

STOP [buggin'] ME

[projects] 2003

Why an Invertebrate Study?

The cave invertebrate study is being conducted under the Inventory and Monitoring program, with the expressed purpose of establishing a baseline species list of invertebrates present in the Timpanogos Cave System. Invertebrates can be key indicators of the health of the cave ecosystem, and without information on what species are present it is impossible to monitor changes throughout the cave systems.

How are Invertebrates Collected

Originally, specimen were collected using 35 traps and four trap types: pitfall traps, fly traps, newspaper traps, and a Malaise Fly Trap. Sampling focused primarily in the Hansen Cave entrance room, Furnace Cave, and throughout Middle Cave. We have since expanded our sampling to 83 traps located throughout Hansen, Middle, & Timpanogos, with limited collecting in Lunch Bench Cave and Root Cave. We now use pitfall traps exclusively within the Timpanogos Cave system due to their effectiveness and lower impact to the cave environment. Pitfall traps consist of plastic cups filled with preservation liquid, either alcohol or salt water, placed in a manner allowing bugs to literally walk right into our collection.



What have we found so far

Most insects collected to date have yet to be identified; however, the majority found are either certain species of flies, spiders, or cave crickets, with an occasional unique find such as a pseudo-scorpion, and the pincher from a cave adapted Daddy Long Leg (Below)



What the Future Holds

Sampling will continue through the end of the season with possible winter sampling sessions. We are working with BYU to improve our insect yield, with either different trap types or more effective bait. Additionally, we hope to begin sampling for aquatic insects with specially designed traps.

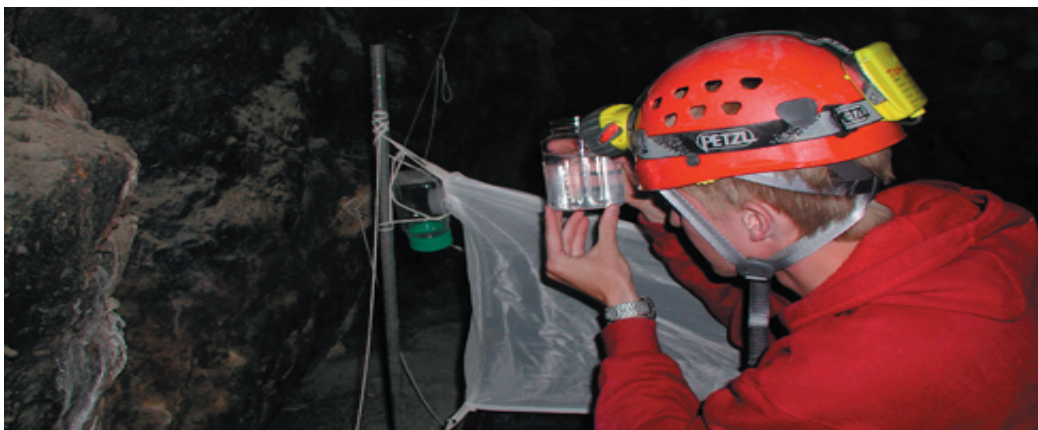


The Catwalk

As part of the project to restore cave drainages we installed PVC catch basins below the catwalks preventing silt and trash from falling into the water. We bolted these plastic sheets to the catwalks to prevent them from moving around, and to create a tighter seal. These basins will be cleaned twice a year in conjunction with the removal of silt and garbage from the bottom of the lake. Hopefully, in the next few years, visitors will view a lake as clean and pristine as when the first explorers bridged it's waters.

DNA Sampling

Microbes. On Monday the 9th of June Jon and Cami led a group of BYU biologists through the cave to collect water samples for a comprehensive survey of microbial species in the Timpanogos Cave. They sampled areas both on and off trail to monitor differences between well traveled and more secluded areas. This survey will help us understand the role of microbes in the cave's ecology.



[flower]POWER

Alum Root [good guy]

This perennial flower is found on rocky cliffs both near and on the trail. It hugs the ground with small, dark green leaves and short stems (under 1') of white to pink flowers. The spring leaves are edible boiled or steamed and the root when eaten raw will usually cure diarrhea.



Blazing Star [good guy]

This flower is a short-lived perennial herb, but it sometimes behaves as an annual. Its leaves may appear weedy, but its cream-yellow flower is very showy. They are often called "Stick-leaf" because of the barbed leaves that easily cling to clothing. Seeds are edible when parched and ground.



Firecracker Penstemon [good guy]

Firecracker Penstemon is a gorgeous perennial that produces stocks of tubular scarlet flowers. Its leaves are a shiny dark green. It can be found in many environments including along the cave trail. Hummingbirds will stake territories over firecracker patches and risk all to defend their prime nectar source.



Heartleaf Arnica [good guy]

Heartleaf Arnica has a bright yellow flower that is 2 to 3-inches across. Paired heart-shaped leaves grow from the base of the plant. Look for this flower in partial shade along the trail. Native Americans used this plant to prevent infection and reduce swelling.



Indian Paintbrush [good guy]

Indian Paintbrush can vary in color from orange, scarlet, cream and yellow. The color is mainly on the leaf bracts. The actual flowers are hidden beneath the red-tipped leaves. The plant is semi-parasitic on the roots of grasses and shrubs.



Miner's Lettuce [good guy]

This plant typically grows in shady moist areas along the cave trail. Leaves at the ends of the stalks are green and circular (to 2" in diameter) with a small, white flower growing from the center. Miner's Lettuce was used by pioneers and Native Americans as an herb and for salads.



Dalmatian Toadflax [bad guy]

Dalmatian Toadflax is a perennial that grows up to 4 feet tall. It is a native of the Mediterranean region, and is also known as "butter and eggs" or "wild snapdragon". Although it is included in many wild flower seed collections, this plant is a noxious weed which has escaped from gardens to become a serious invader of rangelands, mountain meadows, and waste areas.



Houndstongue [bad guy]

Houndstongue was introduced from Europe. It forms a rosette the first year and sends up a flowering stalk the second year. The leaves are rough and resemble a hound's tongue. Houndstongue is toxic, containing pyrrolizidine alkaloids, causing liver cells to stop reproducing.

