

Discovery Lake Self-Guided Nature Trail

Summer Edition



**Brochure Prepared by the
NIEHS Environmental Awareness
Advisory Committee (EAAC)**

National Institutes of Health
U.S. Department of Health and Human Services

Natural History

Most of this land was settled during the mid-1730s, and portions of the homesteads were cleared for farming and livestock. The land was poor and soon farming decreased. Some of the old crop furrows can still be seen. At one time, black bear, elk, deer, bison, wolves, bobcats, and mountain lions roamed this area, which were hunted to help sustain the settlers. The current pines are second growth trees, allowed to develop into the mixed species forest present today. Ground was broken for the campus in the early 1970s. Boulders extracted during construction were placed into the lake to provide structure for hatchlings and turtles. Earth removed in shaping the 27-acre lakeshore was used as fill and for landscaping the 92-acre development.

The Benefits

For wildlife, the lake provides habitat for native and migratory ducks and geese, a variety of reptiles, amphibians, fish, and mammals, and hundreds of bird species.

For employees, the lake provides a freshwater sport fishing opportunity. The nature trail offers an outdoor educational opportunity, as well as a 1.7-mile walking/jogging path.

The lake also serves as a rainwater catch basin, decreasing potential flooding and erosion problems along the flood plain of Burden Creek, which flows into Jordan Lake. A 50-foot buffer around the lake, established in 2009 by the State of North Carolina, restricts alteration of the vegetation. Some mowing is allowed in this zone since it was being done before restrictions were put in place.



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Trail Markers

#1 The lake was formed and filled around 1976. Soil from the lakebed was used in the 92-acre developed area. After the shoreline was stabilized, the lake was stocked with a broad range of fish, including crappie, largemouth bass, hybrid striped bass, sunfish, and catfish. Shrubs and bushes around the edge were allowed to grow naturally, except around the Memorial Garden. Sedges, cattails, and other wetland species populate the bank near bridge 1.

#2 The understory plants near bridge 2, like the sweetgum, ash, blackjack oak, and red oak, will someday be part of the canopy. The red cedar, blueberry, and sumac will stay midlevel. The riprap rocks located at the end of the concrete sluiceway slow down storm water discharge to the lake from the south parking lot. The pine is overgrown with orange trumpet creeper.

#3 The Memorial Garden is dedicated in memory of NIEHS employees who have died. The area contains a mix of native and domesticated plant species, including sea oats. The garden also serves as part of the Pollinator Enhancement Program. Bee blocks were added to the garden to attract cavity dwelling bees, including orchard mason bees.

#4 In the distance, plant succession, or a change in the types of plant species that occupy a given area, is taking place, with native grasses taking over a formerly mowed area. This area, mowed once a year in October, allows the annuals and perennials to grow and flower. A white Purple Martin house is located in the background. Martins are capable of catching insects above the treetops. Contrary to popular belief, they don't eat mosquitos — bats have that responsibility.

#5 A multiple trunk willow is growing just south of bridge 3. This is a very moist area and willows thrive in this setting. As you go up the hill, small wood line ash, sweetgum, and hickory trees display brilliant yellow colors in the fall.

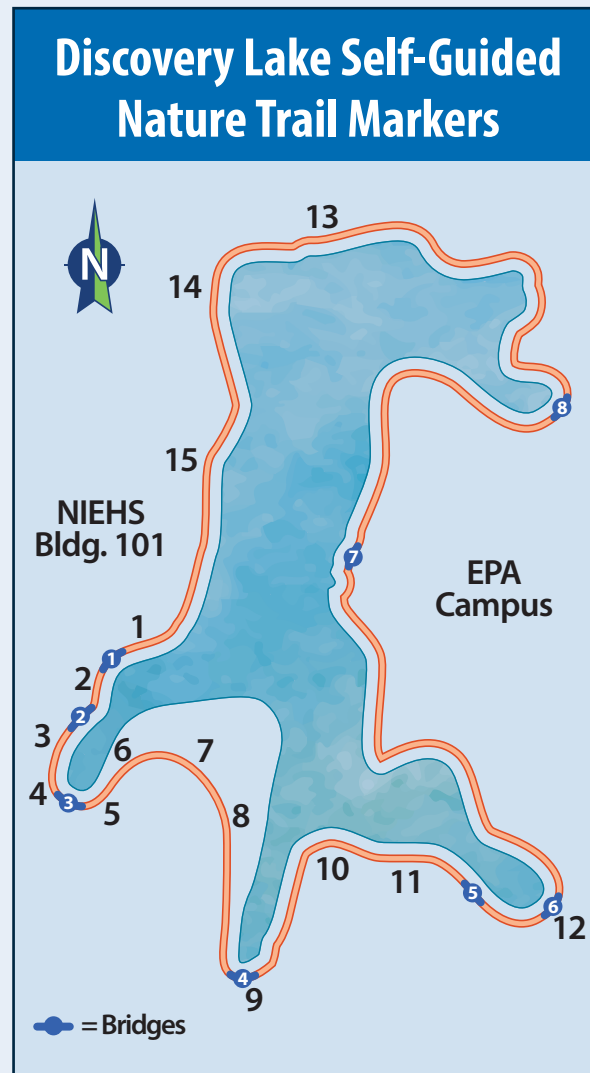
#6 This is a transitional area, called a riparian zone, or an interface between a lake or stream and dry land. Invasive Japanese stiltgrass and lespedeza are outcompeting the native grass species in this area. Sea myrtle and small native trees are also emerging.

#7 Dogwoods are growing here. They are a common understory species in North Carolina that thrive in the partial shade of taller tree borders. The ravine/washout is evidence of erosion that occurred following forest clear-cutting over 40 years ago.

Brush and limbs are now being placed in similar ravines to reduce erosion and allow seedlings to become established.

#8 In 1996, Hurricane Fran uprooted several large trees in this area, opening the canopy and allowing an abundance of younger trees to grow.

#9 As you approach bridge 4, the shrub-like sweetgum trees are recovering nicely after being pruned five to seven years ago by enthusiastic beavers. This area provides a great cove for aquatic birds to hang out and do a little fishing.



#10 This shoreline has been subject to erosion, especially from northerly winds. The trail was rerouted inland in 2004 because of shoreline loss. The Army Corps of Engineers would not allow alteration of the shoreline in order to keep the former trail location.

#11 Root exposure is evident here and a potential erosion problem is being avoided through the natural growth of numerous lichens, mosses, and herbaceous vegetation that stabilize the cooler, shaded slope. These species do well in compacted, moist, shaded, and acidic soils. Fallen trees add to the nutrient pool.

#12 Bridge 6 marks the transition point from the NIEHS to EPA shoreline. Sea myrtle, stiltgrass, blackberry, and persimmon dominate the area. Keep an eye and ear open for the numerous shoreline wildlife. Small fish and animals often find shelter under the vegetation.

As you continue the walk, look for turtles and birds on the rocks, as well as the EPA information kiosk, bee blocks, and beaver paths, ponds, and a lodge.

#13 This earthen dam has outflow pipes which penetrate through the dam on its north side. If you walk to the dam's north edge, you will be able to hear and maybe even see the outflow water. This flow is controlled by valves located in two concrete structures on top of the dam. Tree saplings are not allowed to grow on the dam, as their roots could eventually undermine the structure.

#14 This area had a significant erosion problem after the F module was built, but was naturally stabilized by a thick growth of native grasses and plants. However, a pipe break washed out the vegetated slope and undermined the fire lane in June 2010. Rocks were used to stabilize the steep slope following the washout.

#15 Notice all of the reddish barberry shrubs along the lake's edge. Although somewhat effective as a goose barrier, barberries are now on the invasive plant list for North Carolina.

Lake Area: 27 acres

Campus Area: NIEHS – 375 acres

EPA – 133 acres

Fishing allowed after work and on weekends.

For more details, go to <http://www.niehs.nih.gov/about/stewardship/lake>