



North Delaney Butte Lake

FISH SURVEY AND MANAGEMENT DATA

Kyle Battige - Aquatic Biologist (Fort Collins)

kyle.battige@state.co.us / 970-472-4396

General Information: North Delaney Butte Lake (160 acres) is a coldwater impoundment on the Delaney Butte State Wildlife Area. Gold medal fishing for Brown, Cutbow, and Rainbow Trout available.
Location: Jackson County, North Park. From Walden, go 1/2 mile west on HWY 14 to CR 12; then go 5.3 miles west to CR 18. Go 4.5 miles west to CR 5 then 1/2 mile north to the SWA.

Recreational Management: Colorado Parks and Wildlife

Fishing Opportunity: Coldwater angling

Purchase a Fishing License: <http://cpw.state.co.us/thingstodo/Pages/Fishing.aspx>

<u>Amenities</u>	<u>Previous Stocking</u>	<u>Sportfishing Notes</u>
<ul style="list-style-type: none"> • Boat Ramp • Pit Restrooms • Camping 	<p style="text-align: center;"><u>2021</u> Brown trout Cutthroat/Rainbow Hybrid</p> <p style="text-align: center;"><u>2020</u> Brown trout Cutthroat/Rainbow Hybrid</p>	<p style="text-align: center;"><u>Spring</u></p> <ul style="list-style-type: none"> • Fish midge patterns to rising fish at ice out • Crawdad and minnow imitations are good early
<p style="text-align: center;"><u>Regulations</u></p> <ul style="list-style-type: none"> • Two trout bag and possession limit • Artificial flies and lures only. Scented flies or lures must be 1.5" or longer • Brown trout 14-20 inches long must be returned to the water immediately • Rainbow and cutthroat trout 18-22 inches long must be returned to the water immediately • Fishing is prohibited from the dam and within 100 feet of the dam from Sept. 15-Nov. 15 • Fishing is prohibited in the inlet upstream of the standing water line • Wakeless boating only • Ice fishing allowed 	<p style="text-align: center;"><u>2019</u> Brown trout Cutthroat/Rainbow Hybrid</p> <p style="text-align: center;"><u>2018</u> Brown trout Cutthroat/Rainbow Hybrid</p> <p style="text-align: center;"><u>2017</u> Brown trout Cutthroat/Rainbow Hybrid</p> <p style="text-align: center;"><u>2016</u> Brown trout Cutthroat/Rainbow Hybrid</p> <p style="text-align: center;"><u>2015</u> Brown trout Cutthroat/Rainbow Hybrid</p>	<p style="text-align: center;"><u>Summer</u></p> <ul style="list-style-type: none"> • Damselfly hatches start in the early summer • Target fish early and late in the day • Fish will tend to be in deeper water midday • Callibaetis hatches occur mid to late summer <p style="text-align: center;"><u>Fall</u></p> <ul style="list-style-type: none"> • Egg patterns become effective, especially for Rainbows • Target Browns cruising shorelines <p style="text-align: center;"><u>Winter</u></p> <ul style="list-style-type: none"> • Use small jigs and flies • Fish different depths until you find the depth fish are in



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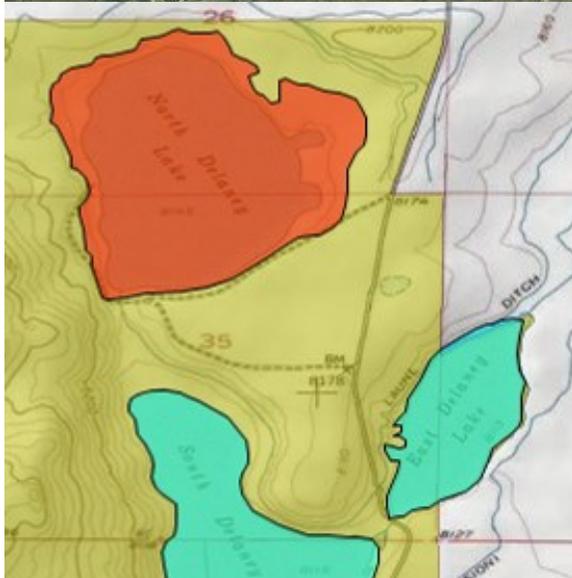
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Management Notes



North Delaney is one of three gold medal lakes in Colorado (Spinney Reservoir and Steamboat Lake are the others). The lake is managed as a brown trout brood lake and is one of two egg sources (Antero Reservoir being the other) that provide eggs for the rest of Colorado. Each year CPW takes around 1,000,000 eggs from brown trout in North Delaney to raise in hatcheries for stocking waters around the state.

Fishing regulations are in place here to protect brown trout in their prime spawning size and age. With the high productivity in the lake, this also provides a great opportunity to catch trophy sized fish, that range up to 25 inches and over 8 pounds.

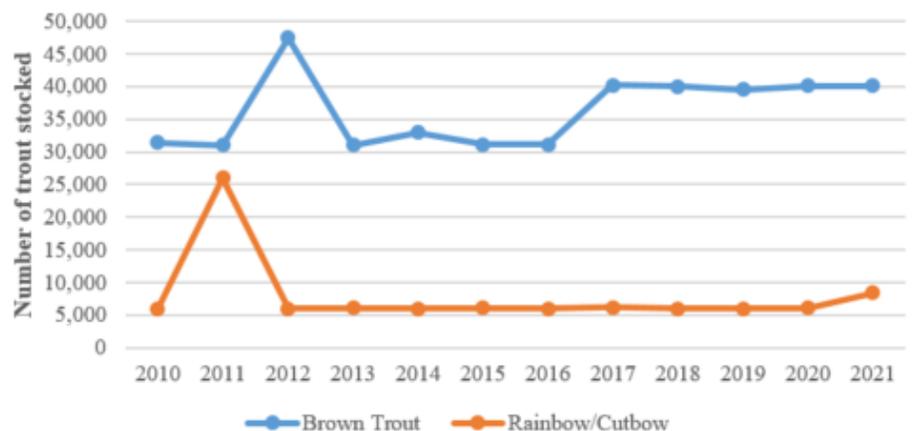


North Delaney is a highly productive body of water and trout grow very quickly here. They prey on a variety of forage including crayfish, minnows, damselflies, mayflies, and chironomids. Brown trout comprise the majority of stocked fish, but cutbows or rainbows, depending on the year, are stocked annually as well. Neither browns or rainbows are able to naturally reproduce in the lake due to a lack of suitable spawning habitat.

CPW increased brown trout stocking to ~40K 3" fish in 2017 as data taken during sampling and spawning efforts suggested an increase in stocking density could be supported. Approximately 6K rainbow/cutbows are stocked each year in North Delaney as well to diversify the angling experience.



North Delaney: Trout Stocking





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Colorado Parks and Wildlife conducts an annual nighttime electrofishing survey at North Delaney to monitor the fishery. This data is used to assess trends and overall health of the fish population. Four electrofishing stations are sampled and are each shocked for 10 minutes. This sampling effort generally takes place in late May or early June. In 2021, sampling showed the species composition was 75% brown trout and 25% rainbow/cutbow. Species composition has shifted over the last six years with a higher percentage of brown trout in the lake, which is desired since it is a brown trout brood lake. In 2011, extra rainbows were stocked in North Delaney due to a pH issue at their intended

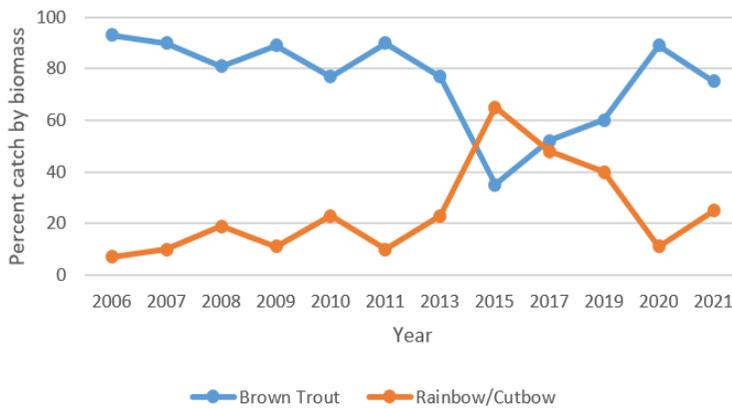
destination. You can see from the figure on the left that those rainbows from 2011 did well, but began phasing out of the lake in 2015. The last couple of years we have returned to a more typical and preferred species composition at North Delaney.

Length frequency data to the left from 2021 shows a relatively healthy distribution of brown trout present in North Delaney with text boxes displaying annual stocking cohorts. A couple of concerning observations is the lack of brown trout sampled during electrofishing in the 10-13" range or 2019 stocking cohort (i.e. 2 year old fish) and the general lack of smaller rainbow/cutbows.

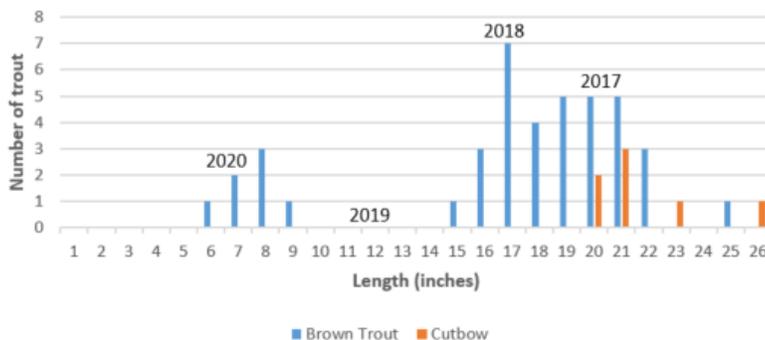
In the lower length frequency histogram you can see length data, broken down by sex, from the October spawning operation overlaid with sampling data from May. Things to note are the presence of that 2019 or 2 year old brown trout cohort which is a great sign. These were all male brown trout which is expected as females do not reach sexual maturity until 3 years old. Seeing this cohort at the spawn was encouraging and suggests they are present in the lake, but not sampled well in May. Although not pictured, 10-15" rainbows were also captured during the spawning operation.

CPW will continue to monitor brown and rainbow trout recruitment with the goal of managing North Delaney as a productive brown trout brood lake and also a quality fishery for both trout species.

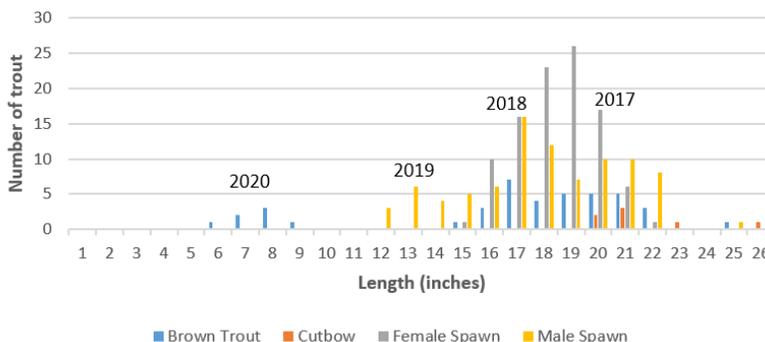
North Delaney: Species Composition



2021 North Delaney: Length Frequency



2021 North Delaney: Length Frequency





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Management Recommendations and Sampling Pictures

- CPW will continue routine sampling to monitor population trends and health of the fishery.
- CPW will continue to stock ~40K brown trout for the next several years to try and further bolster brown trout numbers in the lake and improve egg take in the fall.
- Rainbow/cutbow stocking will continue with ~6,000 individuals annually. Anglers should expect rainbow and cutbow fishing to maintain recent levels for the foreseeable future.

Sampling Pictures: May 2021

Top Right: 172mm or 6.8” brown trout which was stocked in on 6/20, 2020 as a 4.2” fish, showing 2.6” of growth in ~10 months

Middle Row: A 25” (left) and a 22” (right) healthy brown trout

Bottom: A 18” brown trout





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Brown trout Spawn



Every October, CPW sets up a wall tent on the South shore of North Delaney to spawn Brown trout. The tent is our headquarters for the operation and keeps us out of the wind, rain, snow, and sunlight while we take eggs.

The fish are collected from the lake using trap nets. As fish cruise the shore they encounter the lead portion of the net which funnel them into the opening. Here they pass through a series of hoops that allow the fish to go in, but not out. We will set at least a dozen nets around the lake, focusing on the inlet and dam. This is the reason for fall fishing restrictions around the dam and inlet areas.

In the morning, we collect the fish from the



nets by boat and bring them back to holding cages near the tent. Here they are sorted by sex, with males and females in separate cages. Fish not ready to spawn or already past spawning are released back to the lake. Then, the ripe fish are brought up to the tent and anesthetized for a few minutes to calm them down, lower their stress level, and make it easier to strip the eggs from the females.

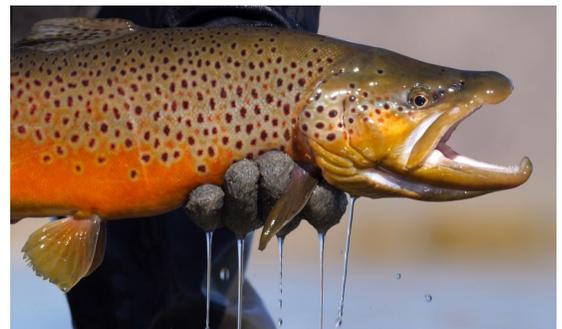


Inside the tent, the females are gently squeezed and the eggs are collected into a dry pan. The males are squeezed and their milt is added to the eggs

(picture to left). Then, water is added to the pan, activating the

sperm in the milt. The sperm are only active for a short period of time so the egg/milt/water mixture is stirred with a feather for ninety seconds to maximize the chances of an egg becoming fertilized.

When this time is up, the eggs are rinsed repeatedly and cleaned to reduce the possibility of fungal infection. Finally, they are placed into coolers and shipped to the hatcheries. After a lot of work from CPW hatchery personnel some of the brown trout eggs taken from North Delaney in October return to the lake the following June and are stocked as ~4" trout.



Check out the video summary of the operation at the link here: <https://www.youtube.com/watch?v=e3E8hyUcBus&t=29s>