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

Eastern Lake Ontario Dunes D-3 Assessment

SLELO-PRISM Buckthorn and Swallow-wort Surveillance/Dune Willow Monitoring

July 13 & 17 - 20, 2012

Figure 1: Westward panoramic view of sand dunes at Lakeview WMA, July 20, 2012. Photo by Mike McHale.

Report drafted by Greg Chapman and Mike McHale, 8/2/12.

Introduction and Background

The Eastern Lake Ontario Dunes are located along a 17 mile stretch of Lake Ontario's eastern shoreline, north of the Salmon River outlet and south of the Stony Creek outlet. In addition to being a unique ecological resource within New York State, the dunes serve an important role as a natural barrier beach, protecting inland wetlands and uplands from storm surges and strong winds coming off the lake. Birds utilize the dunes and the protected wetlands as an important stopover during their annual migrations, and the natural sandy beaches attract tourism and recreational use by humans as well.

Although a large portion of the shoreline is developed with camps and cottages, a significant portion of the dunes are held as public land. Two state parks (Sandy Island Beach SP and Southwick Beach SP) and three wildlife management areas (Deer Creek Marsh WMA, Lakeview WMA and Black Pond WMA) are located along this stretch of shoreline, as is the Sandy Pond Beach Natural Area, currently managed by the New York State office of Parks, Recreation and Historic Preservation (NYSOPRHP). In addition, The Nature Conservancy owns and maintains the El

Figure 2: Overview map of New York's Eastern Lake Ontario shoreline and Wildlife Management Areas.

Figure 3: Glossy Buckthorn (*Rhamnus frangula*) at Deer Creek Marsh WMA, July 13, 2012. Photo by Greg Chapman.

Figure 4: Dune Willow (*Salix cordata*) at Sandy Pond Beach Natural Area, July 17, 2012. Photo by Greg Chapman.

Dorado Nature Preserve in the northern portion of the dune system.

Survey Methods and Objectives

SLELO surveillance within the dunes focused on three main objectives:

Glossy Buckthorn Assessment: An opportunistic survey of the extent of Glossy Buckthorn (*Rhamnus frangula*) growth was undertaken for portions of the backdune areas of Deer Creek Marsh WMA, Sandy Island Beach Natural Area, Lakeview WMA, Black Pond WMA and the El Dorado Nature Preserve. Surveys were conducted via canoe and observed all shoreline visible from accessible ponds and channels adjacent to the backdune shoreline. Additional data for Deer Creek was collected regarding Glossy Buckthorn observed growing along the Backdune Trail at that location.

Swallow-wort Surveillance: A survey for Swallow-wort (*Cynanchum* spp.) occurrences was undertaken concurrent with the Glossy Buckthorn Assessment.

Dune Willow Insect Feeding Investigation: Two populations of Dune Willow (*Salix cordata*) were examined closely *for the presence of Altica subplicata or Plagiodera versicolora*, both metallic leaf beetles suspected of feeding on this locally stable but globally rare shrub. Plants were visually inspected, tallies were kept of the total number of plants examined and the number of plants with *Altica* beetles present. Samples of beetles were to be taken for later positive identification. Observations of other insects observed feeding or occupying Dune Willow were also recorded. Dune Willow populations at Sandy Pond Beach Natural Area and the Black Pond WMA/El Dorado Nature Preserve were inspected.

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 and to track the routes taken during the various surveys.

Figure 5: Photo of several *Disonycha* beetles observed upon Dune Willow growing at Sandy pond Beach Natural Area, July 17, 2012. Photo by Greg Chapman.

Observations and Follow-Up Actions

Glossy Buckthorn Assessment: For the 7.51 miles of backdune shoreline that was visually surveyed, a total of 157 occurrences of Glossy Buckthorn were recorded. For most areas surveyed, the shrub occurred mixed with native vegetation at low densities; the highest densities occurred along a small inlet at the south end of Lakeview Pond in Lakeview WMA. Glossy Buckthorn was not observed to be growing in the area surveyed at Black Pond WMA/El Dorado Nature Preserve.

Due to the overall low density of Glossy Buckthorn, the likelihood of re-introduction by bird-dispersed seeds and the cost/difficulty of control within the dune area, no treatment of this population is currently being considered[1].

Swallow-wort Surveillance: A single large patch of Swallow-wort was observed growing at Lakeview WMA, north of a boardwalk leading from the Lake Ontario Shore to Lakeview Pond (site # 86). When inspected more closely on July 30, it was observed that the seedpods were uniformly near maturity, and some has begun to split open to release seeds. A return site visit is scheduled for August 6, 2012 to determine if a **Rapid Response** is warranted and to set this site up as a future managed site.

Dune Willow Insect Feeding: A total of 270 Dune Willow shrubs were inspected (58 at Sandy Pond Beach Natural Area and 212 at Black Pond WMA/El Dorado Nature Preserve). No metallic beetles were observed on any plants inspected. However, a striped flea beetle was frequently observed upon the plant (see Figure 5 and Figures 8 & 9 on the following page), often with multiple individuals observed on a single plant. This beetle has been tentatively identified as *Disonycha alternata*, a native flea beetle known to feed upon various species of Willow trees and shrubs.

Other insect species observed to be feeding on multiple Dune Willow shrubs included *Limenitis archippus* (Viceroy Butterfly) larvae (present on three shrubs) and groups of *Automeris io* (Io Moth) larvae (groups of 5+ individuals observed on two separate

Figure 6: Underwater photo of Brittle Naiad (*Najas minor)* growing near Floodwood Pond in Lakeview WMA. Photo by Mike McHale.

[1] As determined at SLELO Partner Meeting July 2012.

shrubs). Fall Webworm (*Hyphantria cunea*) colonies were also observed on several shrubs. See Figures 10-12 on the following page for photographs. A follow-up trip is planned for later this summer to again attempt to observe the presence of *Altica* or *Plagiodera* beetles, and to collect additional data quantifying the presence of *Disonycha* beetles on Dune Willow.

Additional General Observations and Actions: Brittle Naiad (*Najas minor*), a submerged plant considered to be invasive in some areas of the northeast US (though not currently included on the SLELO Targeted Species List), was observed growing in several locations of Lakeview WMA (near the outlet of Floodwood Pond and in a portion of the channel south of Lakeview Pond). Members of the Great lakes Restoration Initiative (GLRI) Field Crew, also doing work in Lakeview WMA at the time of the survey, also recorded several observations of this plant.

A small population of Water Chestnut (*Trapa natans*) was observed growing in Lakeview WMA near the outlet of Floodwood Pond (Site # 162), an area where it has previously been noted as occurring. One-half a cubic yard of Water Chestnut was removed from this location on 7/20/12. This site was referred to the GLRI crew for additional control work.

Additional Dune Willow Insect Feeding Photos

Figures 7-9: Left: Example of particularly heavy feeding damage upon Dune Willow at El Dorado Nature Preserve, July 13, 2012. The severity of insect damage shown in the picture is greater than was typically encountered. Right: Magnified views (above and below) of beetle (possibly *Disonycha alternata*) frequently observed upon Dune Willows at both Sandy Pond Beach Natural Area and El Dorado Nature Preserve. Photos by Greg Chapman.



Figures 10-12: A selection of Lepidopteran larvae that were observed to be feeding upon or inhabiting Dune Willow. Left, caterpillar of *Limenitis archippus* (Viceroy Butterfly), of which three were observed total. Center, a group of Fall Webworm (*Hyphantria cunea*) caterpillars; two separate Fall Webworm colonies were observed upon Dune Willow. Right, Io Moth (*Automeris io*) larva; two groups of five to ten caterpillars were observed upon Dune Willow. Photos by Greg Chapman.

Maps and Data Tables

Key for all maps: Green line shows route(s) taken during the survey; purple circles indicate Buckthorn observations. Yellow triangles indicate observations that can be referenced on the table below.

Table 1: Miscellaneous observations recorded during D-3 surveys. Refer to subsequent maps for locations.

Location: Eastern Lake Ontario Dunes			**Dates: 7/13 – 7/20/2012**
Point	**Lat/Long**	**Species**	**Notes**
71	43.65337794 -76.19381919	Phragmites	75ft of shore line
80	43.66845245 -76.1957197	Phragmites	50ft by 10ft
81	43.67116249 -76.19755592	Phragmites	75ft by 10ft
82	43.67318957 -76.1968179	Phragmites	75ft by 20ft
86	43.75013838 -76.21040337	Swallow-wort	30ft by 15ft dense patch 10ft in from shore, north of boardwalk. Also mixed into surrounding vegetation.
162	43.72312216 -76.20104908	Water Chestnut	Several plants along and among cattail

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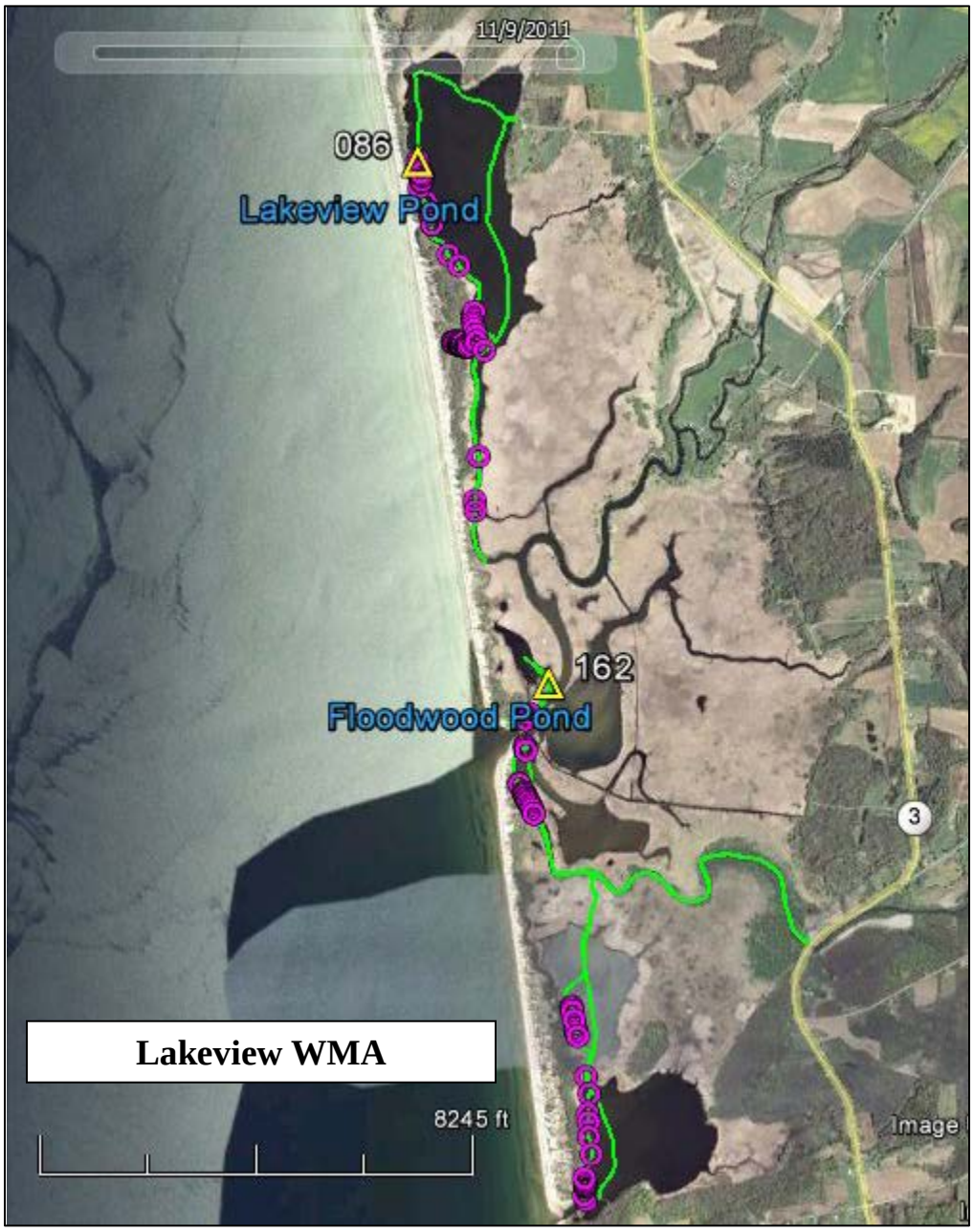

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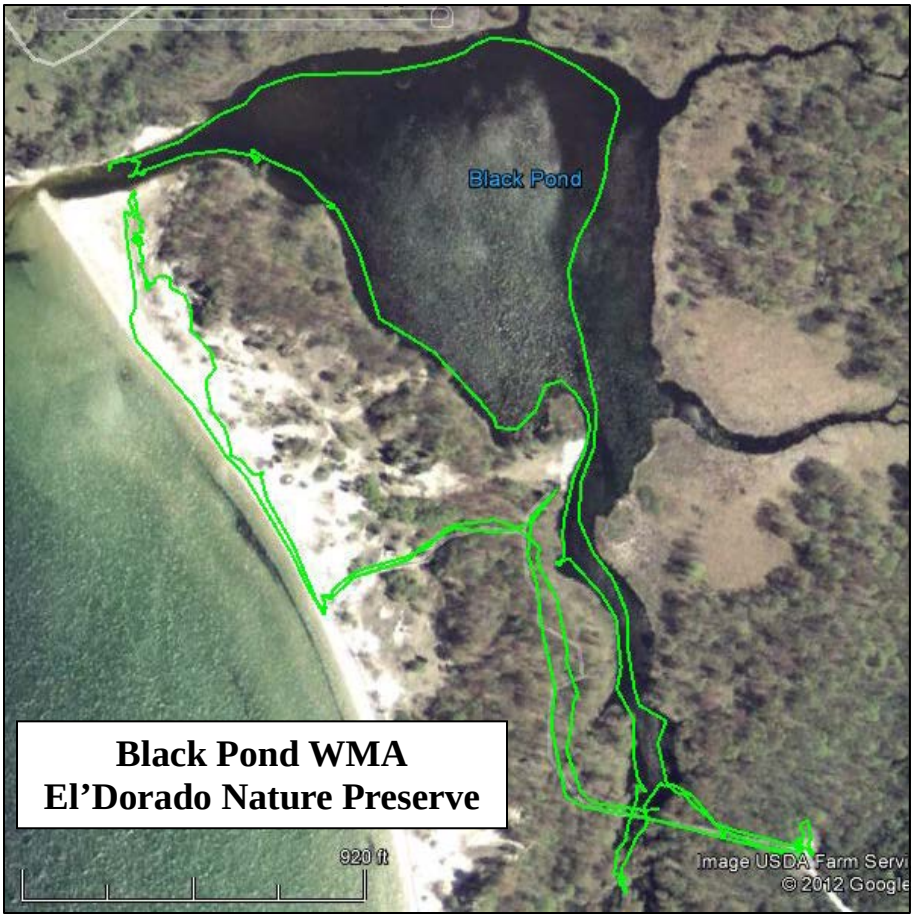

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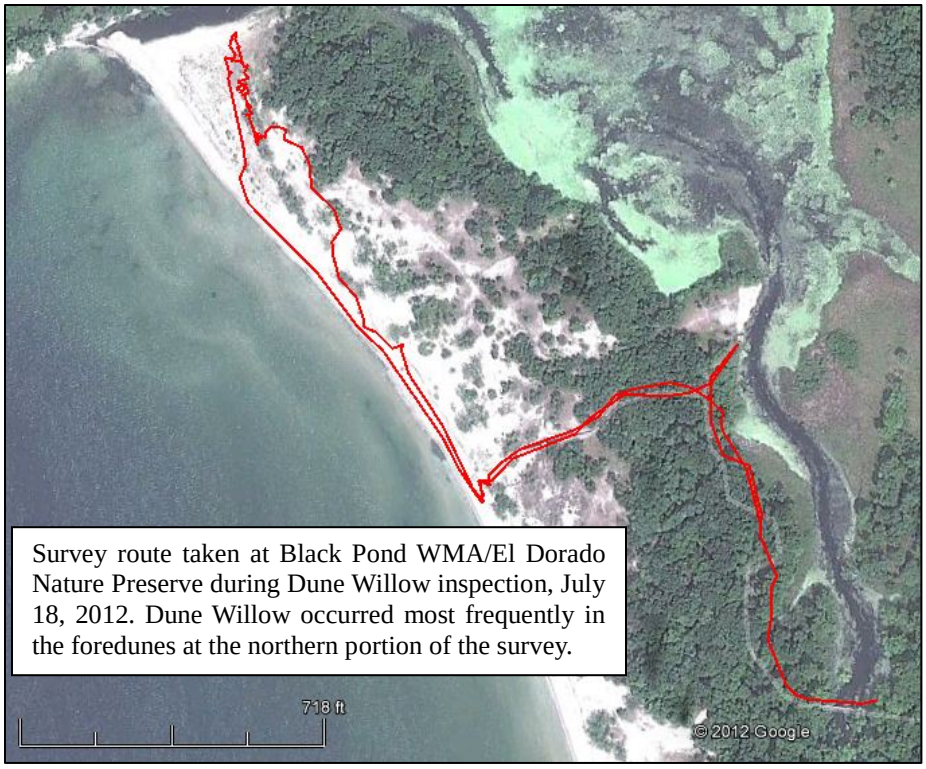

Survey route taken at Black Pond WMA/El Dorado Nature Preserve during Dune Willow inspection, July 18, 2012. Dune Willow occurred most frequently in the foredunes at the northern portion of the survey.

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