Purple loosestrife was found along the edges of the river banks in HPAs 1, 3, 7, 8 and 16, as well as in areas in between HPAs. This species was also found in a very dense patch near the northern end of the bridge on route 3 (43.56967°N, 76.18709°W), across from HPA 1 **(Figure 7; Figure 9)**. Yellow iris was found in clumps throughout the estuary **(Figure 6)**. Phragmites, which was previously not found in the estuary during past surveys, was found in 2017 near the south end of the route 3 bridge (43.56732°N, 76.18707°W). This patch was very dense **(Figure 8; Figure 9)** and should be chemically treated.

Figure 6: Japanese Knotweed (left) and Yellow Iris (right). Photos taken by Alicia Wood.

Figure 7: Purple Loosestrife near route 3 bridge. Photo taken by Alicia Wood.

Figure 8: Phragmites found along the river bank. Photo taken by Alicia Wood.

Figure 9: Large Patches found of Purple Loosestrife and Phragmites near route 3.

Table 1: Descriptions, coordinates, and invasive species sightings at aquatic HPAs at the Salmon River Estuary. New HPAs aquatically surveyed for the first time in 2017 are highlighted in yellow. HPA 9 was previously labeled "HPA 2" in the 2016 field survey report, and was renamed to HPA 9 in this field report as HPA 2 already existed from the original (2013) survey.

HPA	Habitat Description	Latitude	Longitude	Throw	Depth (ft)	# Total Spp.	# Inv.	Inv. Type	Visuals
1	Port Ontario Handicap Accessible Fishing Dock	43.57036	-76.18720	1	6	0	0		PL, JKW
				2		0	0		
2	Private Marina with Multiple Private Docks	43.57458	-76.20250	1	9	0	0		CLP **fr.**
				2		0	0		
3	Area with Stagnant Water	43.56748	-76.19630	1	4.5	4	0		PL
				2		1	0		
4	Pine Grove Boat Launch	43.56747	-76.20296	1	6	7	2	CLP, EMW	CLP, EWM
				2		6	1	CLP	

5	Upstream of Pine Grove Boat Launch	43.56327	-76.19498	1	4.5	7	2	CLP, FB	EWM, FB
				2		5	1	FB	
6	Cove with Slow Moving Water	43.56523	-76.19950	1	4.5	5	1	FB	FB, EWM, WC, CLP
				2		7	2	FB, EWM	
7	Cove with Stagnant Water	43.56673	-76.19075	1	4.5	4	0		EWM, FB, PL
				2		4	1	EWM	
8	Cove with Stagnant Water	43.56216	-76.19355	1	3	7	3	FB, CLP, EWM	FB, PL, WC, CLP
				2		7	3	FB, CLP, EWM	
9	Cove Near Residentials	43.56803	-76.20486	1	5.5	7	0		FB
				2		7	2	CLP, EWM	
16	Still Area of Water Near Grasses	43.56545	-76.19704	1	5	3	0		FB, PL, EWM **fr.**, CLP **fr.**
				2		2	0		
17	End of Stream with Stagnant Water	43.56448	-76.19475	1	4.5	7	2	FB, CLP	FB
				2		6	2	EWM, FB	
21	Cove Near Boat Launch	43.56649	-76.20196	1	3.5	6	3	CLP, FB, EWM	WC, FB
				2		3	0		

Key: PL = Purple Loosestrife, FB = European Frogbit, WC = Water Chestnut, EWM = Eurasian Water Milfoil, CLP = Curly Leaf Pondweed, JKW = Japanese Knotweed, **fr.** = fragment/s

In addition to the survey of the Salmon River Estuary, the early detection team searched along an upstream portion of the Salmon River (**Figure 10)** for slender false brome (*Brachypodium sylvaticum*). Slender false brome is a 'Prevention "Watch-list" Species', and is thus currently not found within the SLELO-PRISM. **Upon examination of the area, no slender false brome was found.** 'Target management species' found in the area included Japanese knotweed and purple loosestrife. Honeysuckle (*Lonicera spp.*), a 'General Species of Concern', was additionally found along the survey route.

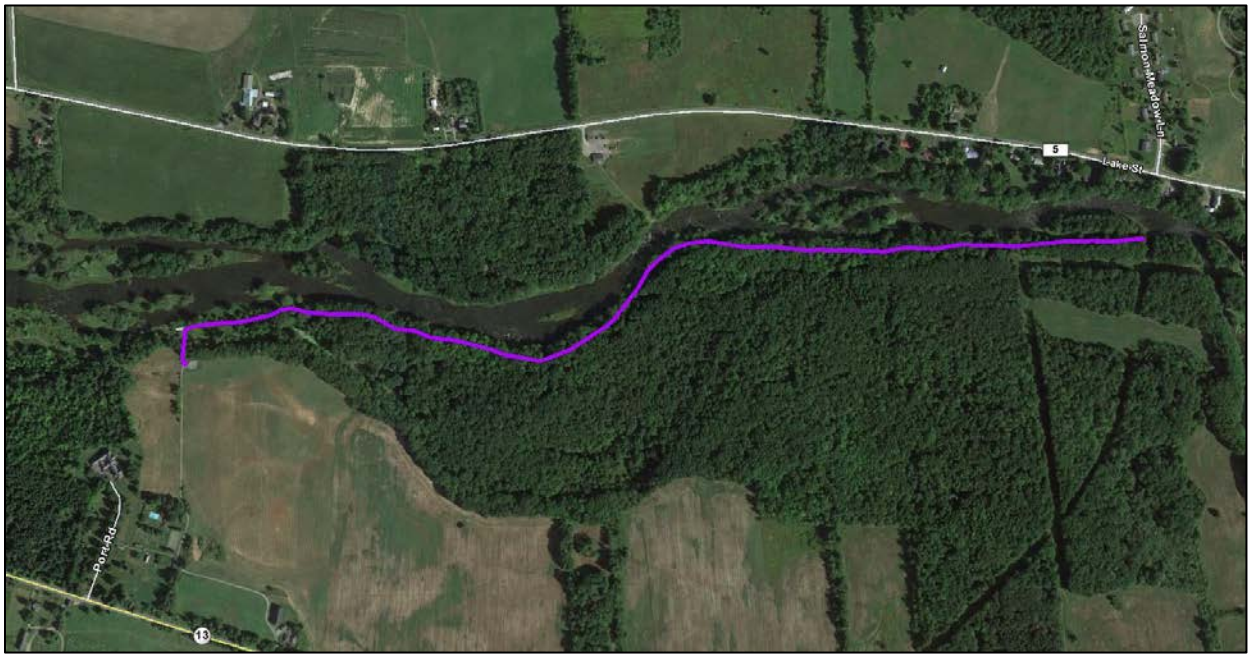

Figure 10: Survey route taken upstream Salmon River to examine the terrain for slender false brome.