Silver Lake Glossy Buckthorn Field Report

September-October 2012

Submitted by George Spak and Sandra Bonanno

Introduction/Background – Silver Lake is a spring fed glacial pothole in western Oswego County. It lies in a low elevation basin and its waters are alkaline, which results in medium fen vegetation ringing much of the lake. The fen is a significant natural community which supports a number of rare species, including bog buckmoth, which is listed by NYS as Endangered. The buckmoth and other rare species require open fen vegetation for success, but this vegetation structure is threatened by an infestation of glossy buckthorn (*Frangula alnus)*.

First discovered in 1997, the buckthorn infestation was known to be severe on the west side of the lake, where the fen was narrow, shrubby, and not known to support many rare species, but there was concern that the infestation would spread to the more expansive fens on the south side of the lake, which do support rare species populations. In 2004-05, a glossy buckthorn removal project focused on the west side of the lake, where a cut stem method was used in the month of October. That project succeeded in drastically reducing glossy buckthorn density, even to the present time, seven years later.

SLELO-PRISM accepted a proposal from SLELO participant Sandra Bonanno (of Oswego County Environmental Management Council) for a 2012 Special Project to revisit the site, including a search and treatment of the expansive fens on the south side of Silver Lake.

Contract Requirements

SLELO-PRISM contracted with certified Pesticide Applicator George Spak (license #C7, Pe668190sticide Business #79654) to undertake a cut stem treatment of glossy buckthorn on the fens around Silver Lake in the fall of 2012. The agreed upon work plan included:

- Obtain all necessary permits for this work on the site;
- Conduct an inventory of glossy buckthorn occurring at this site and record on *iMap Invasives*;
- Address need for follow-up monitoring the next growing season, noting that a visit in the fall subsequent to treatment will not provide any meaningful information or evaluation about the success of the treatment and recommended follow-up treatments.

Project Implementation

Cut stem treatment of glossy buckthorn may be conducted year round, according to the pesticide label. However, in fen habitat, it is logistically impossible to do the work in the winter, and activity of rare species makes in unwise during the growing season. Since bog buckmoths fly and breed in September, is was been decided that the wisest time for implementation of such a project is the month of October, although work could be done in the less valuable habitat on the west side of the lake in September.

The Central New York Land Trust owns the high quality fen habitat on the south side of the lake and much of the shoreline fen on the west side of the lake. The Land Trust was supportive of a project to removed glossy buckthorn, and gave permission for the project. Additionally, an adjacent landowner of the east side of the lake, south of the land trust property, gave permission for work along his shore.

Sandra Bonanno documented the long-known infestation of glossy buckthorn at Silver Lake on *iMap Invasives* on June 27, 2012. The observation ID is NY-3166587. An assessment was also entered and given an additional ID of NY-1484U-P. The centrum location was recorded as latitude 43.377445, longitude -76.553166.

Upon receipt of a fully executed contract from the Nature Conservancy, George Spak applied for a wetland pesticide application permit August 14, 2012). Permit #7-AV12-25 was received (September 10, 2012).

A preliminary visit was made to the site by George Spak and Sandra Bonanno on May 04, 2012 to assess the scope of the project and develop the budget. A second reconnaissance trip was made by Sandra Bonanno on September 28, 2012 to further assess the fens on the west side of the lake and establish four photo monitoring points. A set of pretreatment photos were made. Initially, it was assumed, based on Sandra Bonanno's annual visits to the fens on the south side of the lake that the infestation there was minimal and that detailed searches there would be made and treatment applied at the time of actual treatment.

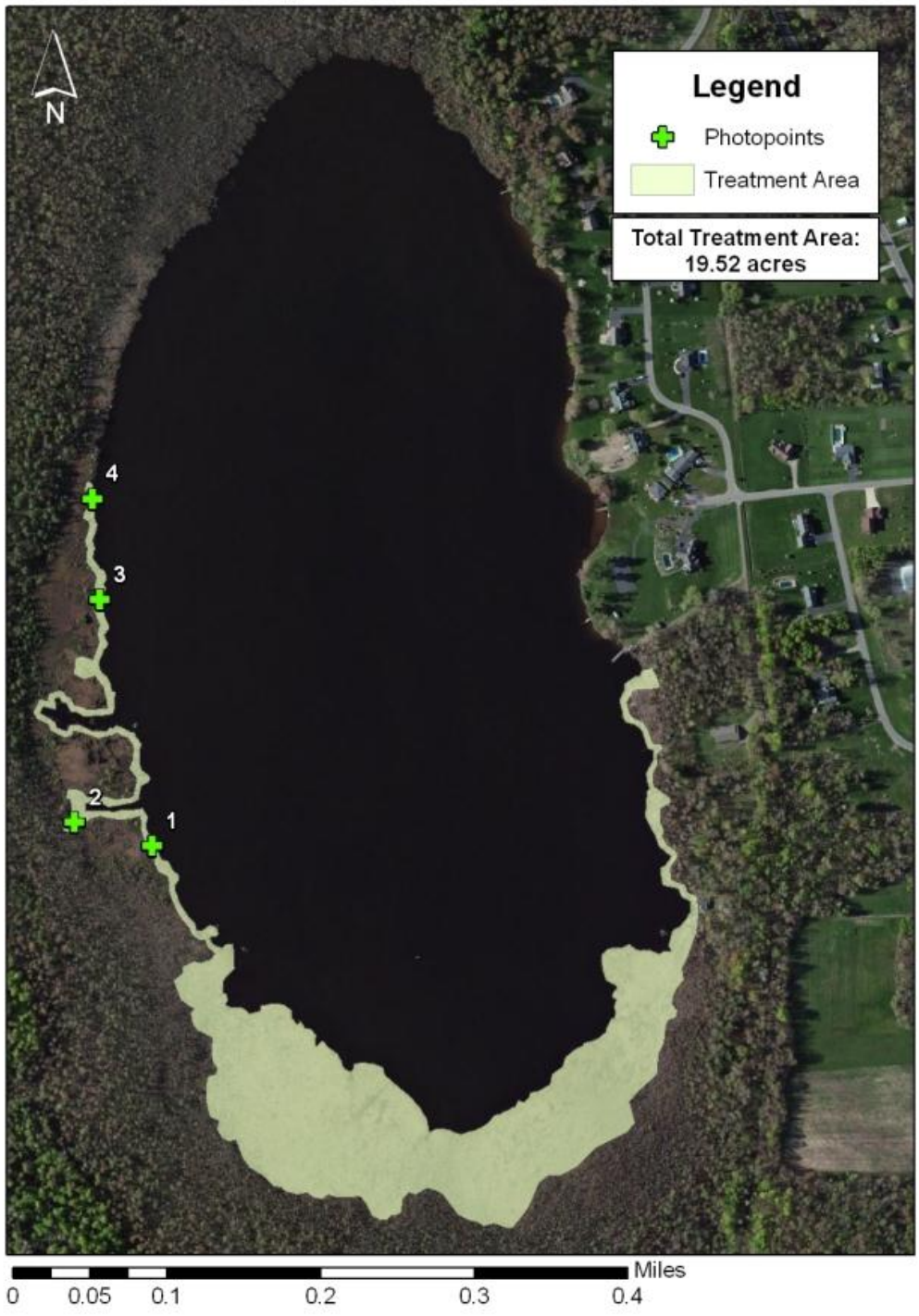
Treatment was implemented with a 75% solution of Rodeo with water, with a blue dye to help with visibility. Stems were cut with clippers or saw as close to the substrate as possible, to prevent resprout, and immediately treated with a few drops of herbicide, enough to cover the cut surface. Work was completed between October 01 and October 26, 2012.

Habitat was walked in transects by workers, and treatment applied as stems were found. On the two fen openings on the south side of the lake, the infestation was indeed light, but enough stems were found that five work days were spent there. The approach was one of "**near eradication**." In other words, all stems found were removed. Even seedlings were pulled. Every effort was made to elevate cut and pulled stems to deny them the opportunity to resprout, a phenomenon that has been seen at another site. It became clear that this was a very timely ***Early Detection/Rapid Response*** **project**, especially for the south side of the lake.

The same approach was used on the lakeshore on the east and west side of the lake. A dense infestation remains on the south side of the lake, on property that was not treated in 2004-05, and that remained outside the scope of this project. So seed pressure remains at the site, but re-assessment of the 2004-05 results suggests that glossy buckthorn infestation at Silver Lake fens may well have been set back 10 or more years by this effort.

The attached map shows Silver Lake with the area treated outlined. A total of 19.52 acres were treated. Thanks go to Greg Chapman of The Nature Conservancy, who prepared the map using Arc GIS. The map is based on data gathered by Sandra Bonanno with a Garmin GPSmap 76CSx unit, which has an accuracy of +/- about 20 feet.

Silver Lake Glossy Buckthorn Treatments - October 2012



Assessment

Four photo monitoring points were established on the west side of the lake on September 28, 2012 (based on the assumption that most of the work would be done there). The locations and pretreatment data appear in Table 1, below. Photos were taken on September 28, and again immediately after treatment, on October 24 and 26, 2012. All visible stems were treated, so no data appear for effect – the only effect that can be observed at this time is that treatment occurred – a set of treatment photos document that. The paired photos also appear below. The photo monitoring points will be revisited during the summer or early fall of 2013 to assess results of this work. A report addendum will be submitted at that time.

Table 1. Photo Monitoring Data

Photo Point #	Latitude	Longitude	Location	Pretreatment data		
				#GB stems =/>1m	#GB stems <1m	% Cover All Woody Spp
GB 01	43.37594247	-76.55246917	Shoreline hummock W shore	1	5	50
GB 02	43.37615445	-76.55347877	Edge of woods, W side	4	7	75
GB 03	43.37825538	-76.55321131	Shoreline hummock W shore	3	3	60
GB 04	43.37920211	-76.55332513	Shoreline hummock W shore	5	20	80
Set four PVC monitoring stakes along the W side of the lake: three in shoreline hummocks, one at the woodland edge. Flagged with orange tape and labeled 1-4. Took data in a circular plot with 1 m radius. Data: total woody % cover, # GB > 1 m tall, # GB < 1 m tall. Documented each with a photo and GPS point.						

SILVER LAKE Glossy Buckthorn Removal – Photos taken 2012 by Sandra Bonanno

#1 09/28/12 Pretreatment Shoreline Hummock, W shore, near S end. Glossy Buckthorn (GB) Stems >1m = 1.

#1 10/24/12 Post-treatment Same view immediately after treatment. All stems treated.

#2 09/28/12 Pretreatment Edge of woods. W side of lake, W of #2. GB stems > 1m = 4

#2 10/26/12 Post-treatment Same view immediately after treatment. All stems treated.

#3 09/28/12 Pretreatment Shoreline hummock W shore, N of #1. GB stems >1m = 3.

#3 10/26/12 Post-treatment Same view immediately after treatment. All stems treated. Note cut stem (arrow).

#4 09/28/12 Pretreatment Shoreline hummock, W shore, N of #3. GB stems >1m = 5.

#4 10/26/12 Post-treatment Same view immediately after treatment. All stems treated. Note several cut stems (arrow).