



2021 Rio Grande Cutthroat Trout, High-Elevation Lake Sampling Report



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INTRODUCTION AND OBJECTIVE

In Colorado, Rio Grande Cutthroat Trout (RGCT) were designated a state threatened species in 1973, however successful recovery efforts improved conditions for the species to the point that it was downlisted to a species of special concern in 1984. The species is now managed for refugia populations to conserve genetically pure “Core” populations. In addition to Core Conservation populations, 87 waters are managed to provide recreational opportunities. These recreational populations are defined by the genetic purity of the population. Recreational populations of RGCT have been determined to be at least 90% pure but less than 99% pure.

Sixty-six high-elevation lakes in the San Luis Valley are managed to provide recreational angling opportunities for RGCT. The majority of these lakes are very remote and stocked biannually by airplane. The RGCT aerial stocking program began in 1994 but the remoteness of the lakes has made it very difficult to monitor the success of the plants in many of these waters.

In 2018, a 2-person crew was hired to assess the RGCT aerial stocking program. The crew surveyed 15 lakes during the summer of 2018. In 2019 an additional 16 lakes were surveyed. In 2020, all sampling was canceled due to the worldwide covid-19 outbreak. In 2021, an additional 13 lakes were successfully sampled. Each survey consisted of overnight gillnet sets to sample fish populations at each lake. In this report, the sampling effort at each water is summarized and recommendations for future management are suggested.

WATERS SAMPLED

The following lakes were surveyed in 2021: Cottonwood Lake, North Crestone Lake, South Crestone Lake, Green Lake, Jumper Lake, Medano Lake, Ruybalid Lake, Trail Lake, Trout Lake, Middle Ute Lake, Upper West Ute Lake, West Ute Lake, and Willow Creek Lake.



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Fish Sampling Report

Estevan Vigil
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Southwest Region



Water: Cottonwood Lake

Location: Sangre De Cristo Wilderness, 7 miles southeast of Crestone

Sampling Date: 6/23/21

Gear: One 75 foot cold water experimental gill net

Drainage: Rio Grande

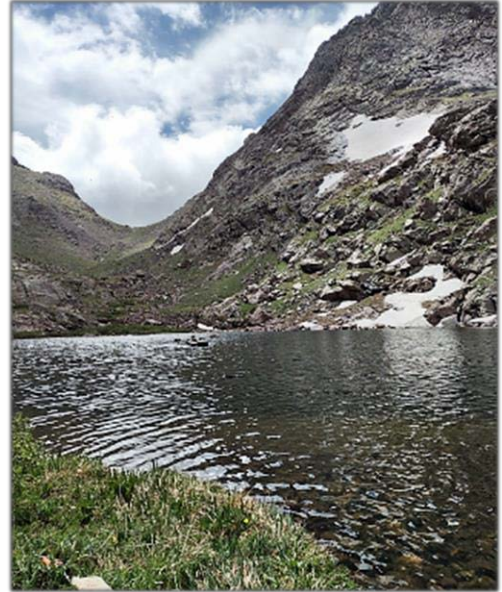
Water Code: 89195

Station: RG0430

UTM Zone: 13S

Easting: 449273

Northing: 4201367



HISTORY

Cottonwood Lake is a three-acre lake located in a small cirque south of the Crestone Needle at 12,300 feet in elevation. It is a natural lake with a maximum depth of 16 feet. Due to the shallow nature of the lake and the elevation this lake has the potential for winter kills.

Cottonwood Lake was periodically stocked with Pikes Peak Native Cutthroat from 1976 until 1983. Snake River Cutthroat were stocked biannually from 1985 until 1993. Stocking of Rio Grande Cutthroat Trout first began in 1995 and they have been stocked biannually since 1998. The lake was last stocked with Rio Grande Cutthroat Trout in 2020.

Cottonwood Lake is located in the Sangre De Cristo Wilderness and is accessible via Cottonwood Creek Trail 861. The trail is very difficult with steep gradients throughout and poor trail marking, making it easy to lose the trail. The distance to Cottonwood Lake from the trailhead is approximately 4.4 miles.

RESULTS

Cottonwood Lake is approximately 80% accessible to angling from the shore. The substrate is dominated by gravel close to shore but as depth increases silt becomes the dominant substrate type. The lake also has some large rocks providing habitat along the shoreline. Caddisflies and diving beetles were noted as the present aquatic invertebrates sampled. There is one inlet on the southeast side. Cottonwood Creek flows out of the lake to the west and flows to a small pond directly below the lake.

One 75 foot cold water gill net was set overnight and fished for 17.2 hours, during which time 6 Rio Grande Cutthroat Trout were sampled resulting in a catch per unit effort of 0.35 fish/hour. Rio Grande Cutthroat Trout were the only species sampled and had an average length of 7.8 inches. The maximum length sampled was 13.1 inches and the minimum size sampled was 4.6 inches. Although few fish were captured, many size classes were apparent in the lake (Fig 1). The average relative weight of sampled fish was 110.4, with a minimum relative weight sampled at 70.1 and a maximum of 163.8. Only one fish was sampled with a relative weight below significantly 93 (Fig 2).

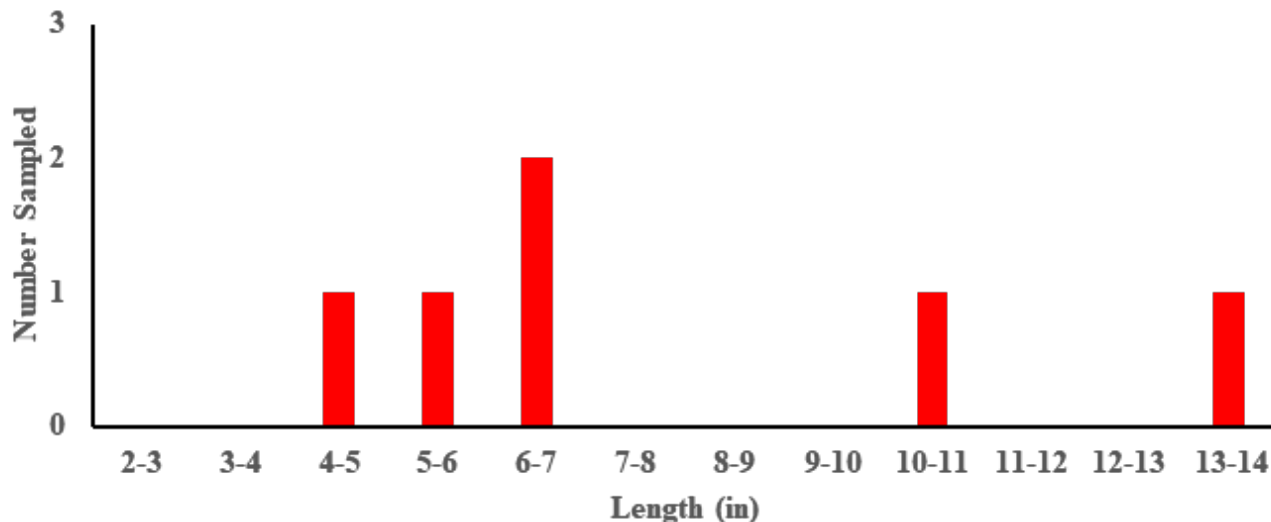


Figure 1. Length-frequency of Rio Grande Cutthroat Trout sampled from Cottonwood Lake, 2021

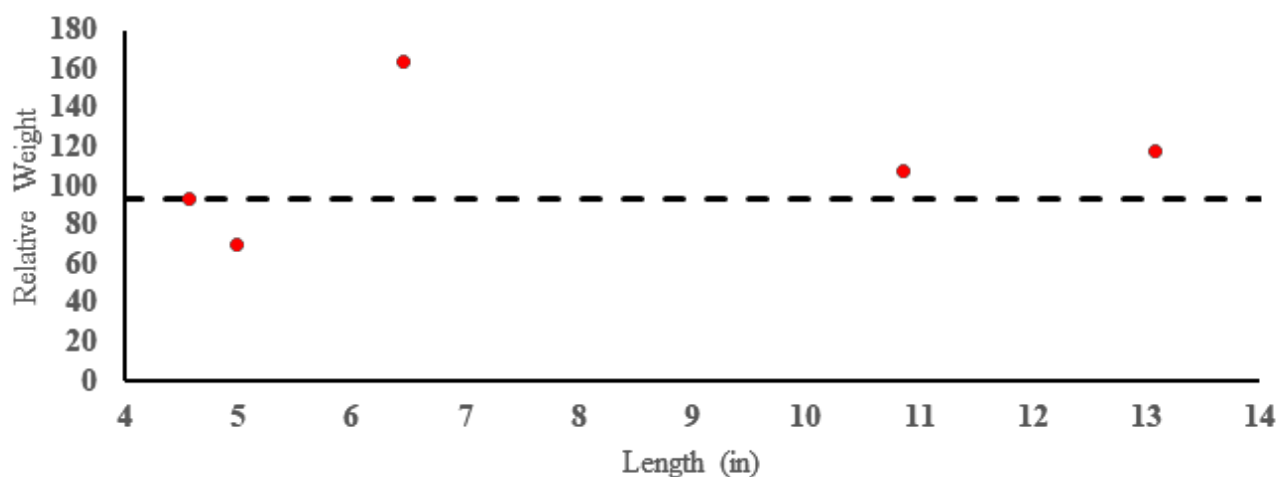


Figure 2. Relative weights of Rio Grande Cutthroat Trout sampled from Cottonwood Lake, 2021

CONCLUSIONS

Cottonwood Lake supports a small population of Rio Grande Cutthroat. Although a small number of fish were sampled, most were in good body condition as shown by the relative weights (Fig. 2). The smaller population size in this lake could be due to angling pressure or partial winter kills due to the shallow depths. The high relative weights and small population size suggest the availability of abundant prey resources. The resources in the lake appear to be able to support a larger fish population and it is suggested that stocking rates are increased in the future. Higher stocking rates should increase the population in the lake but could reduce the condition of the fish. Care should be taken to only increase the stocking rates slightly to increase the population size while maintaining good relative weights.



Fish Sampling Report

Estevan Vigil
Aquatic Biologist
Southwest Region



Water: North Crestone Lake

Location: Sangre De Cristo Wilderness, 5 miles northeast of Crestone

Sampling Date: 7/12/21

Gear: One 75 foot cold water experimental gill net

Drainage: Rio Grande

Water Code: 89296

Station: RG0993

UTM Zone: 13S

Easting: 446622

Northing: 4207758



HISTORY

North Crestone Lake is a 31.6 acre lake located in a glacial cirque at the headwaters of the Lake Fork of Crestone Creek. This natural lake is located at 11,560 feet in elevation with an average depth of 35 feet and a maximum depth of 68 feet. North Crestone Lake was periodically stocked with Pikes Peak Native Cutthroat from 1974 until 1983 before stocking was switched over to Snake River Cutthroat, stocked biannually from 1985 until 1993. Stocking of Rio Grande Cutthroat Trout first began in 1996 and they have been biannually stocked since. The lake was last stocked in 2020.

North Crestone Lake is located in the Sangre De Cristo Wilderness and is accessible via North Crestone Creek Trail 744 off of road Co RD U71. The trail is a difficult trail that runs 5.7 miles with an increase of 3000 vertical feet in elevation. Approximately 1/3rd of the way up the trail there is a sign where the trail splits but it is marked well. At the trail-split stay on Crestone Creek Trail to access North Crestone Lake.

RESULTS

Approximately 60% of North Crestone Lake is accessible to angling from shore. The lake's substrate is composed of mainly large gravel and cobble with some large boulders present. Invertebrates observed at this lake included caddisflies and mayflies. There are two inlets on the south side of the lake, two inlets on the north side of the lake, and one large seep on the east side of the lake. The outlet to the Lake Fork of Crestone Creek is located on the west side of the lake.

One 75 foot cold water gill net was set overnight and fished for 14.7 hours resulting in 30 Rio Grande Cutthroat Trout sampled. The catch per unit effort at this water was 2.0 fish/hour. Rio Grande Cutthroat Trout were the only species sampled and had an average length of 7.4 inches. The maximum length was 17.1 inches and the minimum length sampled was 5.2 inches. Many fish were captured between 5 and 8 inches, with only a few individuals making it to larger size classes (Fig 3). The average relative weight of sampled fish was 98.7, with a minimum relative weight sampled at 46.4 and a maximum of 171.7. Relative weights are seen to have a wide variation at the 5 to 8 inch size class, however, larger individuals all had very high relative weights. (Fig 4).

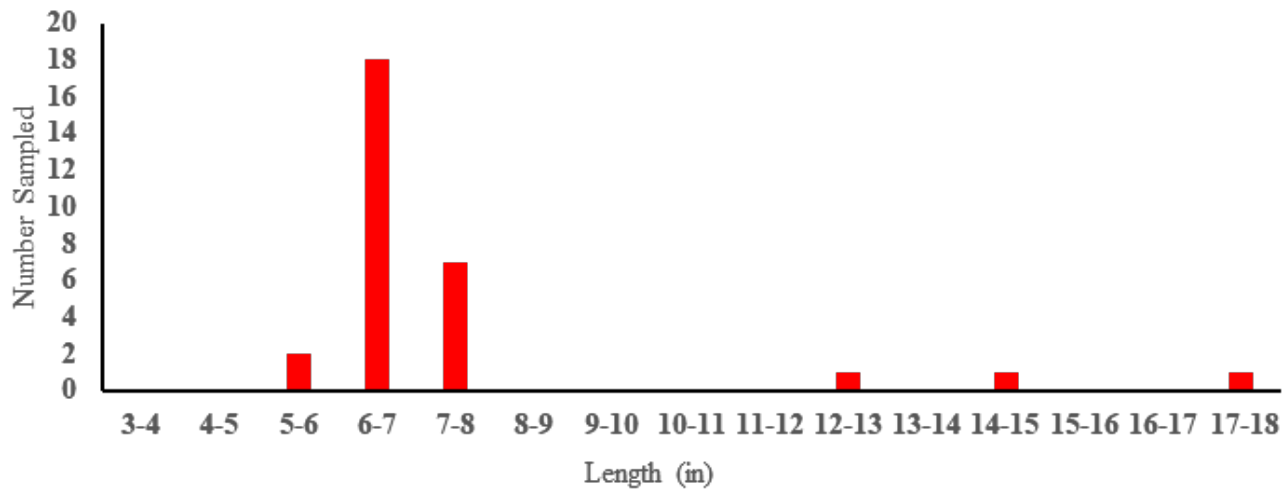


Figure 3. Length-frequency of Rio Grande Cutthroat Trout sampled from North Crestone Lake, 2021

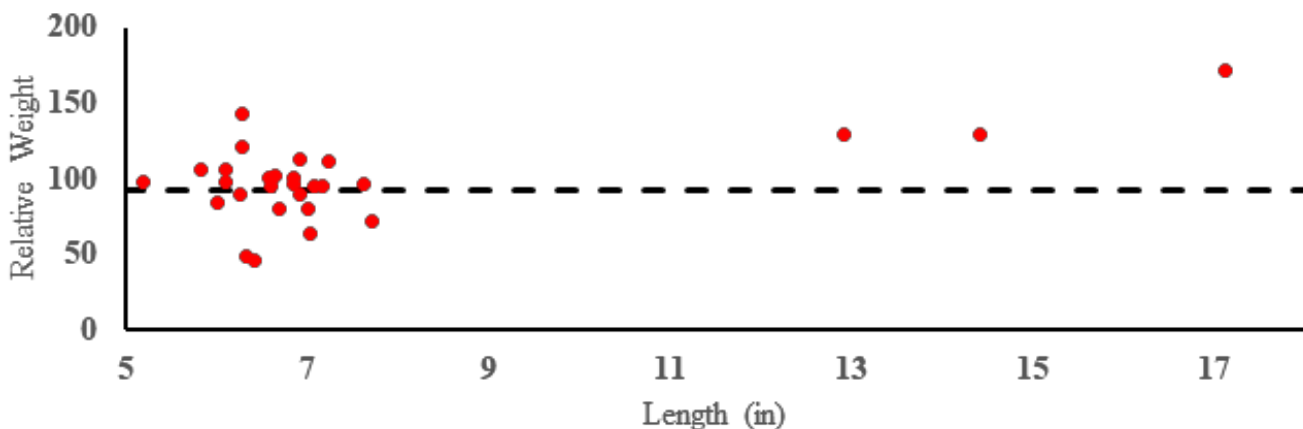


Figure 4. Relative weights of Rio Grande Cutthroat Trout sampled from North Crestone Lake, 2021

CONCLUSIONS

North Crestone Lake supports a good population of Rio Grande Cutthroat Trout. Two cohorts of fish were sampled showing the fish that were stocked in 2020 to be in the 5 to 8 inch size class. All larger fish sampled are remnant of past stocking events. The smaller size class sampled has a wide range of relative weights suggesting a high level of competition for prey resources. The small number of fish sampled from past stocking events suggests a partial winterkill or overharvest of fish. The high relative weights of the large fish sampled are likely due to low levels of competition resulting from the low survival of past stocking events. Although competition appears to be high for the smaller size classes, no change in management is recommended at this time. This lake should be resampled in the near future to determine the survival of the small fish cohort.



Fish Sampling Report

Estevan Vigil
Aquatic Biologist
Southwest Region



Water: South Crestone Lake

Location: Sangre De Cristo Wilderness, 5 miles northeast of Crestone

Sampling Date: 7/14/21

Gear: One 75 foot cold water experimental gill net

Drainage: Rio Grande

Water Code: 89309

Station: RG0431

UTM Zone: 13S

Easting: 445099

Northing: 4207471

HISTORY

South Crestone Lake is an 8.9-acre lake located one drainage south of North Crestone Lake at the headwaters of South Crestone Creek at 11,780 feet in elevation. It is a natural lake with an average depth of 8 feet and a maximum depth of 17 feet. South Crestone Lake was periodically stocked with Pikes Peak Native Cutthroat from 1974 until 1983 before it was switched over to Snake River Cutthroat which were periodically stocked until 1993. Stocking of Rio Grande Cutthroat Trout first began in 1995 and they have been biannually stocked since 1996. The lake was last stocked in 2020.

South Crestone Lake is located in the Sangre De Cristo Wilderness and is accessible via South Crestone Creek Trail 860 off of USFS Road 949. The trail is intermediate difficulty, well-maintained, and easy to follow.

RESULTS

South Crestone Lake is approximately 50% accessible to fish from shore. The lake's substrate is dominated mainly by large rock on the north end and silt near the south end. Caddisflies and mayflies were noted as the present aquatic invertebrates. There is one inlet on the south side of the lake, one seepage on the southeast side of the lake, and the lake's outlet to the South Crestone Creek is located on the northwest shore.

One 75-foot cold water gill net was set overnight and fished for 16.1 hours, during which time 22 Rio Grande Cutthroat Trout were sampled. The catch per unit effort at this water was 1.4 fish/hour. Rio Grande Cutthroat Trout were the only species sampled and had an average length of 11.3 inches. The maximum length sampled was 14.6 inches and the minimum size sampled was 6.6 inches. Fish were captured of many size classes with the largest size class being around 10 to 13 inches in length (Fig 5). The average relative weight of sampled fish was 106.9, with a minimum relative weight sampled at 78 and a maximum of 126. Relative weights are seen to be consistently just above 93 with few fish below a relative weight of 93 (Fig 6).

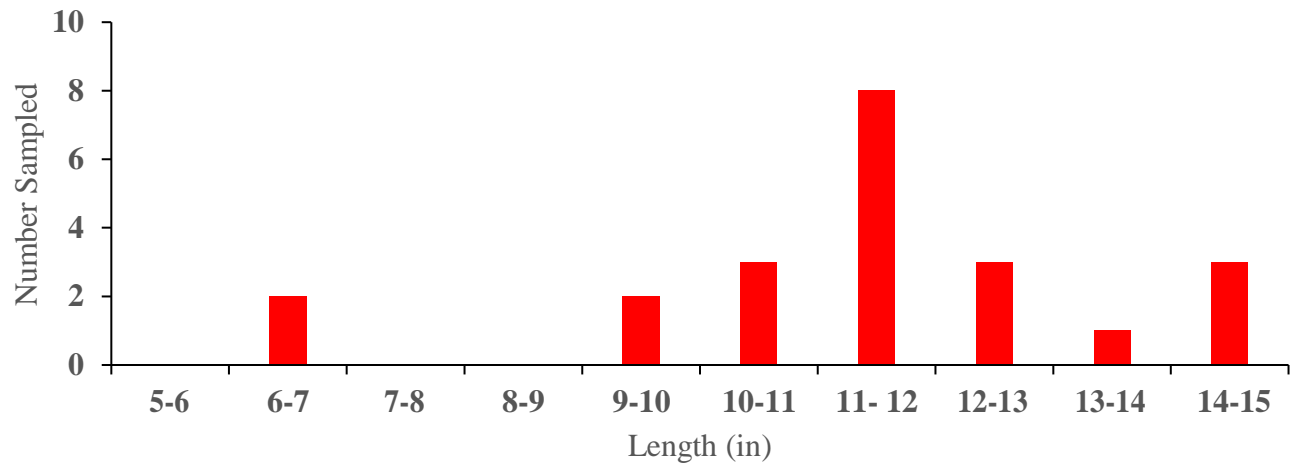


Figure 5. Length-Frequency of Rio Grande Cutthroat Trout sampled from South Crestone Lake, 2021

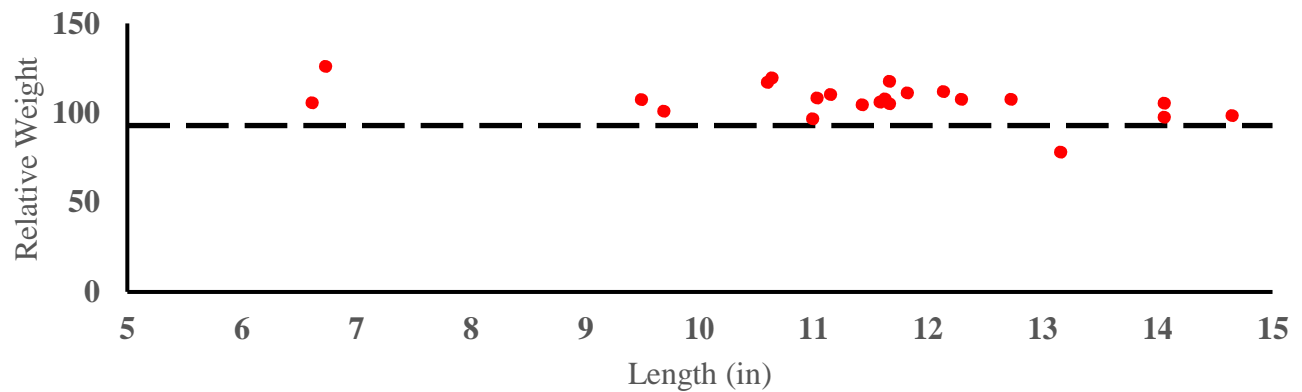


Figure 6. Relative weight of Rio Grande Cutthroat Trout sampled from South Crestone Lake, 2021

CONCLUSIONS

South Crestone Lake supports a good population of Rio Grande Cutthroat. The lake seems to support fish of all size classes at high relative weights and provides a good diversity of fish size. No changes in management are suggested at this time.

Fish Sampling Report

Estevan Vigil
Aquatic Biologist
Southwest Region



Water: Green Lake

Location: Rio Grande National Forest,
Conejos County

Sampling Date: 7/21/21

Gear: One 75 foot cold water experimental
gill net

Drainage: Rio Grande

Water Code: 90251

Station: RG0994

UTM Zone: 13S

Easting: 359311

Northing: 4116506



HISTORY

Green Lake is a 22.7 acre natural lake located in the Rio Grande National Forest in Conejos County near the town of Platoro at 11,580 feet in elevation. It has an average depth of 25 feet and a maximum depth of 32 feet. Green Lake was stocked periodically with Rainbow Trout from 1973 until 1995. The stocking of Rio Grande Cutthroat Trout first began in 1997. The lake was stocked annually from 2000 through 2003 when biannually stocking began. The lake was last stocked in 2021.

Green Lake is a very remote lake located in the Rio Grande National Forest. Getting to Green Lake requires going past multiple trail junctions. There are multiple ways to access the Green Lake trail to the lake. For this sampling event, we started on Ruybalid Trail #855. That trail leads to No Name Lake Trail #728 which you can take to the Alver Jones Cutoff Trail #728-1 and subsequently to Alver Jones Trail #727-1. From there we hiked to Valle Victoria Trail #727 to the Continental Divide Trail which led us to the Green Lake Trail. The trail is low gradient and can become hard to follow in high elevation fields.

RESULTS

Green Lake is approximately 60% accessible to fish from the bank. The lake's substrate is a consistent mix of medium-sized rock and silt. Mayflies and leeches were observed as the present aquatic invertebrates. There are three inlets on the south shore and one outlet on the northeast shore of the lake.

One 75 foot cold water gill net was set overnight and fished for 13.1 hours, during which time 35 Brook Trout were sampled. The catch per unit effort at this water was 2.7 fish/hour. Brook Trout were the only species sampled and had an average length of 10.6 inches. The maximum length sampled was 12.0 inches and the minimum size sampled was 7.2 inches. Fish were captured from multiple size classes with the majority of fish found in the 13-15 inch and 18-19 inch size classes (Fig 7). The average relative weight of sampled fish was 104.1, with a minimum relative weight sampled at 55.8 and a maximum at 131.4. Relative weights for the smaller fish sampled were healthy but as fish start to reach the larger size classes the relative weights decrease (Fig 8).

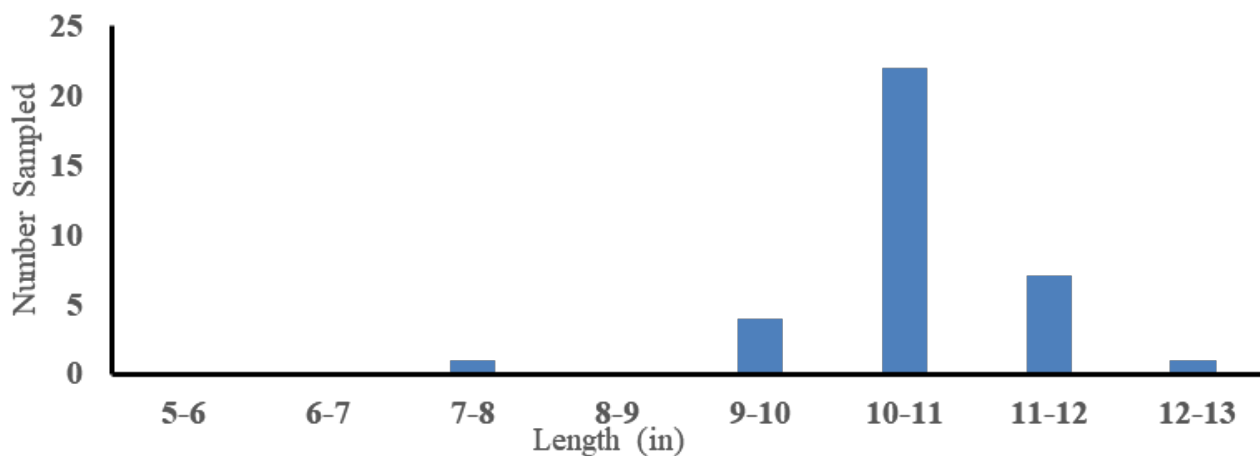


Figure 7. Length-Frequency of Brook Trout sampled from Green Lake, 2021.

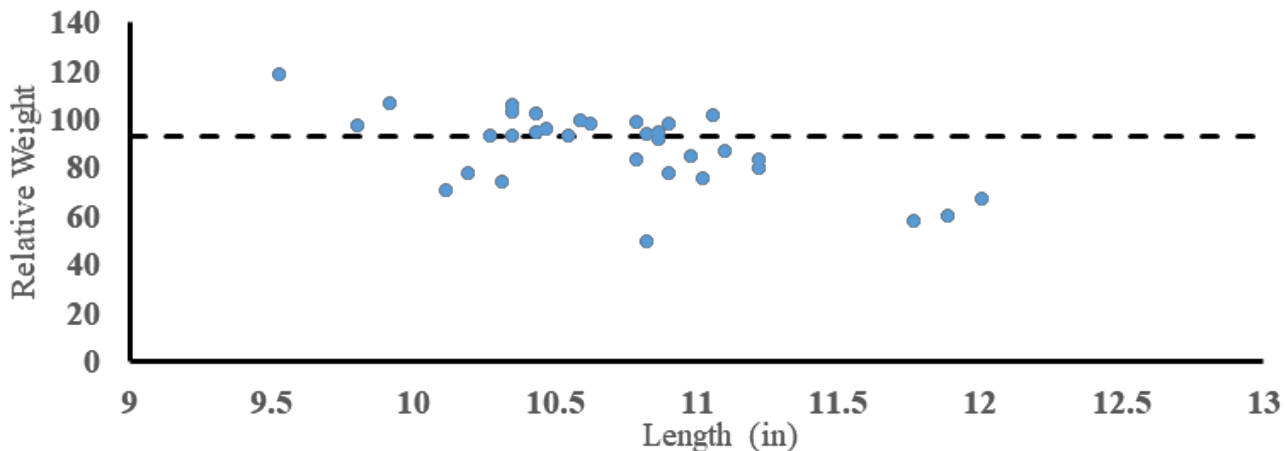


Figure 8. Relative weights of Brook Trout sampled from Green Lake, 2021

CONCLUSIONS

Green Lake supports a large self-sustaining Brook trout population. No Rio Grande Cutthroat Trout were sampled from the lake. The absence of Rio Grande Cutthroat Trout despite continued stocking suggests that the Brook Trout population is outcompeting Rio Grande Cutthroat in this system. The Brook Trout population is healthy and self-sustaining. Due to the inability to establish a Cutthroat Trout population, Green Lake should be removed from the stocking schedule.



Fish Sampling Report

Estevan Vigil
Aquatic Biologist
Southwest Region



Water: Jumper Lake
Location: San Juan Wilderness
Sampling Date: 8/10/21
Gear: One 75-foot cold water experimental gill net
Drainage: Rio Grande
Water Code: 90768
Station: RG0476
UTM Zone: 13S
Easting: 313735
Northing: 4171698

HISTORY

Jumper Lake is an 8.4-acre lake located approximately 15 miles southwest of Creede at an elevation of 11,582 feet. It is a natural lake with a maximum depth of 16 feet, with an average depth of 9 feet. Jumper Lake was periodically stocked with various strains of Cutthroat Trout from 1973 until 1985. Stocking then ceased until 2007. Rio Grande Cutthroat Trout were stocked biannually from 2007 until 2015, at which point all stocking was discontinued due to reports from anglers claiming that the Jumper Lake no longer sustained any Cutthroat Trout.

Jumper Lake is located in the Weminuche Wilderness area. Access to Jumper Lake is limited, as no named trail goes directly to the reservoir. The reservoir is can be reached via a steep unnamed path, which can be located on the Red Lakes Trail. The path is approximately 2.25 miles down from the top of the valley, where Jumper Lake can be seen to the South East. A GPS or map is recommended if trying to reach the reservoir.

RESULTS

Jumper Lake is approximately 70% accessible to fish from the bank. The substrate of the lake consists of medium-sized rock close to shore with silt dominating the substrate at depth. The south shore has many larger rocks, making fishing difficult. Caddisflies, diving beetles, and water striders were seen within the lake while stoneflies were observed in nearby streams. Excellent water clarity was observed, with the Secchi disk being visible at the bottom of the lake.

One 75-foot cold water gill net was set overnight and fished for 15.45 hours, during which 66 Brook Trout were caught. The catch per unit effort with the sampling method at this lake was 4.27 fish/hour. Brook Trout had an average length of 8.9 inches. The maximum length sampled was 12.5 inches and the minimum sampled was 5.7 inches. Several size classes of Brook Trout were observed (Fig 9). The average relative weight of Brook Trout sampled was 93, with a minimum relative weight sampled at 51 and a maximum at 145. Fish of larger lengths appeared to have a lower relative weight than smaller fish (Fig 10).

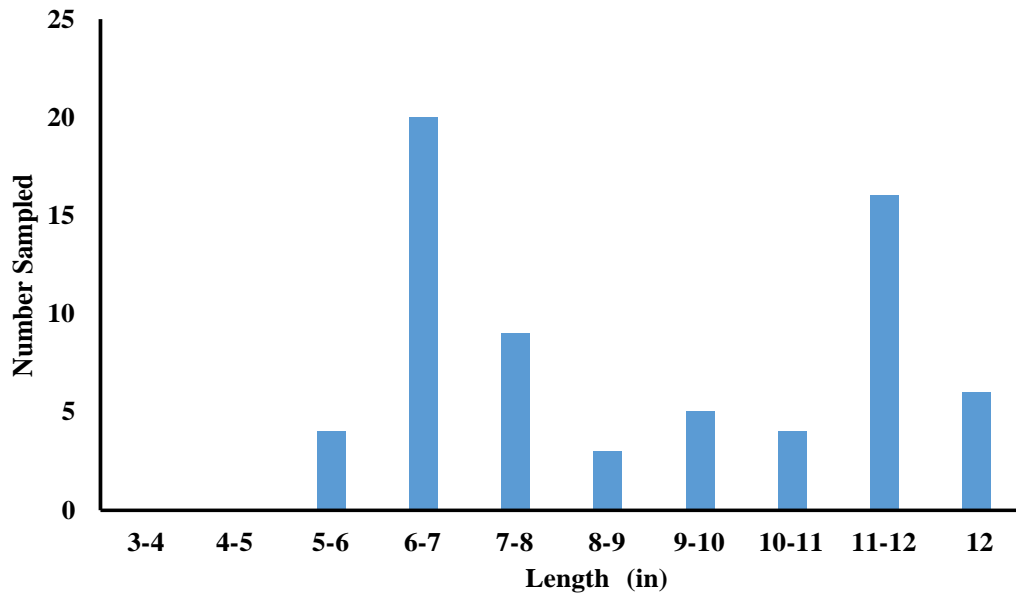


Figure 9. Length-Frequency of Brook Trout sampled from Jumper Lake, 2021.

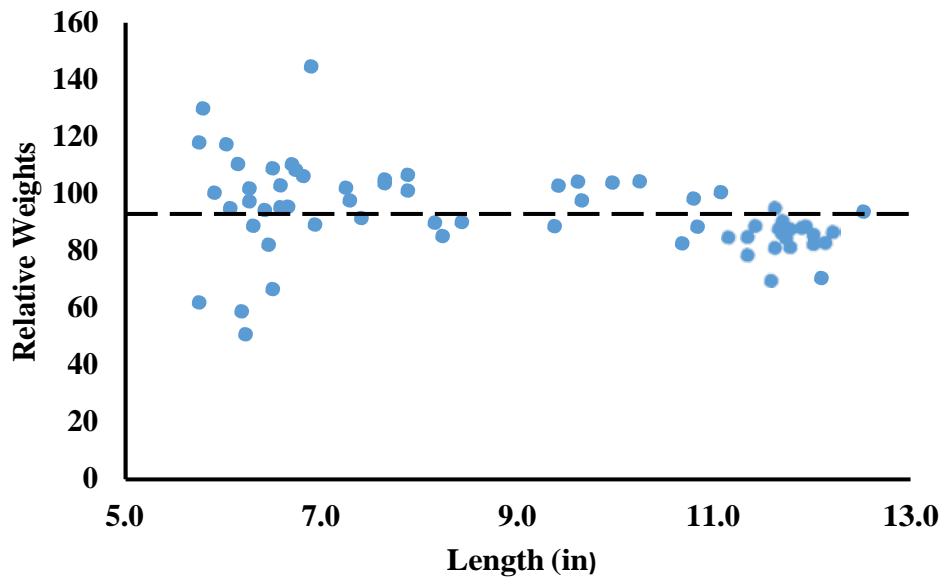


Figure 10. Relative weight of Brook Trout sampled from Jumper Lake, 2021.

CONCLUSIONS

Jumper Lake supports a stunted population of Brook Trout below ideal relative weight. The lake does not appear to winterkill, due to the presence of multiple size classes of sampled trout. The lake possesses decent forage, as well as good water quality which is capable of supporting the population of trout in the lake. Brook trout have dominated this body of water and there are no signs of surviving cutthroat. Due to the remote location of this body of water, the removal of Brook trout via chemical or mechanical means would be difficult, and consequently sustaining a healthy population of Rio Grande Cutthroat trout is improbable and impractical.

Fish Sampling Report

Estevan Vigil
Aquatic Biologist
Southwest Region



Water: Medano Lake
Location: Great Sand Dunes National Preserve
Sampling Date: 6/15/2021
Gear: One 75 foot cold water experimental gill net
Drainage: Rio Grande
Water Code: 93512

Station: RG0354
UTM Zone: 13S
Easting: 457345
Northing: 4190000

HISTORY

Medano Lake is a 2.7 acre lake located at the headwaters of Medano Creek at 11,680 feet in elevation. It is a natural lake with an average depth of 17 feet and a maximum depth of 36 feet. The lake was reclaimed for Rio Grande Cutthroat Trout in 1985. Prior to reclamation, the lake was stocked with Pike Peaks Native Cutthroat in 1974. After reclamation, Rio Grande Cutthroat Trout are stocked in 1987, 1994-1996, 1998, 2001, and then biannually stocked from 2002 until 2016.

Medano Lake is located in the Great Sand Dune National Preserve and can be accessed from Medano Pass Road (4x4) and then hiking Medano Lake Trail to the lake.

RESULTS

Medano Lake is approximately 70% accessible to fish from the bank. The lake's substrate is silt-dominated with some scattered rocks. The east shoreline is comprised mainly of rock. Caddisflies appear to be the primary forage in the lake as they were very abundant. There is one outlet on the north side of the lake and one inlet on the south side.

One 75 foot cold water gill net was set overnight and fished for 12.9 hours, during which time 7 Rio Grande Cutthroat Trout were sampled. The catch per unit effort at this water was 0.54 fish/hour. Rio Grande Cutthroat Trout were the only species sampled and had an average length of 15 inches. The maximum length sampled was 16.7 inches and the minimum size sampled was 13.3 inches. All sampled fish were adults of a large size class (Fig. 11). The average relative weight of sampled fish was 113.1, with a minimum relative weight sampled at 79.8 and a maximum at 145.6 (Fig. 12).

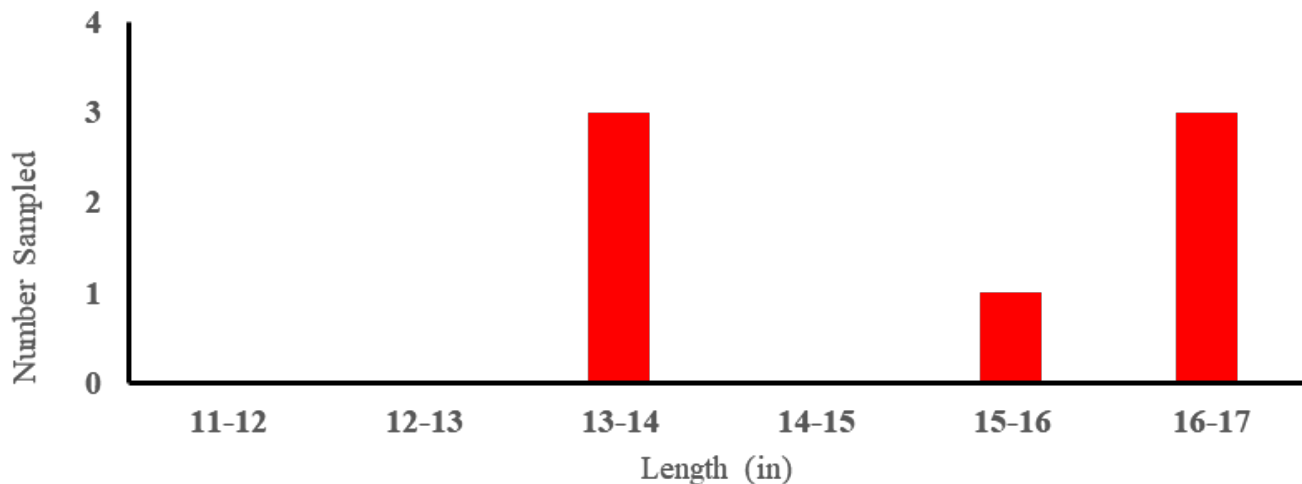


Figure 11. Length-frequency of Rio Grande Cutthroat Trout sampled from Medano Lake, 2021.

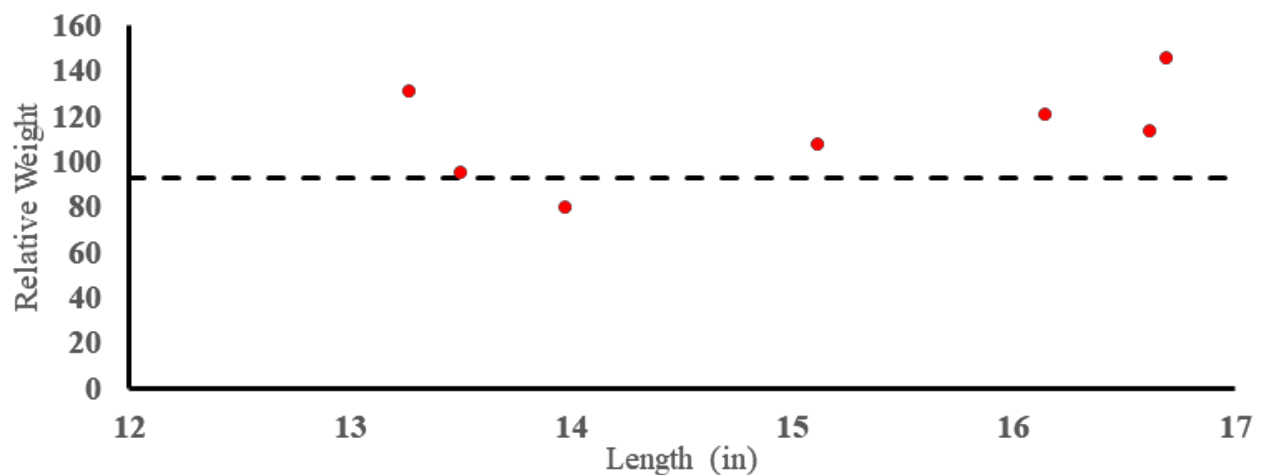


Figure 12. Relative weights of Rio Grande Cutthroat Trout sampled from Medano Lake, 2021.

CONCLUSIONS

Medano Lake continues to support a population of Rio Grande Cutthroat Trout even though it has not been stocked since 2016. The lack of juvenile or small fish suggests a lack of reproduction in the lake. Only a small number of fish were sampled and all but one had high relative weights suggesting low competition in the lake. Continued stocking of this lake will be required to keep a consistent population of fish and increasing stocking numbers to build the population of Rio Grande Cutthroat Trout should be considered. This lake was removed from the stocking schedule because this is a genetically pure conservation population and no genetically pure Rio Grande Cutthroat Trout have been available for stocking due to the rebuilding of the broodstock. Care should be taken to only stock genetically pure fish in the future.

Fish Sampling Report

Estevan Vigil
Aquatic Biologist
Southwest Region



Water: Ruybalid Lake
Location: Rio Grande National Forest, Conejos County
Sampling Date: 7/19/21
Gear: One 75 foot cold water experimental gill net
Drainage: Rio Grande
Water Code: 92104

Station: RG0392
UTM Zone: 13S
Easting: 368924
Northing: 4118445

HISTORY

Ruybalid Lake is a 6.9-acre lake located in the Rio Grande National Forest in Conejos County at 11,180 feet in elevation. It has an average depth of 17 feet and a maximum depth of 33 feet. Ruybalid Lake has a history of winterkills associated with it. Ruybalid Lake was stocked with Pikes Peak Native Cutthroat in 1974 and 1977. Ruybalid Lake was then periodically stocked with Brook trout from 1979 until 1995. Stocking of Rio Grande Cutthroat Trout first began in 2009 and has been biannually stocked since and was last stocked in 2019.

Ruybalid Lake is located in the Rio Grande National Forest and is accessible via Ruybalid Trail 855 off of S Riverview Rd located off Highway 17. The trail is intermediate difficulty, well maintained, and easy to follow.

RESULTS

Ruybalid Lake is approximately 80% accessible to fish from the bank. The lake's substrate is medium to large-sized rock throughout the lake. Caddis, mayflies, scuds, and small damselflies were noted as the present aquatic invertebrates sampled. There were no notable inlets or outlets to Ruybalid Lake.

One 75-foot cold water gill net was set overnight and fished for 14.0 hours, during which time 19 Rio Grande Cutthroat Trout were sampled. The catch per unit effort at this water was 1.4 fish/hour. Rio Grande Cutthroat Trout were the only species sampled and had an average length of 13.9 inches. The maximum length sampled was 22.6 inches and the minimum size sampled was 9.5 inches. Fish were captured of many size classes with the two main size classes being between 13-15 inches and 18-19 inches (Fig 13). The average relative weight of sampled fish was 104.1, with a minimum relative weight sampled at 55.8 and a maximum at 131.4. Relative weights are seen to be consistently around or above 93 with only one fish below a relative weight of 93 (Fig 14).

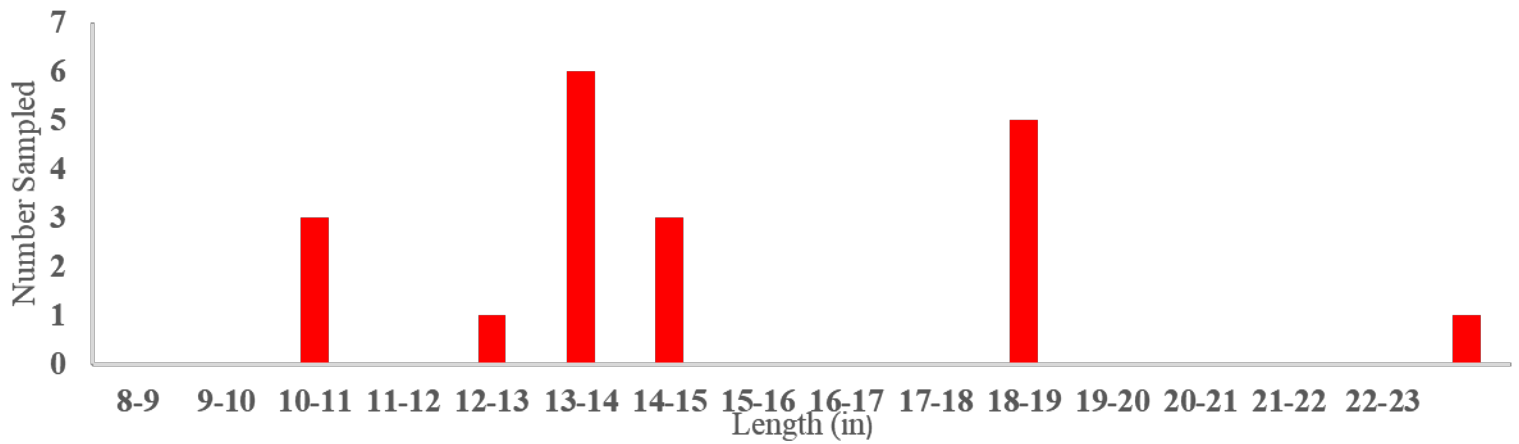


Figure 13. Length-Frequency of Rio Grande Cutthroat Trout sampled from Ruybalid Lake, 2021

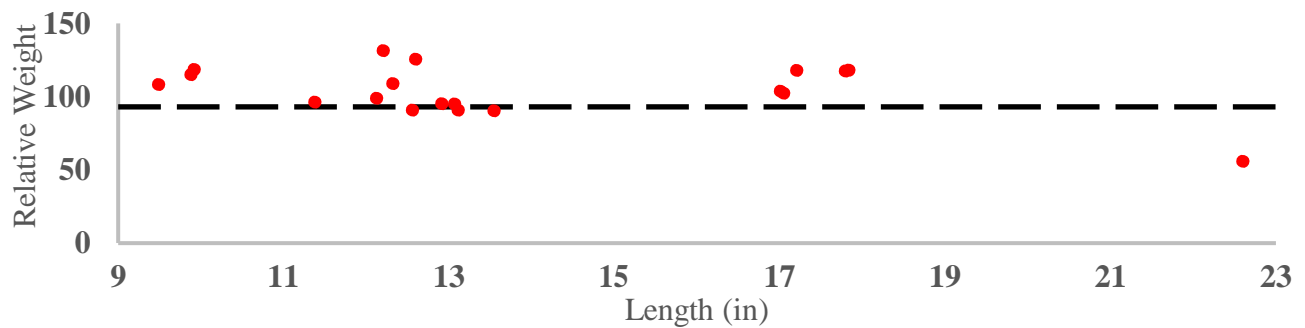


Figure 14. Relative weight of Rio Grande Cutthroat Trout sampled from Ruybalid Lake, 2021

CONCLUSIONS

Ruybalid Lake supports a healthy population of Rio Grande Cutthroat Trout. The lake seems to support fish of all size classes at high relative weights and provides a good diversity of fish size. The lake has the potential for trophy-sized fish and growth rates seem to be extremely high. No changes in management are suggested at this time.

Fish Sampling Report

Estevan Vigil
Aquatic Biologist
Southwest Region



Water: Trail Lake

Location: South San Juan Wilderness

Sampling Date: 7/20/21

Gear: One 75-foot cold water
experimental gill net

Drainage: Rio Grande

Water Code: 92661

Station: RG0387

UTM Zone: 13S

Easting: 358912

Northing: 4113853



HISTORY

Trail Lake is a 29.6-acre lake located approximately 30 miles west of Antonito, adjacent to the Continental Divide Trail at an elevation of 12,000 feet. It is a natural lake with a maximum depth of 29 feet and an average depth of 14 feet. Trail Lake was periodically stocked with various strains of Rainbow Trout from 1973 until 1995 before it was switched over to Rio Grande Cutthroat Trout in 1997. The lake is currently stocked biannually with the last stocking occurring in 2019. Trail Lake was not stocked in 2021 due to the low survival rates of Rio Grande Cutthroat Trout in the hatchery that year.

Trail Lake is located in the South San Juan Wilderness and is accessible from Forest Road 250 via Ruybalid Trail #855 to No Name Lake trail 728 to Alver Jones cutoff trail and finally to Valle Victoria Trail 727. This route begins with approximately 3 miles of switchbacks until elevation gain levels off around 11,000 feet, where it meanders through open fields and high-elevation tundra to the lake. Alternatively, the lake may be accessed from the Continental Divide trail. Camping safely during inclement weather is difficult to as the tree line in most directions from the lake is over a mile away.

RESULTS

Trail Lake is approximately 90% accessible to fish from the bank. The substrate of the lake consists of medium to large-sized rocks close to shore with silt as depth. Caddis and diving beetles were noted as the present aquatic invertebrates observed in addition to grasshoppers and mayflies as terrestrial insects. There is one inlet on the northwest side.

One 75-foot cold water gill net was set overnight and fished for 15.1 hours, during which 19 Rio Grande Cutthroat Trout and 2 brook trout were caught. The catch per unit effort with the sampling method at this lake was 1.39 fish/hour. Rio Grande Cutthroat Trout had an average length of 12.43 inches. The maximum length sampled was 16.61 inches and the minimum size sampled was 6.85 inches. Brook trout sampled had lengths of 14.09 and 12.24 inches.

Several size classes of cutthroat trout were observed (Fig 15). The average relative weight of sampled cutthroat trout was 97.23, with a minimum relative weight sampled at 83.43 and a maximum of 113.28. Regarding brook trout, an average relative weight of 94.22 was observed. Several fish were sampled with a relative weight below significantly 93 (Fig 16) however these fish account for a small proportion of the total fish sampled.

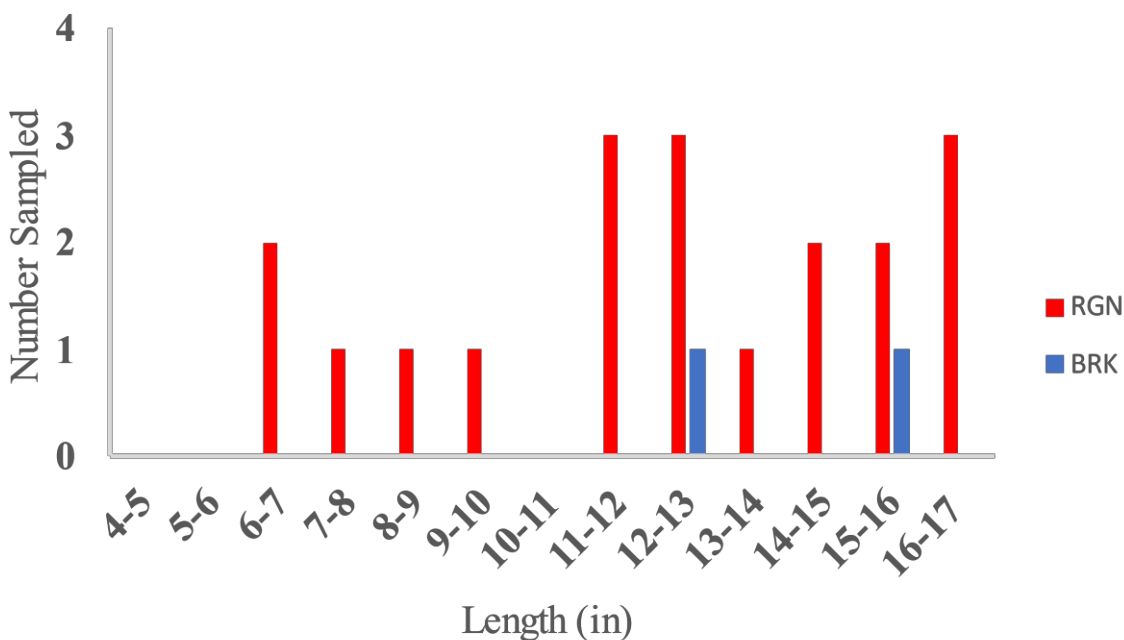


Figure 15. Length-Frequency of Rio Grande Cutthroat and Brook Trout sampled from Trail Lake, 2021

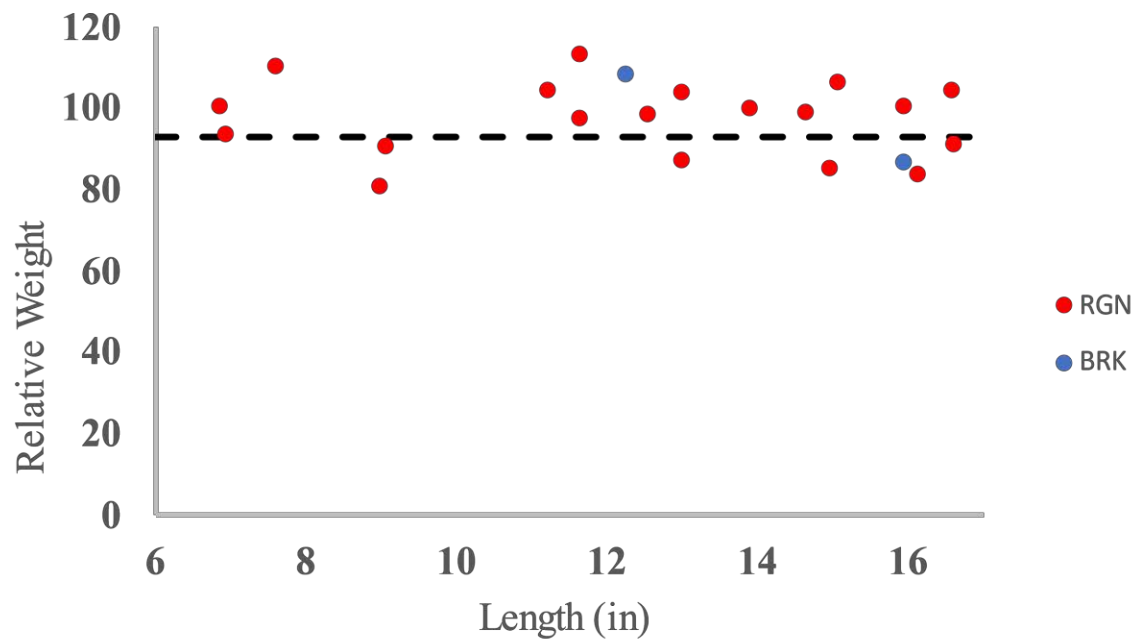


Figure 16. Relative weight of Rio Grande Cutthroat Trout and Brook Trout sampled from Trail Lake, 2021

CONCLUSIONS

Trail Lake supports a healthy population of Rio Grande Cutthroat of good relative weight along with a brook trout population that is less targetable but has large individuals. The lake does not appear to winter kill in its entirety seeing as to how brook trout have been able to persist since their introduction farther in the past even beyond what is noted in stocking records, as well as the presence of several size classes of cutthroat trout. The lake seems to display signs of good forage and water quality to support the current populations of trout in the lake in all seasons. No changes in management are suggested at this time.

Fish Sampling Report

Estevan Vigil
Aquatic Biologist
Southwest Region



Water: Trout Lake

Location: Rio Grande National Forest, 19 miles SW of Creede

Sampling Date: 08/11/21

Gear: One 75-foot cold water experimental gill net

Drainage: Rio Grande

Water Code: 92700

Station: RG0444

UTM Zone: 13S

Easting: 309985

Northing: 4168584

HISTORY

Trout Lake is a 23.7-acre lake in the Rio Grande National Forest in Hinsdale County and sits at 11,800 feet in elevation. It has a maximum depth of 25 feet with an average depth of 17 feet. The lake was notoriously low in previous years due to a dam outflow pipe that was replaced in 2020. The lake has since seemed to return to more proper storage. Trout Lake was periodically stocked with Pikes Peak Native Cutthroat from 1973 till 1980 before it was switched over to Snake River Cutthroat which were periodically stocked until 1991. Stocking of Rio Grande Cutthroat Trout first began in 1994 and has been biannually stocked since 2007 and was last stocked in 2021.

Trout Lake is accessed off of West Trout Trail 895. The trail starts off forest service road 523 and is approximately 5.8 miles long. Good camping is accessible at Trout Lake.

RESULTS

Trout Lake is approximately 80% accessible to fish from the bank. The lake's substrate is sand with medium-sized rock with scattered boulders throughout the lake. Caddis and midges were noted as the present aquatic invertebrates sampled. There is one inlet on the east side, three small inlets on the west side, and one outlet on the north side of the lake.

One 75-foot cold water gill net was set overnight and fished for 15.7 hours, during which time 28 Rio Grande Cutthroat Trout were sampled. The catch per unit effort at this water was 1.8 fish/hour. Rio Grande Cutthroat Trout were the only species sampled and had an average length of 11.2 inches. The maximum length sampled was 13.2 inches and the minimum size sampled was 9.0 inches. There was little size variance in the lake with all fish being between 9 to 13 inches (Fig. 17). The average relative weight of sampled fish was 100.8, with a minimum relative weight sampled at 70.9 and a maximum at 126.0. Relative weights were mostly above 93 and very few outliers were seen in the system (Fig. 18).

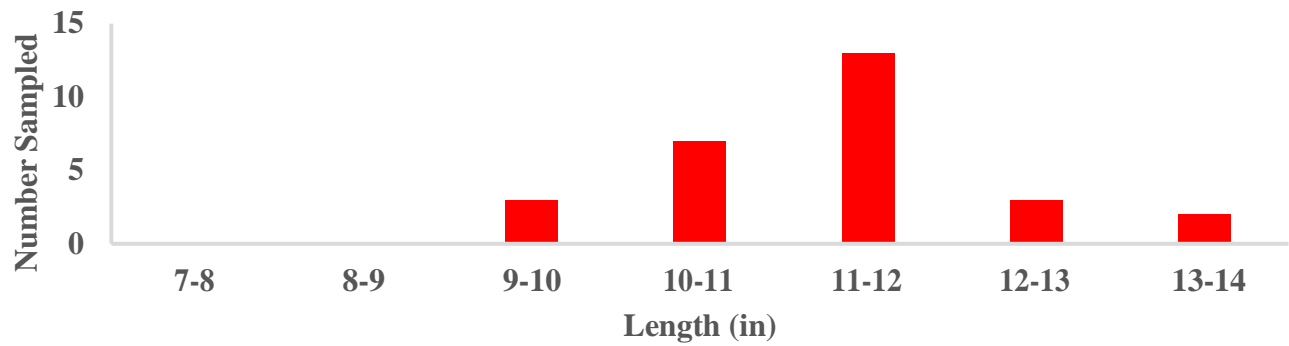


Figure 17. Length-Frequency of Rio Grande Cutthroat Trout in Trout Lake, 2021

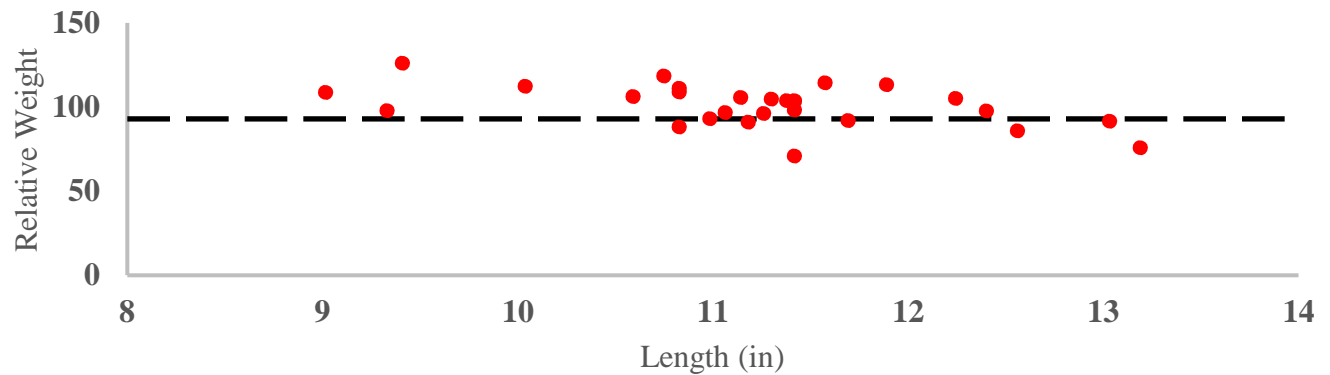


Figure 18. Relative weights of Rio Grande Cutthroat Trout in Trout Lake, 2021

CONCLUSIONS

Trout Lake supports a healthy population of Rio Grande Cutthroat. The lake has shown much better water retention since the outflow pipe was repaired. The lake seems to show signs of adequate amounts of resources to support the current populations of trout in the lake. Due to the good population of fish and above-average relative weights no changes in management are suggested at this time.

Fish Sampling Report

Estevan Vigil
Aquatic Biologist
Southwest Region



Water: Middle Ute Lake
Location: Weminuche Wilderness
Sampling Date: 8/5/21
Gear: One 75 foot cold water experimental gill net
Drainage: Rio Grande
Water Code: 92825
Station: RG0469
UTM Zone: 13S
Easting: 281613
Northing: 4169775

HISTORY

Middle Ute Lake is an 11.4-acre natural lake at 12,000 feet located approximately 33 miles west of Creede, adjacent to the Continental Divide Trail. Middle Ute Lake was periodically stocked with various strains of Cutthroat Trout since 1974. Starting in 1995 Rio Grande Cutthroat Trout have been stocked biannually. The last stocking event occurred in 2019. The lake was not stocked in 2021 due to high levels of mortality experienced within the hatchery.

Middle Ute Lake is located in the Weminuche Wilderness and is accessible from County Road 18. The trailhead is located at the western end of the Rio Grande Reservoir. Ute Creek trail 819 can be taken nearly all the way to the lake, however, the trail never arrives at the lake. As such, 500 yards of willows must be crossed in order to access the lake from most directions. The one-way travel distance from the trailhead to the lake is approximately 13 miles. The lake is located above timberline and has no well-established campsites within a half-mile.

RESULTS

Middle Ute Lake is approximately 90% accessible to anglers from the bank and is surrounded on most sides by low to waist-high willows with a shoreline of medium-sized rocks. The substrate of the lake consists of gravel to medium-sized rocks close to shore with silt increasing with depth. Caddisflies, leeches, diving beetles, and snail eggs were observed in the water. There are three very small inlets on the southwestern side of the lake, though none are large enough for natural reproduction.

One 75-foot cold water gill net was set overnight and fished for 12.7 hours, during which 7 Rio Grande Cutthroat Trout were caught. The catch per unit effort with the sampling method at this lake was 0.55 fish/hour. Rio Grande Cutthroat Trout had an average length of 11.09 inches. The maximum length sampled was 14.33 inches and the minimum size sampled was 8.54 inches. Three size classes of cutthroat trout were observed (Fig 19). The average relative weight of sampled cutthroat trout was 113.42, with a minimum relative weight sampled at 69.21 and a maximum at 118. No fish were sampled with a relative weight significantly below 93 (Fig 20).

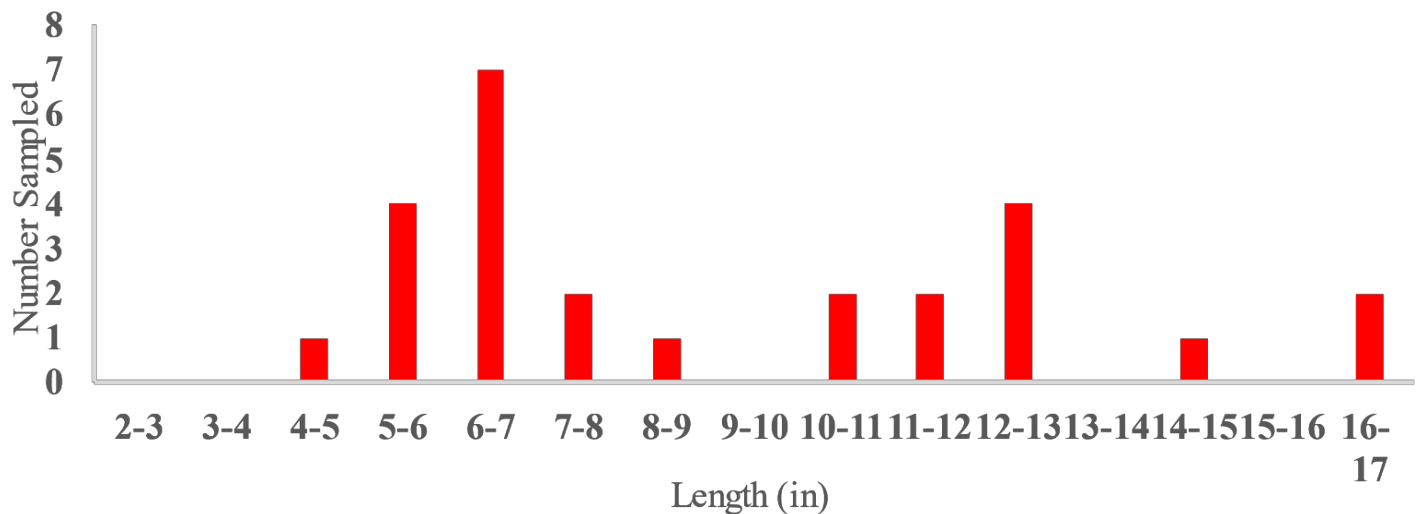


Figure 19. Length-frequency of Rio Grande Cutthroat Trout sampled from Middle Ute Lake, 2021.

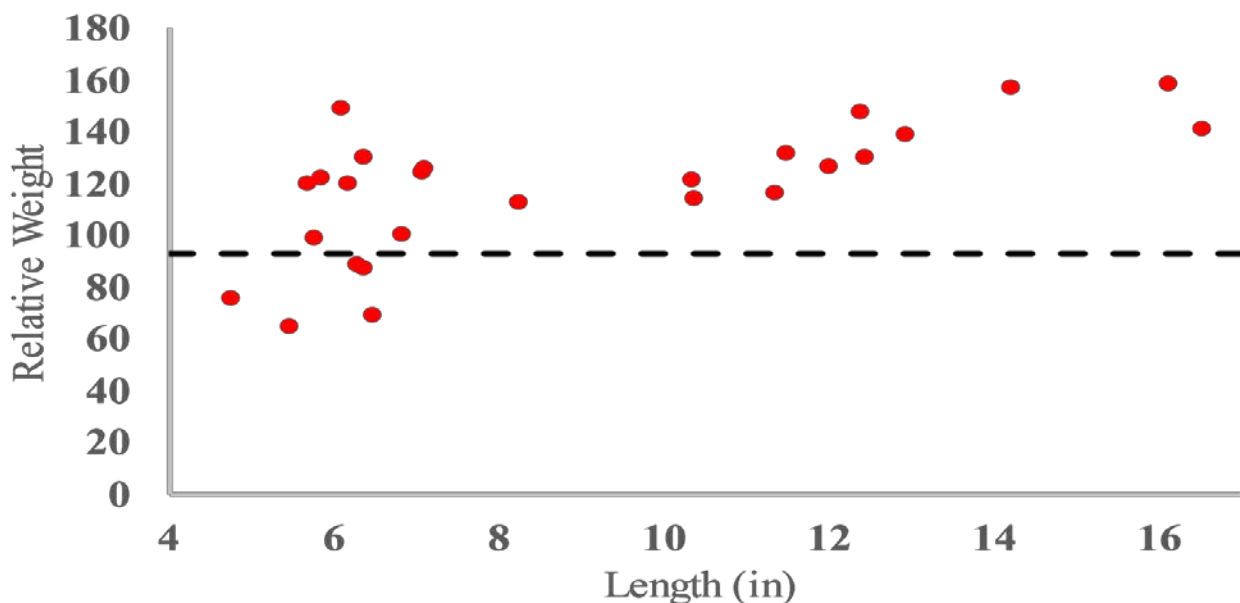


Figure 20. Relative weights of Rio Grande Cutthroat Trout sampled from Middle Ute Lake, 2021.

CONCLUSIONS

Middle Ute Lake supports a small population of Rio Grande Cutthroat Trout all of which were in good condition as shown by the relative weights of the fish sampled. The catch per unit effort was low suggesting a small population. Given the low catch per unit effort and the large relative weights, the lake could likely support a slightly higher stocking rate. At this time it is recommended that the stocking rate be increased slightly and the population monitored in the future to ensure quality size fish are maintained.

Fish Sampling Report

Estevan Vigil
Aquatic Biologist
Southwest Region



Water: Upper West Ute Lake

Location: Weminuche Wilderness, Rio Grande National Forest

Sampling Date: 8/4/21

Gear: One 75 foot cold water experimental gill net

Drainage: Rio Grande

Water Code: 92863

Station: RG0466

UTM Zone: 13S

Easting: 279894

Northing: 4173825

HISTORY

Upper West Ute Lake is a 4.7 acre natural lake located in the Rio Grande National Forest in the Weminuche Wilderness area at 12,326 feet in elevation. It has an average depth of 20 feet and a maximum depth of 36 feet. Upper West Ute Lake was stocked periodically with Pikes Peak Native Cutthroat Trout from 1974 until 1980. In 1981 Snake River native Cutthroat began to be stocked and were until 1995. Stocking of Rio Grande Cutthroat Trout first began in 1996. The lake was stocked in 1997 and from 2000 through 2003 and has been biannually stocked since and was last stocked in 2019.

Upper West Ute Lake is located in the Weminuche wilderness of the Rio Grande National Forest. Access to the lake is best by taking Ute Creek Trail 819 to West Ute Creek Trail 825 to the Continental Divide Trail. The lake is approximately 300 yards off of the trail. The trail is low gradient and is relatively easy to follow.

RESULTS

Upper West Ute Lake is approximately 90% accessible to fish from the bank. The lake's substrate is small to medium-sized rock on the north shore transitioning to large rock on the western shore with silt out in deeper areas of the lake. Caddis and diving beetles were noted as the present aquatic invertebrates sampled. There were no notable inlets or outlets observed. The lake had very high visibility with a Secchi disk measurement of 21 feet.

One 75-foot cold water gill net was set overnight and fished for 13.4 hours and captured 0 fish. No fish were seen from shore during the sampling and no signs of fish activity were seen.

CONCLUSIONS

Due to the high elevation of Upper West Ute Lake, the lack of inlets, and no fish being sampled it is assumed that this lake has a high probability of winter kills. Due to the lack of severity of the previous two winters and Rio Grande Cutthroat Trout being stocked in the summer of 2019 winter kills may be more probable than not. For this reason, Upper West Ute Lake should be removed from the stocking schedule for Rio Grande Cutthroat Trout.

Fish Sampling Report

Estevan Vigil
Aquatic Biologist
Southwest Region



Water: West Ute Lake
Location: San Juan Wilderness
Sampling Date: 8/3/21
Gear: One 75-foot cold water experimental gill net
Drainage: Rio Grande
Water Code: 92851
Station: RG0467
UTM Zone: 13S
 Easting: 281258
 Northing: 4172007

HISTORY

West Ute Lake is a 16.1-acre lake located 33 miles west of Creede at an elevation of 11,807 feet. It is a natural lake with a maximum depth of 38 feet. West Ute Lake was periodically stocked with various strains of cutthroat trout from 1974 till 1985. Stocking then ceased until 2001, at which point only Rio Grande Cutthroat trout have been stocked since. Last stocking effort was undertaken in 2019.

West Ute Lake is located in the San Juan Wilderness and is accessible from Co Rd 18 via Ute trail and then West Ute trail, totaling 12.4 miles from trailhead to lake. This route is easily navigated, as the trail is very clearly marked. In addition, the trail itself does not possess many sections that are physically demanding and could be considered a trail of moderate difficulty. The Northwest side of the lake has a decent number of trees and flat areas to camp.

RESULTS

West Ute Lake is approximately 95% accessible to fish from the bank. The substrate of the lake consists of small to medium sized rocks close to shore with silt at depth. Caddis and snails were noted as the present aquatic invertebrates observed in addition to grasshoppers and mayflies as terrestrial insects. There is one inlet on the southwest side that could possibly facilitate natural reproduction.

One 75-foot cold water gill net was set overnight and fished for 16.1 hours, during which 9 Rio Grande Cutthroat Trout were caught. The catch per unit effort with the sampling method at this lake was 0.56 fish/hour. Rio Grande Cutthroat Trout had an average length of 11.93 inches. The maximum length sampled was 15.71 inches and the minimum sampled was 7.71 inches. Several size classes of cutthroat trout were observed (Fig 21). The average relative weight of sampled cutthroat trout was 83.8, with a minimum relative weight sampled of 66.4 and a maximum of 102.8. The majority of fish sampled possessed a relative weight below 93 (Fig 22).

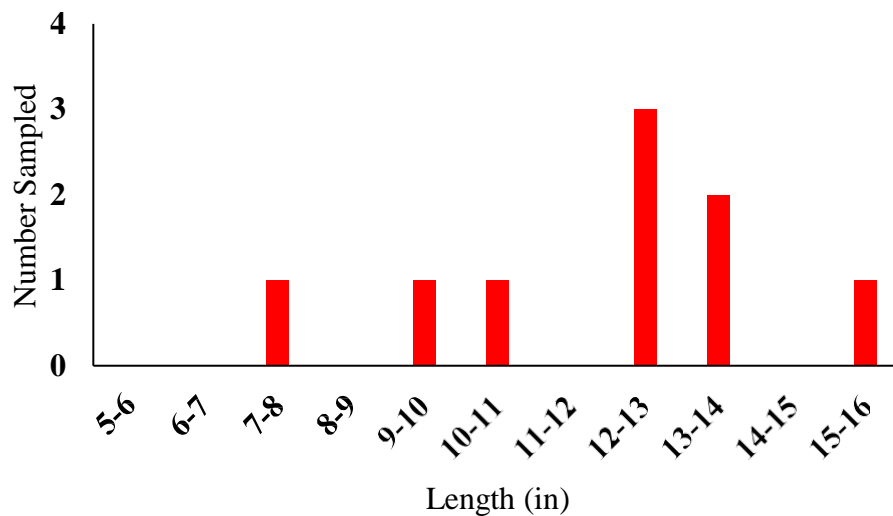


Figure 21. Length-Frequency of Rio Grande Cutthroat sampled from West Ute Lake, 2021

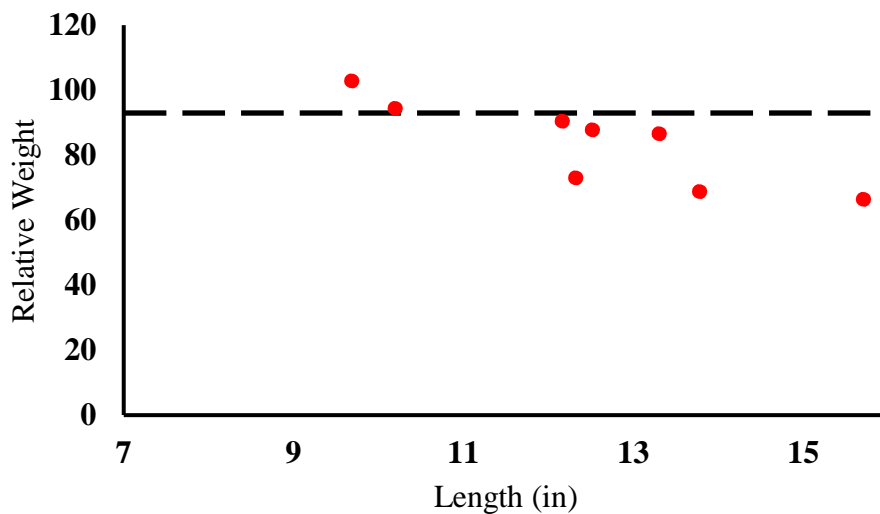


Figure 22. Relative weight of Rio Grande Cutthroat Trout sampled from West Ute Lake, 2021

CONCLUSIONS

West Ute Lake supports a small population of Rio Grande Cutthroat below ideal relative weight. The lake does not appear to winterkill, due to the presence of multiple sizes of sampled trout. The lake possesses decent forage, as well as good water quality which is capable of supporting the population of trout in the lake throughout every season. No changes in management are suggested at this time.

Fish Sampling Report

Estevan Vigil
Aquatic Biologist
Southwest Region



Water: Willow Lake

Location: Sangre De Cristo Wilderness

Sampling Date: 7/28/21

Gear: One 75 foot cold water experimental gill net

Drainage: Rio

Grande **Water**

Code: 93093

Station: RG0461

UTM Zone: 13S

Easting: 446612

Northing: 4205129

HISTORY

Lower Willow Lake is a 29.6-acre lake at 12,000 feet located 5 miles east of Crestone, adjacent to Challenger Point and Kit Carson Peak. It is a natural lake of 19.8 acres with a maximum depth of 46 feet. Lower Willow Lake was periodically stocked with various strains of cutthroat trout from 1974 before it was switched over to recreational grade Rio Grande Cutthroat Trout in 1995 which has since been stocked biannually following 2002. The last stocking was undertaken in 2021.

Lower Willow Lake is located in the Sangre de Cristo Wilderness and is accessible from the easternmost end of USFS Road 949 at the South Crestone trailhead. The lake is approximately 5 miles up Willow Lake Trail 865.

Camping 300ft from the lake edge is prohibited, however, accessible and established camping spots exist lower on the trail. The trail is dominated by switchbacks for well over 4 miles.

Alternatively, the lake may be accessed from the east side of the Sangre de Cristo Mountain range via the South Colony Lakes Trail.

RESULTS

Lower Willow Lake is approximately 50% accessible to fish from the bank due to the easternmost side being a cliff and large rocks occupying most of the shoreline. The substrate of the lake consists of medium to large-sized rocks close to shore with silt as depth as well as many branches on the western side. Caddis were noted as the present aquatic invertebrates observed in addition to many different species of terrestrial insects. There are two inlets on the western side as well as one outlet on the east side, all in the form of waterfalls.

One 75-foot cold water gill net was set overnight and fished for 15.1 hours, during which 26 Rio Grande Cutthroat Trout were caught. The catch per unit effort with the sampling method at this lake was 1.72 fish/hour. Rio Grande Cutthroat Trout had an average length of 12.43 inches. The maximum length sampled was 16.53 inches and the minimum size sampled was 4.76 inches. Several size classes of Cutthroat Trout were observed (Fig 23). The average relative weight of sampled cutthroat trout was 97.23, with a minimum relative weight sampled at 69.21 and a maximum at 118.118. Several fish were sampled with a relative weight significantly below 93 (Fig 24) however these fish account for a small proportion of the total fish sampled.

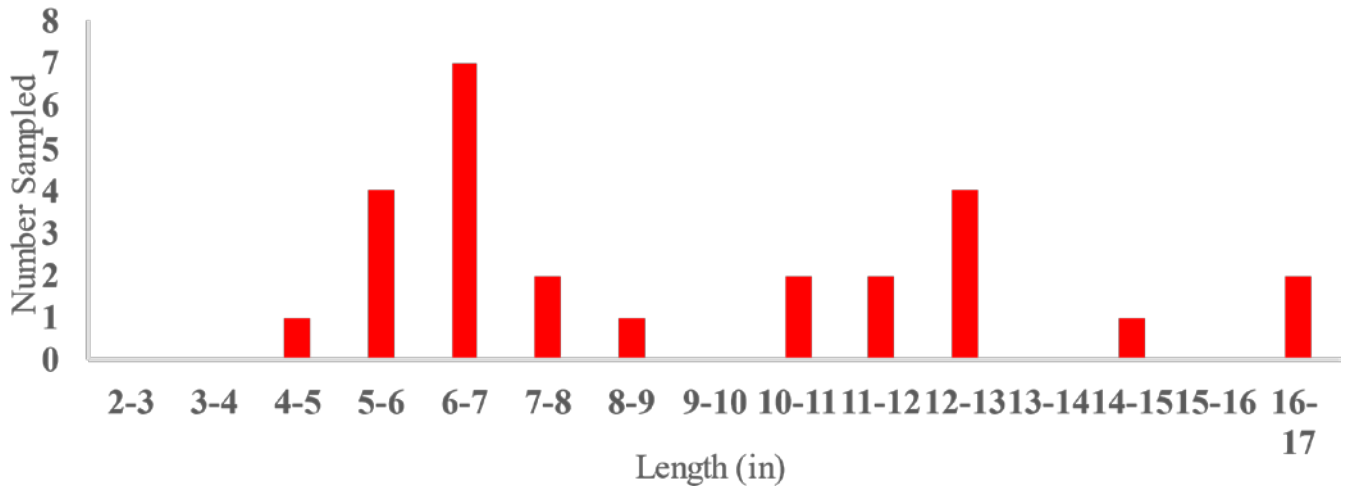


Figure 23. Length-Frequency of Rio Grande Cutthroat Trout sampled from Lower Willow Lake, 2021.

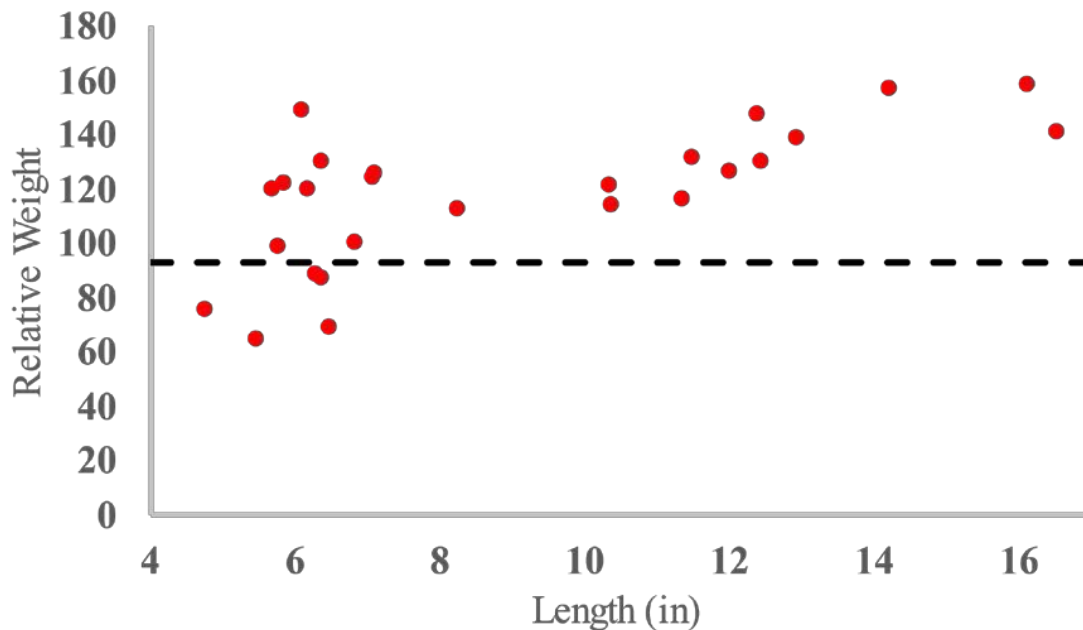


Figure 24. Relative weights of Rio Grande Cutthroat Trout sampled from Lower Willow Lake, 2021.

CONCLUSIONS

Lower Willow Lake supports a healthy population of Rio Grande Cutthroat of good relative weight. The lake does not appear to winter kill seeing as there are many size classes of trout. The lake seems to display signs of good forage and water quality to support the current populations of trout in the lake during the warmer seasons, and the lake's size appears to prevent significant winterkill allowing the continued growth of the fish in it. No changes in management are suggested at this time.