

Glenshire Pond Aquatic Invasive Plant Survey

Emily Frey, Citizen Science Program Coordinator – July 30, 2021

Background

Glenshire Pond is in the Glenshire neighborhood on the east side of Truckee and managed by the Glenshire Devonshire Residents Association (GDRA). This water body is open to the public year-round and is a popular recreation destination for dog walkers, runners and bird watchers and features a 0.75-mile trail circumnavigating the pond. No watercraft of any kind, swimming or fishing are permitted at Glenshire pond.

This survey was the first known aquatic species survey to be conducted at Glenshire Pond.



Project Design

On July 30, 2021, the League to Save Lake Tahoe (League) coordinated an Eyes on the Lake volunteer survey of Glenshire Pond located approximately 18 miles north of Lake Tahoe in Truckee, California. The League received permission from the GDRA to conduct this survey.

The survey team comprised of three League staff and four trained Eyes on the Lake volunteers who surveyed the entirety of Glenshire Pond's shoreline and nearshore, about 0.6 miles total (Figure 1). The survey team started at the GDRA Clubhouse and worked counterclockwise around the pond surveying as one group. Because Glenshire Pond is relatively shallow throughout, aquatic plants are found growing in all parts of the waterbody (Appendix A). To ensure full survey coverage of the pond, four surveyors were on the water in non-motorized watercrafts equipped with pool skimmer nets or aquatic weed rakes and the remaining surveyors walked along the shoreline. League staff instructed teams to collect floating plant fragments for identification.



Figure 1: Eyes on the Lake Glenshire Pond survey team.

If any aquatic invasive plants were verified, teams were to record the plant species and GPS location using a digital mapping application and estimate, either in acres or by sketching on a physical map, the extent of the infestation. Teams were given the option, but not required, to record GPS locations of native plants (e.g., Northern milfoil, Common waterweed, etc.) (Figure 2).

Training, Preparation and Materials

The survey team was equipped with a clipboard, survey data sheet, map of their zone, access instructions, safety information, Eyes on the Lake ID guide, specimen containers for sample collection, waterproof cellphone pouches and pens. Surveyors used their own smartphones with mapping



Figure 2: Survey in progress at Glenshire Pond.



Figure 3: flowering native Northern milfoil fragment

applications to acquire GPS coordinates if using paper datasheets. The survey team was also provided two tablets with the option of using a digital data collection application called QuickCapture¹, which allows the user to track multiple plant types observed while traversing a survey route.

To avoid accidental introduction of aquatic invasive species into Glenshire Pond, all on-water surveyors were required to become certified in the Tahoe Keepers program (tahoekeeper.org) as well as self-inspect and, if needed, decontaminate their watercraft, paddles, and personal flotation devices according to the Tahoe Keeper's Clean, Drain and Dry procedures. All other gear including waders and skimmer nets were out of water for at least 30 days in addition to being inspected by League staff prior to entering Glenshire Pond for any presence of aquatic or terrestrial species.

Due to the COVID-19 pandemic, additional health and safety precautions were taken, including prohibiting carpooling, requiring face masks to be worn during the entire event by unvaccinated volunteers and sanitizing all League materials before and after the survey.

Following the survey, League staff collected all materials and data sheets and recapped the survey with all volunteers to ensure there were no problems or gaps in surveying.

Survey Results

The survey team successfully completed the survey of Glenshire Pond and found no invasive aquatic plants.

Glenshire Pond is a shallow waterbody that has dense aquatic plant populations throughout its entire area. The sediment was observed to be a thick silt layer throughout the pond.

Native aquatic plant species found include, listed in order of approximate abundance, Northern milfoil (*Myriophyllum sibiricum*) (Figure 3), common waterweed (*Elodea spp.*), richardson's pondweed (*Potamogeton richardsonii*) (Figure 4), muskgrass (*chara spp.*) and a very small amount of water smartweed (*Persicaria amphibia*) near the island. The former three plants were observed in all areas of the lake regardless of depth or sediment type and both Northern milfoil and richardson's pondweed were observed to be flowering.

Low to moderate amounts of varying types of periphyton and metaphyton were observed on the lake surface. Significant amounts of freshwater Bryozoa, which are sedentary, native aquatic invertebrates, were observed attached to plant fragments, primarily Northern milfoil (Figure 5). Also observed at the pond were approximately six white pelicans and one muskrat.



Figure 4: Richardson's Pondweed



Figure 5: freshwater bryozoa attached to northern milfoil

¹ QuickCapture is a field collection data app created by ESRI. More information can be found here: <https://www.esri.com/en-us/arcgis/products/arcgis-quickcapture/overview>

At least two different species of freshwater snails were observed throughout Martis Creek Lake. Both species are similar in shape and color with one species found generally smaller than the other and the two having opposite opening directions (dextral and sinistral). The League collected samples of these snail shells and consulted with an entomologist at the California Department of Food and Agriculture who identified the snails as members of the *Physidae* family which are not invasive or considered pests in the greater Lake Tahoe region. Furthermore, the League is confident that neither of these snail species are the invasive New Zealand mud snail (*Potamopyrgus antipodarum*) nor the Channeled applesnail (*Pomacea canaliculate*). League staff reviewed the digital surveys submitted by volunteers and entered additional surveys on the Citizen Science Tahoe app with the information written on the paper datasheets.

Next Steps

League staff are confident that teams conducted a thorough survey of Glenshire Pond and that there are no aquatic invasive plants present. And, with the policies in place by GDRA barring watercraft, swimming and fishing, there is a low risk of future introduction. However, continued monitoring is advised as there is a known, but not widespread, infestation at nearby Martis Creek Lake and while it is rare, it is believed possible for migrating aquatic birds to transport and introduce viable plant material to new waterbodies² and both Glenshire Pond and Martis Creek Lake offer acceptable habitat for migrating waterfowl.

The League recommends that GDRA staff attend an Eyes on the Lake training in the spring or summer of 2022 and every three to five years following, depending on need and resource availability, to become familiar with the various aquatic plants known to the Tahoe-Truckee Region. Additionally, the League will provide GDRA with a counter-top aquatic plant educational display to be placed in the clubhouse or other appropriate location for residents and visitors to learn about the region's aquatic plants and how they can prevent the spread of aquatic invasive species. To help share these results, the League and GDRA are currently discussing a feature in a future issue of the GDRA's newsletter, *The Shire*, that includes survey results and information on the Eyes on the Lake program. In the long-term, League staff recommends conducting repeat surveys, with League staff or trained GDRA staff, of Glenshire Pond every five years or more frequently if risk of infestation increases.

League staff will direct Eyes on the Lake volunteers to continue monitoring Glenshire Pond for aquatic invasive species on their own and share their knowledge of aquatic invasive species to visitors and community members. As always, the League encourages non-motorized watercraft owners to properly maintain their watercraft by becoming Tahoe Keepers and taking advantage of the free watercraft inspections and decontaminations offered by the Lake Tahoe Boat Inspection Stations run by Tahoe Resource Conservation District and Tahoe Regional Planning Agency.

² *The role of waterbirds in the dispersal of aquatic alien and invasive species*, Chevonne Reynolds et al. 2015.
<https://onlinelibrary.wiley.com/doi/full/10.1111/ddi.12334>

Appendix A

Map depicting locations and spread of plants observed* and areas surveyed during the Glenshire Pond survey on 7/30/21.

*Not every individual plant observed is represented in this data.

Glenshire Survey 7/30/2021

