

State-Listed Species Habitat Assessment and Survey
Plymouth Gentian (*Sabatia kennedyana* Fern.)
Long Pond, Centerville Massachusetts

Submitted By: The Town of Barnstable
October 3, 2016



NHESP Tracking Number: 09-27581

SURVEY METHODOLOGY

Surveys for *Sabatia kennedyana* occurred July 14, 2016 (9:00am to noon) and September 16, 2016 (10:00am to 3:00pm) on Long Pond, Centerville, Massachusetts.

Survey personnel:

Nina Coleman
Sandy Neck Park Manager

Donald Schall
Consulting Botanist

Darcy Karle
Barnstable Conservation Administrator

Ron Sirch
Homeowner and Boat Operator
93 Long Pond Circle
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In total, 16 hours were dedicated to the field survey.

The survey was accomplished by walking transects in the suitable habitat along the coastal plain pondshore and by scanning non-suitable areas with binoculars from the pontoon boat (10-20 feet off shore). Open sandy areas where potentially suitable habitat was present were surveyed on foot by hiking in the shallow water to observe both the shallow water habitat within the pond and the exposed sandy to cobble shoreline along the edge of the pond.

When surveying suitable habitat, the botanists searched the pondshore within the areas from the bank to 15 feet within the water (12-14 inches of water depth).

The second survey (9/16/16) was performed during a low water period due to drought conditions. Two residents of the pond stated that the water level was "uncommonly low." In addition, the herring run was observed completely dry with the pond water level considerably below the mouth of the run.

EXISTING CONDITIONS

Long Pond appears to be moderately developed. Some properties have landscaping to the water's edge. This activity plus recreational beach use has created open sandy areas. Open sandy areas could offer potentially suitable habitat for *Sabatia kennedyana* and associated coastal plain pondshore plants (picture 1).

The lesser developed or undeveloped sections of the pondshore were comprised of a dense border of shrub/tree cover habitat (picture 2). Common to abundant shrub species present in this community included Buttonbush (*Cephalanthus occidentalis*), highbush Blueberry (*Vaccinium corymbosum*), Winterberry (*Ilex verticillata*), Swamp Azalea (*Rhododendron viscosum*), Bayberry (*Morella caroliniana*), Multiflora Rose (*Rosa multiflora*), and Speckled Alder (*Alnus incana* spp. *rugosa*). Red Maple (*Acer rubrum*), American Holly (*Ilex opaca*), and Willows (*Salix cinerea* and *Salix nigra*) were also present as mid-level to canopy layer tree species.

Wooded areas extending to the edge of the pond offered limited suitable habitat for populations of *S. kennedyana*.

Purple Loosestrife (*Lythrum salicaria*) and Rusty Willow (*Salix cinerea* ssp. *oleifolia*) were noted frequently in all the pondshore habitats (wooded/open/highly developed). These potentially invasive non-native species should be considered a threat to the rare plant habitat.

Open sandy areas, some of which were created by landscaping activities and residential beach use, presented suitable conditions for the establishment of a coastal plain pondshore plant community comprised of (in part) Golden Hedge Hyssop (*Gratiola aurea*), Umbellate Water Pennywort (*Hydrocotyle umbellata*), Swamp Candles (*Lysimachia terrestris*), Pondshore Flatsedge (*Cyperus dentatus*), Soft Rush (*Juncus effusus*), and Pondshore-rush (*Juncus pelocarpus*).

SURVEY RESULTS

***Sabatia kennedyana* Plymouth Gentian**

Several separate populations of *Sabatia kennedyana*, Plymouth Gentian, were confirmed along the northern shoreline of the pond between Sachem Drive and Cottage Lane (formerly Raytina Lane) which is where this state-listed Species of Special Concern (SC) plant was historically documented (pictures 3, 4 and 6). A population of *S. kennedyana* was also found further east along the pondshore at the property of 1343 Falmouth Road, which may be a new sighting (figure 1). A total of 64 basal rosettes and 8 mature plants were observed by the botanists (table 1).

***Lachnanthes caroliniana* Redroot**

Redroot (*Lachnanthes caroliniana*) was abundant in a number locations along the north side of the pond (table 1). A total of 200+ individuals were observed many of which were in flower/fruit (pictures 5 and 6). Redroot is a state-listed Species of Special Concern (SC).

***Sagittaria teres* Slender or Terete Arrowhead**

The botanical surveyors found many uprooted specimens of Slender or Terete Arrowhead (*Sagittaria teres*) washed up along the pondshore in particular in the western and northern sections of the pond (picture 7). In addition to the uprooted individuals, specimens were observed still rooted and in flower in shallow water along the northern side of the pond. Slender or Terete Arrowhead is a state-listed Species of Special Concern (SC).

Watch List Species

Also, along the northern shoreline of the pond the botanical surveyors observed populations of Hyssop Hedge Nettle (*Stachys hyssopifolia*) and Rose Coreopsis or Pink Tickseed (*Coreopsis rosea*) which are both Watch List (WL) species (picture 8).

IMPACT ANALYSIS

Long Pond was treated on July 7, 2016 and August 11, 2016 with the product called "Sonar" to control the spread of *Hydrilla verticillata* (Hydrilla), a non-native invasive aquatic species. The botanist did not observe any dead or damaged specimens of *Sabatia kennedyana* or *Lachnanthes caroliniana* in the pondshore community during the survey. Uprooted specimens of *Sagittaria teres* did not appear to have herbicide damage. This suggests that the herbicide treatments used to control the spread of Hydrilla at Long Pond is not having a negative effect on State-Listed species, nor on *Sabatia kennedyana* and *Lachnanthes caroliniana* populations documented in the pondshore community in the recent surveys.

Long Pond Plant Survey
Centerville, Massachusetts
Summer 2016



Figure 1: Locations of *Sabatia kennedyana*

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Site Number	map/parcel	Address	<i>S. kennedyana</i> basal rosettes	<i>S. kennedyana</i> mature	<i>Lachnanthes</i> <i>caroliniana</i>	comments
1	209/027	63 Sachem Drive	6	0	0	
2	209/026	71 Sachem Drive	25	0	-96	Mowing is occurring near/within rare plant
3	209/025	77 Sachem Drive	3	0	0	Sparse vegetation and high recreational use
4	229/091	101 Sachem Drive	6	4	0	Sign "Sunderman Gallery"
5	229/088	40 Cottage Lane	13	4	0	Raytina Lane now called Cottage Lane
6	229/087	1379 Falmouth Road	0	0	80+	High diversity and low recreational use
7	229/086	1359 Falmouth Road	0	0	3	
8	229/085	1343 Falmouth Road	11	0	0	
9	229/075	56 Harrison Road	0	0	9	
10	229/051	85 Horatio Lane	0	0	12	Pondshore habitat to north of public beach
Totals			64	8	200	

Table 1: Results of Long Pond Plant Survey for *Sabatia kennedyana* 7/14/16 and 9/16/16

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Picture 1: Typical Long Pond open sandy pondshore habitat.



Picture 2: Typical Long Pond shrub/tree cover pondshore habitat.

Long Pond Plant Survey
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Picture 3: *Sabatia kennedyana* basal rosettes
observed 9/16/16 at Long Pond



Picture 4: *Sabatia kennedyana* flower and fruit
observed 9/16/16 at Long Pond

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Picture 5: *Lachnanthes caroliniana* at 1379 Falmouth Road (Map 229 Parcel 087).



Picture 5: *Lachnanthes caroliniana* and *Sabatia kennedyana* at 71 Sachem Drive (Map 209 Parcel 026).

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Picture 7: Uprooted and washed ashore specimens of *Sagittaria teres*.



Picture 8: *Coreopsis rosea* located along north side of Long Pond.