Fig 1.

Rainbow Trail Taylor Creek Watershed

Nature Walk

Focus on Beaver Habitat

EVS110 California Naturalist Program

Dona Olsen

The Rainbow trail has a variety of wildlife and flora. As you walk along the trail, take the time to stop and listen. What do you hear? What do you see?

Here we have some photos of local beavers in Taylor Creek at different times of the season.

What do you see the that is unique about the beaver? How do you think this helps them in their daily activities?

The paddle shape of the beaver tail will be used as a rudder in the water, store fat for the winter-time. Stability when sitting or standing or slap the water when danger approaches or play time. They may also use on trees they have gnawed on to help them fall to the ground. Their feet are webbed like swim fins.

Rainbow Trail is a ½ mile walking loop located at Taylor Creek in South Lake Tahoe. Taylor Creek is a wetland marsh area, were the water comes from Fallen Leaf Lake, extending to the west where it opens to Lake Tahoe.

The walking trail loop begins and ends at the visitor's center and has access to trail from Hwy 89 west on the North side.This is where the sign in Fig1. was taken and where our tour begins.

The beavers in Fig 2. you can see one beaver propped up on a log gnawing away at the wood? Why do you think he is doing this?

Beavers will not only use their teeth to fall trees, but they must continue to gnaw on wood to trim their teeth that are always growing. Beavers also have fur that is oily and waterproof.

Now let's walk further on the trail and see what we can observe.

Fig 2 & 3.

Fig 4.

There are benches along the trail like this if anyone gets tired, please take a seat, rest and reflect. If you would like to write down some notes in your journal you may want to make note of your observations in your surroundings?
See, hear, smell? Along the trail take time to continue to jot down thoughts or feeling for future reference. Fig 4.

Fig 5.

Fig 5. Two Mergansers relax in the shade.
How do you think they benefit by beaver damming?

The ducks and other wildlife may benefit because the stream waters flow slower above the dam, run a bit deeper and allow for time to cool off and feed.
Can you think of any other benefits?

Tree on the right fig 6. you can see a metal cage around the base and going about three feet up the tree. Why do you think that is? Below in fig 7. there is a broken tree but what is different about this type of break? What do you observe?

The cage is there to keep the beavers from gnawing on it. Last year the beavers gnawed a large tree that fell on the roof on the fish viewing room and caused significant damage. You will see a few of these metal cages around along the trail.

Can you think of any other reasons why to put a cage around a tree? Maybe the tree is in another precipitous position or a type of endangered species perhaps.

Fig 7. The pointed uneven break gives the clue that an animal did this opposed to cut by man. If you look closely you can see teeth marks.

Fig 6.

Fig 7.

Fig 8.

The area we see here off to the right fig 8, off the trail facing North.
We observe another part of the stream with many fallen trees.

What do you think this does to the stream flow and how may it or not benefit the surrounding flora and fauna?

Can you see in the middle the circular metal frame cage?
Why do you suppose it is there?

This stream is the out flow from the fish viewing area where fish need to make it back to Taylor Creek stream.
This screen covers over the culver so debris will not clog it up.

What do you thin would happen to the stream and fish if the debris could continue to build up?
The fish would not be able to make it back to the creek or have a very difficult time, right.

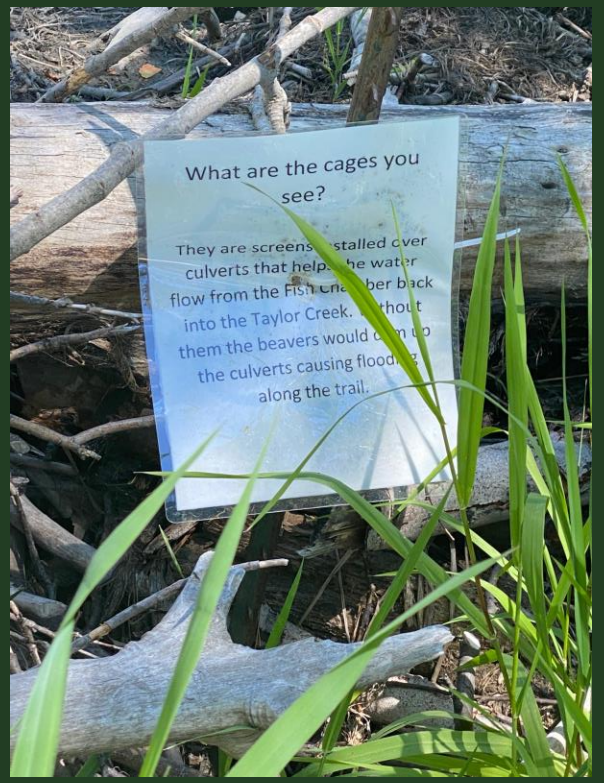

Fig 9.

Above in fig 9, a closeup shot of the observation information.

Fig 10.

The habitat of beavers is riparian habitats; ponds, lakes, streams.
In fig 10 & 11 are the same with zoom on fig 11.

What do you observe?
There are a lot of tree branches and sticks. The beavers have built a dam, this slows stream flow. What else might it do?

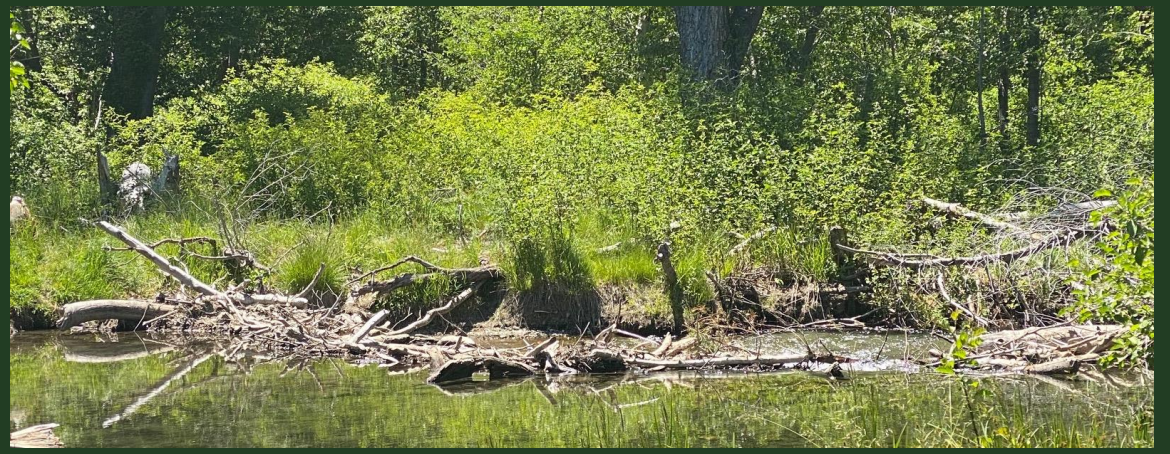

Fig 11.

Fig 12 & 13 below left, show stagnant waters in marsh area. How might this benefit the wildlife. Other that creating a breeding ground for mosquitos?
The copious amount of insects attract birds, bats and other insect eating animals, creating more diversity in ecosystems.

Fig 12 & 13.

Beaver's benefit riparian areas in many ways that have a positive role and impact in the ecosystem and contributing to more fertile wetlands.

There are many benefits to wildlife, like the kokanee salmon that run through here annually. The modulating of streamflow created by the ponds hold colder waters benefit these cold-water fish.
Also allowing ground water restoration & storage, sediment settling. Heavy winters would normally create strong stream flow that would scour out the stream. The waters held back by these dam's, slow stream flow allowing waters to nourish the marsh.

Fig 14.

Fig 14. A wide view of stagnant water and fell trees by beavers.

As we walk further along the trail past the beaver dam. We see some down trees on the North side.

Can you tell the trees cut by beavers, opposed to the ones cut by a saw?

Fig 15.

Above in fig 15. Is a close up shot of tree in fig 14.
What do you notice in the wood cut area?
Yes those are beaver teeth marks where they gnawed away the wood until it could be pushed over or fell on its own.

Fig 16.

Here is another wide view of this area, fig 16.
Do you see the different cuts in the fell trees?
How can you tell?
The difference in the cut by man is a smooth one angle cut tree.

Fig 17.

Fig 18.

Fig 19.

Example of a large couple of trees that have beaver damage in fig 17. Cut straight across on top by a saw above the gnawing area. Why do you think that was done? What else do you observe in this photo? The many branches, sticks and twigs collected beyond on the shoreline. How do you suppose they got there? The winter water flow is higher and possibly washed a lot of these branches and such downstream and this is where many of them collected over time. Can you think of any other ways? The beavers must collect and drag, carry these wood they cut and find to build their dam.

In fig 18, is a closeup view of beaver gnawed wood and in fig 19. - There is a partially submerged tree in the stream with mallards sitting on it. Another benefit to these fallen trees is a nice spot for wildlife to rest an relax.

Fig 20.

As we walk along the trail it changes into a wooden walkway that bridges over the stream and marsh. Fig 20. This creates additional lookout viewing areas, like in fig 19, and the stream out flow to the lake and marsh areas.

To the right of the trail fig 21. below photo, we observe large patches of a variety of flora like the Corn Flower plant. When in bloom they have large beautiful flowers, and when they die, they turn brown and decompose in the soil for nutrients for lower trophic levels.

Fig 21.

Fig 22. Off to the left of the bridge, observed is a yellow-legged frog. What does this say about the water in the stream?

Below in fig 23, we can see a dead crawdad.
Does this change any feelings you has about the stream waters and the frog?

Frogs are very sensitive to changes in an environment and thrive in fresh clean waters.
The dead crawdad was most likely a meal for species in a higher trophic level. What do you suppose at it?

Fig 22.

Fig 23.

Fig 24.

Walking further around the Rainbow Trial, from the bridge is a large beaver dam, fig 24.

What is different about this dam from the first one we observed at the beginning of the trail?

There are huge trees and branches that make up this large beaver made dam. Now that we have covered majority of this trial and discussed and observed beavers and their habitat.
How do you think this beaver dam was created and got so big?

Fig 25.

Above in fig 25, this view is to the right of fig 24. The stream forks off and there are many more trees and branches along the stream waters.

Have you produced an idea of how this area has accumulated such large dams?

The large scale this area is made of over a somewhat long period of time. Not like long geologic years but here in Taylor Creek the beavers worked hard on downing trees in the areas close to the stream to fall into. Many of these branches also flow downstream in high waters and accumulate here.

Below, fig 26. Is just further along the trail past figures 24 & 25.
What is beautiful and very green in this photo?
The long grasses growing high and healthy. High water line in the marsh from the help of Beavers in the ecosystem.

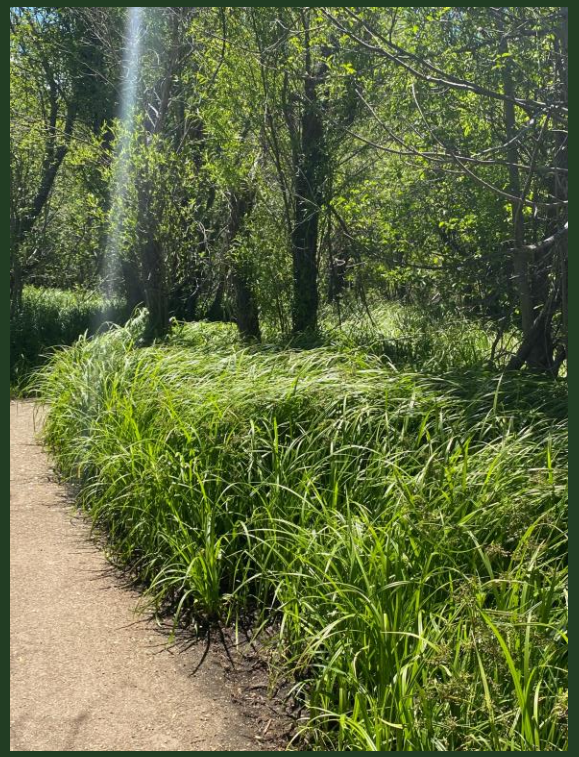

Fig 26.

As we loop back to where we began our walk, we come to an end. Make sure to make any last-minute notes in your journal or drawings of interesting things you saw along the way.

What did you see that we did not discuss? Do you have questions about anything we did nor did not talk about?

There is a large variety of plants and animals that make up this environment with many ecosystems at work.

The Trees like Quaking Aspens and the many Conifers as well. Maybe come here again and enjoy other parts of the trail and the surrounding beauty, don't forget your journal and other necessities.

Thank you for joining me on this journey, it was pleasure of a day.

Dona Olsen
California Naturalist Program Student

Works Cited:

Betteley, Pat. “Beavers: Ecosystem Engineers.” Faces, vol. 35, no. 6, Mar. 2019, p. 6. EBSCOhost, search.ebscohost.com/login.aspx?direct=true&db=ulh&AN=134751875&site=ehost-live.
Additional Information:
Persistent link to this record (Permalink):
http://search.ebscohost.com/login.aspx?direct=true&db=ulh&AN=134751875&site=ehost-live
End of citation-->

Dittbrenner, Benjamin J., et al. “Modeling Intrinsic Potential for Beaver (Castor Canadensis) Habitat to Inform Restoration and Climate Change Adaptation.” PLoS ONE, vol. 13, no. 2, Feb. 2018, pp. 1–15. EBSCOhost, doi:10.1371/journal.pone.0192538.
Additional Information:
Persistent link to this record (Permalink):
http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=128225535&site=ehost-live
End of citation-->