



Frequently Asked Questions about Lake Tahoe and the Basin

How big is Lake Tahoe?

Tahoe is 22 miles long, North to South, and 12 miles wide, with 72 miles of shoreline.

How old is Lake Tahoe?

The best estimate is that Lake Tahoe itself formed about two million years ago, and has been roughly the size we see today for the last million years. The forest landscape surrounding the lake developed over the last 10,000 years.

How deep is Tahoe?

Lake levels and depth vary only slightly today. The deepest recorded depth of Lake Tahoe is 1,645 feet. To visualize this depth, imagine the bottom of Tahoe reaching down 100 feet lower than Carson City Nevada, sitting in the basin far below Tahoe to the east.

What we see as “normal” Lake Tahoe depth is only our perspective. Over its history, the lake level has been much lower or much higher than today. We can see clear evidence of lower lake levels in the past lasting hundreds of years. Many locations around the lake have submerged mature tree stumps twenty feet below current lake levels. By examining and dating the tree rings of these underwater stumps, we can see that shoreline forests have repeatedly been drowned by ups and downs in the historic lake levels of Tahoe.

I have heard that Tahoe is the world’s deepest lake, is that true?

No, but Tahoe is *among* the deepest. The maximum-recorded depth of Tahoe is 1,645 ft. or 501 meters. In North America, two other lakes are deeper than Tahoe; one is Crater Lake in Oregon at 1,945 feet or 593 meters in depth. In Canada, Great Slave Lake is 2,015 ft. or 614 meters in depth.

The deepest, largest and oldest of all lakes is Lake Baikal in Siberia, at 5,400 ft. or 1,637 meters in depth. Lake Baikal at 25 million years old is the largest fresh water lake, containing over 20% of all surface fresh water on Earth.

Although Tahoe is not the largest, deepest or oldest, it is one of the clearest and most beautiful lakes in the world, and is regarded as the Jewel of the Sierra.

How much water is in Lake Tahoe?

Lake Tahoe contains an average of 37 trillion gallons of water. That's hard to imagine, but it is enough water to cover a flat surface, the size of California with 14 inches of water. If you did ever manage to drain Tahoe, it would take around 700 years to fill back up again.

How was Lake Tahoe and its basin formed?

The basin formed at least two million years *before* the lake. Many people think Tahoe was formed by giant glaciers; however glaciers came along too late to form the massive Tahoe Basin. Others have heard it was once a huge volcano. Volcanoes did not form the basin, but like glaciers, volcanic activity played a part in the formation of the Tahoe Basin.

Around five million years ago a very active period of mountain building took place. Large blocks or plates were pushed up forming the crest of the Sierra Nevada. Where the basin is today, two parallel blocks pushed up, one on the west, another to the east. Between these, another smaller block slipped down. This created a very deep and steep sided valley basin, open to the north.

The open north end allowed snowmelt to flow out of the basin, and then through valleys towards the east and down to the Great Basin. The "valley basin" changed into a "lake basin" some two million years ago when several large volcanic eruptions occurred. One of these, called Mount Pluto, poured lava and volcanic mudflows into the northern outlet of the basin, blocking it up. Over time, snowmelt and rain filled the basin, creating one of America's most famous and beautiful alpine lakes.

Glaciers would later help shape some areas of the western slopes on the California side, with the most notable traces being Emerald Bay and Fallen Leaf Lake. We can also see traces of the volcanic period in the form of volcanic "plugs." These are the hard solidified cores now exposed by erosion. Cave Rock and Shakespeare Point along the southeast shore are examples, easily seen today along Highway 50.

How old are the forests around Lake Tahoe?

Not as old as many think. Although the lake is well over a million years old, and the basin around it five million years old, the forests are much younger. Ten thousand years ago the climate was colder and drier, and much of the plant life in the basin was a type of sagebrush. Conifers or "evergreens" such as types of junipers and single-leaf pines quickly colonized the basin as the climate became warmer and wetter. The large stands of conifers we know today became well established around seven thousand years ago.

When did people first come to Tahoe?

Archeologists believe that the first people came to the lake at least 9,000 years ago, seasonally at first. Later, semi-permanent communities developed. The Washoe Tribe of Nevada and California will tell you that it cannot be said when the first people came to the lake, as the Washoe have always been at Tahoe.

Where does the name "Tahoe" come from?

The origin of the name "Tahoe" has some controversy, however it is probably on the Washoe Tribe's term "*Da ow ga*" or simply "*the lake*." Early Euro-Americans heard the Washoe pronunciation, and the variation "Tahoe" was soon applied.

How does water flow into and out of Lake Tahoe?

The basin contains 63 separate surface water sources that flow into the lake. More water enters the lake underground by percolation through the soil. Only one outflow carries water out of Tahoe, the Lower Truckee River near Tahoe City on the northwest shore. There is also the water that leaves the lake through evaporation – enough that if it could be condensed back to liquid, it could serve the water needs of Los Angeles for 24 hours.

Does the lake ever freeze over?

No. Partly this is due to its size, but also to the action of energy. The great volume of water is constantly in a slow rolling motion, generated largely by the energy of sunlight. The waters of Tahoe are like a giant battery, absorbing and holding heat from solar energy during the day, and radiating it off at night. This causes water to circulate in flowing currents known as convections, preventing the lake from freezing.

The upper surface of the lake can store an amazing amount of solar energy. Deep in winter, it is not unusual for the morning air temperature at lake level to be noticeably warmer than the air in Carson City over 1,500 feet lower. The solar energy stored up by the lake is radiated off at night.

Why are the waters of Tahoe so clear compared to other lakes?

Tahoe is one of the world's clearest lakes. You can credit geology with much of the answer. The lake formed in a basin high in the Sierra, around 6,225 feet at lake level. On average the elevation and average temperatures help inhibit the growth of algae, which gives most other lakes a greenish look. The steep geology and soil types forming the basin around the lake have developed into a natural filtering watershed system. Decomposed granite soil absorbs water, and helps filter out materials and sediments that would otherwise cloud the water. Over 10,000 years, plants and soils locked up much of the phosphorus and nitrogen, and stream banks stabilized into a delicate but highly effective watershed, creating famously clear lake waters.

In the 1860s, lake waters were so clear, that objects 100 feet below the surface could clearly be seen. Over recent decades, there has been a 25% reduction in clarity in Lake Tahoe. Until recently, the pace of unregulated or unplanned development actions blocked or damaged the watershed and increased or concentrated erosion. This disturbance altered the natural filtering ability of the basin, allowing phosphorus and nitrogen to wash out of soils and feed algae. Silts and air pollution have also been factors. Maintaining and restoring the delicate watershed is a major effort of Forest Service activities in the Lake Tahoe Basin Management Unit (LTBMU). Other federal, state and local actions are reducing erosion and runoff, designed to halt and reverse the trend.

What does the Forest Service do at Lake Tahoe?

Primarily the USDA Forest Service, Lake Tahoe Basin Management Unit (LTBMU) is responsible for the conservation, preservation and restoration of the Lake Tahoe watershed ecosystem within National Forest Lands. Projects and programs also include habitat, fire management, and urban lot management. Additionally the LTBMU provides and maintains high quality recreational opportunities for millions of visitors and residents annually.

Compared to other National Forest Lands, the LTBMU is small, yet it is the Tahoe Basin's largest land manager, responsible for 78% of basin lands. As such the Forest Service has the largest single role in ecosystem and watershed management and protection. The LTBMU is a part of National Forest System Lands, yet is managed somewhat differently than other National Forests. Many common forest activities such as mining, grazing or timber harvesting are either not a part of LTBMU management or play a very small role. Since the lake is so dependent on all that happens around it, LTBMU programs manage the whole of the basin as a complete inter-dependent system.

The LTBMU is a unique inter-mix of forest and urban communities, presenting challenges and complexities few other National Forests experience. Since its establishment in 1973, the LTBMU has become a pioneer and leader in the science of forest and ecosystem management. The work of the Forest Service supports and is supported by many partners. Other federal, state and local agencies are working together in the effort to face challenges, conserve and restore natural and cultural resources, and enhance the recreational values of the Lake Tahoe Basin.

Why are you called the “Lake Tahoe Basin Management Unit” (LTBMU) and not a National Forest?

The story started in 1899 when President McKinley created the Lake Tahoe Forest Reserve becoming the core of later National Forest Lands in the Tahoe Basin. Three separate forests were developed out of the reserve, the Tahoe, Eldorado and Toiyabe National Forests. Each of these forests extended into the basin and managed separate sections.

In 1973, the LTBMU was created from basin portions of the three existing National Forests, forming a single “management unit.” This unification provided the focus needed for the basin, and more effective management of its watershed, ecological and recreational values. The name “Lake Tahoe Basin Management Unit” was originally a temporary one, but after three decades, the name remains.

Established in 1905, the Forest Service is an agency of the U.S. Department of Agriculture. The Forest Service manages public lands in national forests and grasslands. Gifford Pinchot, the first Chief of the Forest Service, summed up the mission of the Forest Service — “to provide the greatest amount of good for the greatest amount of people in the long run.” National forests and grasslands encompass 191 million acres (77.3 million hectares) of land, which is an area equivalent to the size of Texas.