

= Harveys Lake (Pennsylvania) =

Harveys Lake (also known as Harvey Lake or Harvey 's Lake) is a natural lake in Luzerne County , Pennsylvania . It has a surface area of approximately 621 @. @ 5 acres , or nearly a square mile . The lake is situated entirely within the borough of Harveys Lake . By volume , it is the largest natural lake in Pennsylvania , and by surface area , is the second @- @ largest lake . It is a glacial lake surrounded by hills and is the source of Harveys Creek , a tributary of the Susquehanna River . The lake has a stone masonry dam . The lake 's watershed has an area of approximately 3600 acres . The majority of the watershed is forested , but there is some developed land as well . Nearly all of the developed land is close to the lake itself , and the lake is surrounded entirely by a paved road .

Harveys Lake was affected by algae blooms from the mid @- @ 20th century onward , and these algae blooms were caused by pollution of nutrients , especially phosphorus . The lake was identified as impaired in 1994 , with an annual phosphorus load of 1 @, @ 019 pounds (462 kg) . However , the phosphorus load has been reduced somewhat since then . The lake is listed on the Luzerne County Natural Areas Inventory . A number of rare or endangered plant species have been observed in its vicinity . Various species of fish inhabit the lake and a number of bird species have been observed in its vicinity .

Harveys Lake was accidentally discovered by Benjamin Harvey in 1781 . The first settlers arrived at the lake in the 1790s and 1800s . Early industries in the area included lumbering and farming , but it became well known as a summer resort in the latter part of the 1800s and into the 1900s . It was also used as a water supply in the early 1900s . However , the lake began to develop significant environmental problems in the 1960s and a total maximum daily load was created for it in 1994 . Since 1968 , the lake has been located in the borough of Harveys Lake .

= = Geography = =

Harveys Lake is the largest natural lake in Pennsylvania by volume and the second @- @ largest by surface area . It has a surface area of 621 @. @ 5 acres and an average depth of 36 feet (11 meters) , as well as a maximum depth of 102 feet (31 m) . The lake 's shoreline is 8 @. @ 3 miles (13 @. @ 4 km) long . By surface area , it was approximately twice its current size when it was first surveyed in the late 1700s .

Harveys Lake is situated in the borough of Harveys Lake , and it is 12 miles (19 km) northwest of the city of Wilkes @- @ Barre .

Harveys Lake is of glacial origin . It is surrounded by steep hills on all sides . At their highest point , to the south of the lake , the hills reach 410 feet (120 m) above the lake 's elevation . The lake has a gravel bottom .

The main outflow of Harveys Lake is Harveys Creek , a tributary of the Susquehanna River . The lake 's major inflows include two unnamed streams with widths between 4 and 8 feet (1 @. @ 2 and 2 @. @ 4 m) and depths of 6 inches (15 cm) . Springs also feed into it . The lake 's elevation is 1 @, @ 253 feet (382 m) above sea level . The lake is located in north @- @ central Luzerne County , in the Lower North Branch Susquehanna drainage basin and the Upper Susquehanna - Lackawanna basin .

A 1921 book described the shape of Harveys Lake as " very irregular " . The lake has a maximum length of 15 @, @ 640 feet (4 @, @ 770 m) and a maximum width of 4 @, @ 960 feet (1 @, @ 510 m) . It has a capacity of 7 @. @ 733 billion US gallons (29 @. @ 27 million cubic metres) . Harveys Lake is dammed by a stone masonry dam with two spillways . The dam is 120 feet (37 m) long and 4 feet (1 @. @ 2 m) high .

Harveys Lake was described as " one of the most beautiful " lakes in Pennsylvania in Henry C. Bradsby 's 1893 book History of Luzerne County , Pennsylvania .

= = Watershed = =

Harveys Lake is situated in the United States Geological Survey quadrangles of Harveys Lake and

Noxen . The watershed of the lake has an area of 3 @, @ 600 acres (1 @, @ 500 ha) . Most of the watershed is in Luzerne County , but its northeasternmost portion is in Wyoming County .

The vast majority (2 @, @ 841 acres [1 @, @ 150 ha]) of the watershed of Harveys Lake is forested land . Developed land and farmland comprise 499 acres (202 ha) and 154 @. @ 7 acres (62 @. @ 6 ha) , respectively . Unpaved roads make up 2 @. @ 5 acres (1 @. @ 0 ha) of the watershed . The majority of the developed land in the watershed is directly on the shoreline and nearly all is within 0 @. @ 5 miles (0 @. @ 80 km) of the lake . Most of the developed land is used for residential and commercial purposes . One developed area in the watershed is known as Hemlock Gardens , which occupies an area of 28 acres (11 ha) and has 26 homes . The development had steep slopes (8 to 18 percent grade) , unpaved roads , and no infrastructure for dealing with stormwater . However , a nutrient @-@ separating baffle box and a water polishing unit were installed in the development , reducing the phosphorus load of Harveys Lake by an estimated 36 pounds (16 kg) per year .

The shoreline of Harveys Lake is entirely surrounded by a paved road , which is atypical for a lake shoreline . Homes and cottages are situated on the road opposite the lake , and significant development has occurred in the vicinity of the lake . A ditch and outlet drainage structure made of concrete at Wardens Place drains into the lake ; its purpose is to control small @-@ scale local road flooding .

= = Hydrology = =

Although Harveys Lake 's waters were described as having " great purity " in 1893 , the lake has experienced nutrient pollution , especially from phosphorus since at least the mid @-@ 20th century . Algae blooms occurred on the lake and caused a reduction in water quality throughout the latter half of the 20th century . A sewage system was installed in the borough of Harveys Lake in the summer of 1976 , but this did not completely stop the algae blooms . However , the phosphorus load in the lake has been reduced by 29 percent . The lake was identified as impaired in 1994 , with the cause of the impairment being large algae blooms and sedimentation in some areas . It is an anoxic lake .

In the 1990s , the concentration of phosphorus in the waters of Harveys Lake was measured to be 0 @. @ 031 milligrams per liter . The annual load of phosphorus was 1 @, @ 019 pounds (462 kg) per year . The lake 's total maximum daily load for phosphorus is 0 @. @ 024 milligrams per liter and 789 pounds (358 kg) per year .

In the 1990s , 255 pounds (116 kg) of the annual phosphorus load of Harveys Lake came from internal loading , 233 pounds (106 kg) came from groundwater , 199 pounds (90 kg) came from developed land , and 150 pounds (68 kg) came from shorelines . Smaller sources of phosphorus included farmland (95 pounds (43 kg) per year) , forests (51 pounds (23 kg) per year) , septic systems (33 pounds (15 kg) per year) , and unpaved roads (3 @. @ 4 pounds (1 @. @ 5 kg) per year) .

The hydraulic residence time of Harveys Lake is 1116 days . The lake causes substantially reduced peak flood flows on Harveys Creek . Visibility in the lake is typically approximately 10 feet (3 @. @ 0 m) . However , it can be as low as 5 feet (1 @. @ 5 m) or as high as 15 feet (4 @. @ 6 m) .

= = History and recreation = =

Harveys Lake was entered into the Geographic Names Information System on August 2 , 1979 . Its identifier in the Geographic Names Information System is 1200085 . Lake Township is named after the lake .

Harveys Lake is named after Benjamin Harvey , a member of the Sons of Liberty and among the first settlers of the Wyoming Valley . Harvey inadvertently discovered the lake in 1781 , while returning home after being held as a prisoner of war in Fort Niagara . The first resident in the vicinity of the lake was Matthew Scouten , who arrived in the early 1790s , but the first settlers were the Worthingtons , who arrived in 1806 . The lake was first surveyed by Christopher Hurlbert in 1794 ,

and the first person of European descent to explore the lake by canoe was Andrew Bennett , in 1800 .

The early settlers in the vicinity of Harveys Lake mainly engaged in lumbering and farming , which was a common occupation . At one point during the 1800s , the mills of Hollenback & Urquhart were cutting more than a million board feet of lumber annually at the lake . However , by 1853 , summer resorts used by Wyoming Valley residents began appearing near the lake . Hotels such as the Lake House Hotel and later the Rhoads Hotel , the Lake Grove Hotel , and the Grand Hotel Oneonta were among the hotels on the lake in the late 1800s . Grand Hotel Oneonta was especially prominent in the early 1900s , and former United States President Theodore Roosevelt visited the hotel in August 1912 . In the early 1900s , there were three hotels , two hundred cottages , and sixty boathouses on the lake , most of them at least 15 feet (4 @-@ 6 m) above the water line .

The Harvey Lake and Towanda Branch of the Lehigh Valley Railroad was constructed in the late 1800s . It ran directly from Wilkes @-@ Barre to Harveys Lake . In the 1890s , railroad lines were constructed from the lake to the communities of Pittston and Towanda .

Harveys Lake has been popular for recreational purposes since the late 1800s . Places such as Warden Place and Sandy Beach were popular recreational areas near the lake in the early 1900s . Around this time period , there were four steamboats on Harveys Lake . They were used for carrying passengers and freight . Recreational steamboat rides on the lake were popular between 1900 and 1920 . A 60 @-@ foot (18 @-@ meter) high Shoot the Chute was built in the area by Charles Shelley in 1910 . It was one of the largest attractions in the lake 's vicinity . A casino near the lake was opened by Frank Devlin in May 1924 , but was demolished in 1980 . Devlin also opened the largest bowling alley in northeast Pennsylvania near the lake . Throughout the 20th century , prior to and after World War II , the lake attracted thousands of visitors yearly .

In the early 1900s , Harveys Lake was used as a water supply for Nanticoke , as a private ice supply , and as a summer resort .

Harveys Lake has been the subject of scientific studies since the late 1940s , when C. B. Reif conducted limnological studies on it . By the 1960s , Harveys Lake began to develop environmental problems . It was the subject of a number of studies in the late 1980s and early 1990s . These studies indicated that the lake was eutrophic . Algae blooms caused it to be closed to swimming in 1981 and 1990 . The Pennsylvania Department of Environmental Protection completed a phosphorus TMDL for the lake in 2002 .

In modern times , the main recreational uses of Harveys Lake include swimming , fishing , and boating . However , it lacks public access locations for SCUBA diving . According to its TMDL document , the lake is " one of the most heavily used lakes in the area " . It has been situated within the borough of Harveys Lake since January 1 , 1968 , when the borough was incorporated . In 2004 , a plan to dredge and develop a patch of wetland for 30 boat slips near the lake was opposed due to safety concerns (poor visibility) as well as environmental concerns .

= = Biology = =

Harveys Lake is listed on the Luzerne County Natural Areas Inventory .

Numerous rare or endangered plant species have been observed in the vicinity of Harveys Lake . Plants in the vicinity of the lake include Vasey 's pondweed , flat @-@ leaved pondweed , grassy pondweed , broad @-@ leaved water @-@ milfoil , and Beck 's water @-@ marigold . However , exotic and invasive plants such as fanwort and aquatic coontail also inhabit the area and have altered the habitat in the vicinity of the lake . Second @-@ growth forests occur in the area surrounding the lake .

Algae blooms have occurred on Harveys Lake due to high levels of nutrients in the water .

Harveys Lake is inhabited by various species of native fish of Pennsylvania . In 1972 , Field and Stream noted that the lake was inhabited by rainbow trout , sockeye salmon , and some lake trout . As the basin of Harveys Creek upstream of the tributary Pikes Creek is designated as a High @-@ Quality Coldwater Fishery , the lake itself has the same designation . Harveys Lake has regulations permitting a creel limit of three trout per day , with only one being allowed to be more than 18 inches

(46 cm) long .

Various bird species have been observed in the vicinity of Harveys Lake . These include surf scoters and black scoters , which have been observed there in the winter . Although greater scaups are rare in Pennsylvania away from Lake Erie , one was observed at the lake in July 1992 . Franklin 's gulls have also been observed near the lake , as have snow buntings and black @-@ legged kittiwakes , and ruddy ducks . Nine brant geese were observed on the lake in May 1997 .