

***Begin Your Tour at the Entrance to the Prairie (Follow Staff Instructions)***

Welcome! Thank you for visiting! The mission of Headwaters at the Comal is to strengthen the relationship between the community and nature by showcasing the significance of the Comal Springs. We hope you agree and better understand this connection by the end of your visit.

This is the location of the headwater springs of the Comal River and the first waterworks for the City of New Braunfels. Historically, the immediate area possessed fine, high quality, sedimentary rock for fashioning stone tools, pure water, lush vegetation, and an abundance of game. Because of this, people have been attracted to the Comal River and its surrounding springs as far back as 10,000 years ago.

Spanish explorers first arrived in the area in 1691. They were led by Father Damian Massanet, who gave the springs the name *Las Fontanas*. In 1827, the league containing the springs was granted to Juan Martin de Veramendi, Mexican Governor of Coahuila & Texas; and father-in-law to Alamo defender, Jim Bowie.

The springs were just as important for survival to the Europeans who arrived later. Heinrich Klingemann emigrated with his family from Hanover, Germany in 1846 and purchased the land surrounding the uppermost springs of the Comal River. These springs, three in total, came to be known by locals as the Klingemann Springs.

As you visit today, please stay on the paths to help protect our plants. Be aware of your surroundings and watch for any low hanging branches, puddles or muddy areas, ant mounds, or other hazards. Also, please be sure to leave no trace and take any trash or recyclables with you as you leave.

***Begin walking along path. Stop when you get to the first bridge.***

Our drought-hardy savanna, previously a parking area, is planted with a mix of native Texas grasses and wildflowers. These plant species thrive in the Edwards Plateau, with limited tree cover and plenty of direct sunlight. New Braunfels sits on the border between two distinct ecosystems, the Edwards Plateau to the west and the Blackland Prairies to the east. The Edwards Plateau is characterized by thin soils and savannas that are home to short grasses and scattered trees as you see in the Hill Country. The Blackland Prairies get their name from the rich, dark soil found in the region, which extends from the Red River in North Texas down to San Antonio, and is ideally suited to crop agriculture.

The slight hills you see are berms. The low planted drainage areas are bioswales. By creating these features during restoration, we are helping control the speed, volume, and direction of water flowing across the site. This protects the habitat from destructive floodwaters. These landscape elements are also designed to remove silt and pollution from surface runoff water.

***Follow the path until you get to the rock walls on your right.***

Part of the site's restoration included improvements to this large storage tank, which stores hundreds of gallons of chlorinated water. In the past, rare overflows discharged water from the tank directly in to the springs, potentially harming the invertebrates living in this sensitive ecosystem.

New Braunfels Utilities added sensors to the tank and modified its overflow pipe to prevent chlorinated water from entering the springs in the unlikely event of a future overflow. This elevated pipe will divert chlorinated water away from the springs and into the splash basin on the nearby hilltop. This allows natural drainage and filtration to neutralize the chlorine in the water before it reaches sensitive waterways.

***Walk toward the springs and stop at the overlook***

Until the early twentieth century, New Braunfels relied on the Comal River for its water supply, pumping from the river near Clemens Dam, where the tube chute is located today. However, textile mills and general growth began polluting the river at the turn of the century, so the city turned to cleaner sources upstream.

Fritz Klingemann, who inherited this property from his father, offered to sell the springs to the city in 1906 for \$2,000 (roughly \$54,500 today). The city council rejected the offer, feeling it was too high for an “alligator swamp.” Eventually, the city purchased the land for an increased price of \$2,500 in 1907 (around \$68,000 today). Soon new water lines and a pump were installed on the property, founding the city’s new waterworks.

In 1933 the City applied for newly available federal funding for improvements, including capping the springs to help control flow. By 1936, the springs had been covered with an 8 ton concrete cap and surrounded by a concrete block retaining wall.

These springs stayed capped until 2016, when restoration work began. A key element of this was the removal of a portion of the concrete cap. Working with the Texas Historical Commission and environmental consultants, it was determined the best option was to remove 1/3 of this cap. You can see pictures of this removal on the interpretive sign at the Overlook. With the springs now open, organic matter falls into the water and adds critical nutrients to the ecosystem, which is home to several rare and endangered species.

The springs’ ecosystem is home to four endangered aquatic species: Comal Springs Riffle Beetle, Peck’s Cave Amphipod, Fountain Darter, and Comal Springs Dryopid Beetle. You can see pictures of these species on the interpretive sign along the Spring Run. The Comal River and nearby San Marcos River are the only places in the world these animals have been found. Many of them are tiny, for example, the Riffle Beetle and Dryopid Beetle are only about 1/8 inch in size. Some of the main threats to these species are pollution of the springs system and decreased water flow due to population growth and increased use of groundwater.

***Begin walking along the Spring Run.***

The Comal Springs system consists of hundreds of individual springs located between here and Landa Park. Look closely, you may see some of these springs bubbling to the surface. These springs are outlets for the huge, underground Edwards Aquifer. Both drought and pumping of water for human use can severely reduce the amount of water flowing from the springs.

Did you know the Comal Springs are the largest group of springs in Texas? Wondering why? Thanks to the geology of this region. New Braunfels is located in the Balcones Fault Zone. This runs roughly from Del Rio, in the southwest, to Dallas. This fault has been inactive for nearly 15 million years, but the fault zone is what creates the springs and allows the fresh water to move from the aquifer to the surface.

This spring run flows through Landa Lake and becomes the Comal River, which is the shortest navigable river in Texas. It only flows around 2.5 miles before joining with the Guadalupe River. The Comal was originally called the Little Guadalupe, but in 1727 it was given its current name, which is Spanish for a smooth, flat griddle typically used to cook tortillas or prepare food.

***Continue walking along the path to the top where you can get a good view of the bank of Blieders Creek***

You are currently walking along the banks of Blieders Creek. Today this is overflow for the Comal River and only flows beyond Klingemann Street after significant rain events. Historically, this creek was prone to flooding, most notably in 1972, when a major flood devastated this area. Following this flood the creek was dammed to help prevent future tragedies.

The ecosystem you see along Blieders Creek is called a Riparian system. This type of system exists in the transition between land and water, primarily along river banks. Scientists call these types of transitional areas “ecotones”. By connecting two distinct ecosystems and including characteristics of both, ecotones often support a rich diversity of plants and animals. This riparian woodland ecotone includes trees that depend on water from Blieders Creek, as well as fish and insects that find food and shelter in the roots and shade of plants that grow along the water’s edge. What can you see as you look at this ecotone?

***When you reach a fork in the path, keep to your left back towards Blieders Creek; follow this path until you can see the stone buildings in the Well Yard***

When New Braunfels received funding from the federal government in 1933, they not only capped the springs, they also constructed two new buildings. The stone and concrete buildings you see were constructed to house water pressurization equipment, maintenance facilities, and a metal foundry. At least two wells were also constructed at that time and were operating in 1936. A third was drilled in December 1944.

The operation of the city’s waterworks was turned over to New Braunfels Utilities in 1959 and they moved their operations here in the 1960s. They remained here until 2004 when NBU moved most of their operations to a new location on FM 306, which made way for the restoration here.

Our well yard and its historic structures are still operational, drawing water from the Edwards Aquifer and storing it for use throughout New Braunfels. The Edwards Aquifer is a karst aquifer, meaning it is made of porous, honeycombed formations of limestone that serve as natural routes through which water travels and is stored underground. This water is then extracted to meet the needs of millions of people and businesses, including residents of San Antonio, San Marcos, and New Braunfels.

Seeing these operations alongside the springs is a powerful reminder of how your water use directly impacts the environment. The construction you see will expand the capacity for the system currently in place in order to meet increased demand. What can you do at home or in your life to lower water usage?

***Move up the path toward the pavilion, when you get to the top of the path stop along the bridge, so you can get a good view of the bioswales and detention ponds.***

One of the most important changes made to the property was the removal of 85% of the paving that previously covered the site. Most of that was removed from the area you're looking at now. The remaining concrete, where you parked today, will be removed in future construction phases.

During past rain events, water moved across the concrete directly into the spring run and Blieders Creek. This water could move at destructive speeds; create flooding; and carry huge amounts of runoff (including animal and agricultural waste, chemicals, and trash) directly into these waters.

Removing this concrete slows the flow of runoff across the property and allows a significant amount of water to filter into the aquifer through the ground's natural filtration system. In times of heavy precipitation, rain gardens and raised bioswales provide additional flood control by steering fast-moving, sediment-laden water away from ecologically sensitive areas, like the springs.

The rain gardens in this area capture water from around the site, which is directed by the new bioswales. The water then filters through a natural mix of soil, rock, and plant roots to recharge the aquifer. Plants native to Texas dry creek beds are ideal for this and thrive in this environment thanks to their ability to tolerate both long periods of drought and occasional flooding.

### ***Enter the Pavilion***

These empty buildings once housed NBU operations and will make up most of the next phase of growth. Instead of tearing them down, they will be transformed into buildings available for community education and outreach.

The far building will become an 8,000 sq. ft. 'Living Building' incorporating adaptive reuse of this existing structure; exterior walls made of plants that support pollinators and provide color; a water feature using rainwater collected from the building; and constructed wetland cells demonstrating how they cleanse and filter water.

The building closer to you will be a 9,000 sq. ft. multi-purpose building available for community use. This building will also have demonstration areas for commercial and residential conservation techniques and technologies, including HVAC and lighting technology; irrigation systems; plant selection; and use of natural ventilation and daylight.

The area between the buildings will include a central court yard, event lawn and display gardens demonstrating LID (Low Impact Development) principles with drought tolerant plants, water features, and terracing.

This concludes the self-guided tour. You can follow this path back to the parking area. Thank you very much for coming to visit the Headwaters. If you have any questions or would like more information, feel free to send us an email at [headwaters@nbutexas.com](mailto:headwaters@nbutexas.com). Be sure to follow us on facebook to learn about upcoming events and get updates. We look forward to seeing you again soon! Take care!