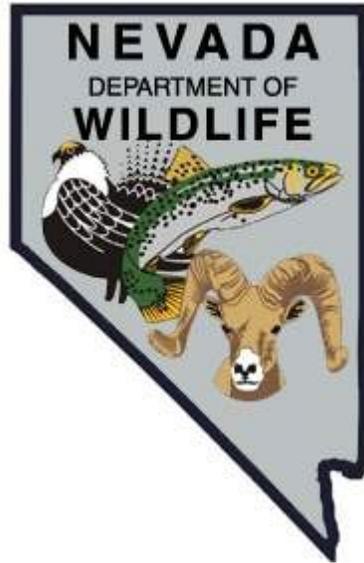


NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS
F-20-54
2018

WHITE PINE COUNTY
Small Lakes and Reservoirs
Eastern Region



**NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
ANNUAL PROGRESS REPORT**

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**NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
ANNUAL PROGRESS REPORT**

State: *Nevada*
Project Title: *Statewide Fisheries Program*
Job Title: *White Pine County Small Lakes and Reservoirs*
Period Covered: *January 1, 2018 through December 31, 2018*

SUMMARY

Spring frame net surveys at Bassett Lake revealed bluegill stocked in 2017 doubled in length and weight. Fluctuating water levels prevented summer electroshocking surveys; however, angler contacts suggest bass and trout continue to do well in the lake. Fall 2018 marked the first trout stocking in Bassett Lake since the fall of 2015.

During 2018, Cave Lake was stocked with 21,633 rainbow trout from April through October that averaged 9.8 in. The lake was surveyed utilizing boat electroshocking, which once again showed poor carryover of rainbow trout, but found a strong younger age class of brown trout.

At Illipah Reservoir, there was an increase ($n=61$) in volunteer angler surveys submitted in the drop-box this year. This was the first increase in angler responses in four years. The spring 2018 frame net survey showed reasonable carryover of rainbow trout, with several individuals representing older age classes. One management concern was low age class structure in brown trout. There was only a single two-year old brown trout caught and several older brown trout captured. Length frequency analyses show that the brown trout population was missing several age classes. This could be attributed to the extended period of drought that most of the western United States had experienced. In addition, the drawdown of water for irrigation and stock water creates negative impacts to the fishery at Illipah Reservoir.

Silver Creek Reservoir was monitored for coordinating trout stocking and for maintaining the volunteer angler drop-box. Unfortunately, due to a poor winter snow pack resulting in a low water level, Silver Creek Reservoir was not stocked in 2018.

BACKGROUND

Bassett Lake

Bassett Lake is located 22 mi northwest of Ely, Nevada in White Pine County. It is a manmade reservoir constructed and owned by Rio Tinto, formerly Kennecott Copper Corporation, in 1942. It served as a final siltation reservoir for their mill tailings from Kennecott's copper operation in McGill, Nevada. Bassett Lake has been maintained as a public fishery since 1947. Prior to 1963, there were nine game fish species present and in 1963, Bassett Lake was chemically treated to remove a

nuisance population of common carp *Cyprinus carpio*. In 1965, largemouth bass *Micropterus salmoides* were introduced as a biological control. After common carp reestablished in the lake, northern pike *Esox luciosus* were introduced in 1966 to assist in controlling common carp. This was successful and common carp numbers were significantly declining. It was documented in 1974 and 1975 that northern pike was also showing signs of a population crash and, as a result, there was also a decline in angling pressure.

In August 2015, a chemical treatment was conducted in an effort to remove the remaining northern pike and common carp, along with all other species present in the lake and tributaries. Following the treatment, activities to ensure the treatment was a success took place. No fish were found during post-treatment surveys.

In October 2015, 38 largemouth bass were captured from South Fork Reservoir in Elko County and released into Bassett Lake. They ranged from 2.4 in (60 mm) to 18.7 in (319 mm), and averaged 12.6 in (319 mm). About, 3,500 fingerling largemouth bass were stocked from a commercial hatchery out of Idaho in October 2015 and 2,500 rainbow trout were stocked in November 2015. In June of 2017, 550 bluegill sunfish were stocked from Andorno Pond in Humboldt County. A representative sample of 100 bluegill averaged 4.3 in (108 mm). Finally, 1,500 rainbow trout were stocked in the fall of 2018.

Cave Lake

Cave Lake, a 32 surface acres of water body, has been managed as a high use recreational fishery supporting some 20,000 angler use-days per year. It was purchased in 1971 by the Nevada Department of Fish and Game and is currently managed as a State Recreation Area under a cooperative agreement between the Department of Wildlife and Division of State Parks. The combination of a put-and-take rainbow trout fishery and quality visitor facilities attract users year round. Cave Lake also holds a self-sustaining population of brown trout and, although not commonly caught, the state record was set here in 1984 at 27 pounds 5 ounces.

Cave Lake is annually stocked with approximately 22,000 hatchery-reared rainbow trout. Previous fall electroshocking surveys (2015 to 2017) found a strong brown trout population than was previously thought, however, multiple age classes are lacking.

Cold Creek Reservoir

Cold Creek Reservoir is a small spring-fed fishery located approximately 100 mi northwest of Ely in Newark Valley, Nevada. It is managed under the General Fisheries Concept. At capacity, the reservoir covers 14 SA and is situated on both private property and land administered by Bureau of Land Management. The reservoir contains largemouth bass and a naturally reproducing population of rainbow trout that is

augmented twice annually with hatchery-reared rainbow trout at 9.0 in TL. The reservoir receives approximately 1,300 angler use-days per year.

After being chemically treated in 1972 and 1984, the target species, tui chub, rapidly increased and reached nuisance levels for a number of years. Tui chub numbers are currently high and are in competition with rainbow trout for food resources. Because this has influenced trout abundance and quality, angler visitation and satisfaction has suffered. In an effort to biologically control tui chub, 366 largemouth bass have been stocked on three occasions from 2008 through 2011. In 2014, Cold Creek Reservoir received an additional 69 largemouth bass from Ruby Marshes. Fall-stocked rainbow trout were replaced with bowcutt trout beginning in 2010 to help forage on tui chub. These augmentations create a multi-tiered fishery, increase angling opportunity, and provide a means of biological control of the tui chub.

During the 2013, the reservoir did not receive bowcutt trout due to poor spawning conditions at Marlette Lake, NDOW's brood source for rainbow trout and Lahontan cutthroat trout. Between 2014 and 2017, 6,217 bowcutt trout have been stocked.

Illipah Reservoir

Illipah Reservoir is privately owned for irrigation use and is managed as a public fishery under an agreement signed in 1981 between the NDOW and Robert E. Dickenson (now Jack Neal). As a result of this agreement, the State of Nevada built a new dam, enlarging its capacity and providing for a minimum pool of 160 acre-ft. At capacity, the reservoir is 72 SA with a storage capacity of 1,300 acre-ft. Due to irrigation and livestock needs by adjacent Moorman Ranch and two other water right holders, water levels at Illipah Reservoir are additionally dependent upon winter precipitation and fluctuate greatly.

Illipah Reservoir receives 15,000 rainbow trout annually, with the allocation being delivered in spring and fall.

Silver Creek Reservoir

Silver Creek Reservoir is a small, privately owned irrigation reservoir. The fishery is managed by NDOW as put-and-take for trout. The reservoir was dredged in 1993, restoring some of its lost capacity and reestablishing a non-withdrawable minimum pool. It is managed as a public fishery under an informal agreement with the owner, Baker Ranches.

OBJECTIVES and APPROACHES

Bassett Lake

Objective: General Sport Fisheries Management

Approaches:

- Visually monitor seasonal water level fluctuations during the course of other duties.
- Conduct a general fisheries assessment through opportunistic angler contacts.
- Set gill nets or frame nets for two net nights in the spring (spring 2019)
- Conduct one night of electroshocking in the summer to assess warm water game fish abundance and trout body condition.
- Introduce bluegill (approximately 500) as a forage species for largemouth bass.
- Recover stranded game fish from the reservoir and spillway stream channel when necessary and return them to the lake.

Cave Lake

Objective: General Sport Fisheries Management

Approaches:

- Conduct a general fisheries assessment through opportunistic angler contacts.
- Visually assess water quantity (lake level, inflow/outflow) and quality (clarity) for coordinating Trout stocking.
- Utilize boat electroshocking during one night in the late summer or fall to assess brown trout and rainbow trout abundance, size, and body condition.
- Sample for occurrence of quagga mussel veligers through plankton net tows conducted two to four times between June and September at up to three sites. Conduct visual and tactile surveys of artificial and natural solid substrates in conjunction with veliger sampling.

Cold Creek Reservoir

Objective: General Sport Fisheries Management

Approaches:

- Maintain and check volunteer angler drop-box survey returns during the course of other duties.
- Visually assess water quantity (lake level, inflow/outflow) and quality (clarity) for coordinating trout stocking.
- Conduct general fisheries assessment through opportunistic angler contacts.
- Provide anglers with an additional drop-box.

Illipah Reservoir

Objective: General Sport Fisheries Management

Approaches:

- Conduct a general fisheries assessment through opportunistic angler contacts.
- Maintain and check return of volunteer angler drop-box surveys during the course of other duties.
- Visually assess water quantity (lake level, inflow/outflow) and quality (clarity) for coordinating trout stocking.
- Set experimental gill nets for two net nights in the spring (i.e., complete the FY2018 Approach).

Silver Creek Reservoir

Objective: General Sport Fisheries Management

Approaches:

- Maintain and check return of volunteer angler drop-box surveys during the course of other duties.
- Visually monitor seasonal water level fluctuations during the course of other duties.

PROCEDURES

Visits were made throughout 2018 to Bassett Lake, Cave Lake, Comins Lake, and Illipah Reservoir for monitoring water quality and quantity. While present at each water body, department personnel collected creel survey data. Information on angler harvest, effort, and origin were recorded on standard forms. Harvested trout were measured to total length.

Prior to spring and fall stocking and during the course of other duties, trips were made to Cave Lake, Cold Creek Reservoir, Bassett Lake, Illipah Reservoir, and Silver Creek Reservoir to visually ascertain water levels and measure water temperatures for trout stocking.

During the course of other duties throughout the year, volunteer angler survey drop-boxes at Cold Creek Reservoir, Illipah Reservoir, and Silver Creek Reservoir were periodically maintained and restocked with forms. At the end of the year, data was summarized.

Two 75 ft x 5 ft frame nets were set at 1425 and 1435 hrs on 22 May 2018 at Bassett Lake. Both nets were set at similarly between approximately one to eight feet of depth. Nets were fished overnight and pulled at 0935 and 0950 hrs, respectively, the following morning. All fish captured were identified and measured and live fish were returned to the reservoir.

An electroshocking barge was used to sample one transect at Cave Lake on the evening of October 16. With a new shocking unit (Smith-Root VVP-15B), the booms

were set forward as the anode and the hull of the boat worked as the cathode. Voltage was set at 300 V continuous pulse with an output of 8 to 10 A. Pulse frequency was set at 90 Hz with a pulse width of 5 ms. Attempts were made to capture all stunned fish and all those captured were measured (TL) and weighed with a spring-type hand scale. All trout were returned to the lake once processed.

At Cold Creek Reservoir, 7 frame nets and 25 minnow traps were deployed at 1630 hrs on 11 April 2018 and pulled at 0700 hrs on 12 April 2018. Frame nets were distributed along the southern one-third of the eastern shoreline, southern shoreline, and western shoreline, with minnow traps being deployed alongside the frame nets. Frame nets were anchored to the shoreline and were set in depths between 8.0 and 12.0 ft. Minnow traps were used at water depths between one and three feet. All trout were measured to total length, while a representative sample of tui chub was measured (TL). Live trout were returned to the reservoir and all tui chub were removed. At the time of the survey, the middle pond was filling and the lower pond was at capacity.

At Illipah Reservoir, two 75 ft x 5 ft frame nets were deployed at 1545 and 1600 hrs on April 25. One net was set along the east shoreline just south of the old dam in roughly 28 ft (9.0 m) of water. The other net was set further south along the east shore of the south lake, approximately two thirds of the way between the old dam and current inflow in 14.0 ft (4.5 m) of water. The nets were pulled at 1040 and 1100 hrs respectively, on April 26. All fish captured were identified and total length measurements recorded. Live fish were returned to the reservoir while crayfish captured were discarded.

FINDINGS

Bassett Lake

Two visits were made to the reservoir during other job responsibilities and no creel contacts were made. Water temperatures were taken to coordinate trout stocking, and in early October, it was 53°F. Bassett Lake was stocked with 1,550 Erwin-Arlee strain rainbow trout that averaged 9.3 in.

Frame nets caught 14 fish; 11 were bluegill and the other three were common carp. Bluegill averaged 7.4 in (187.2 mm) and ranged from 6.3 in (160 mm) to 8.3 in (211 mm). While population size structure was not assessed, fish grew on average 3.1 in in 10 mo since being stocked. Bluegills likely doubled their length in that same time and most were in excellent body condition. Finally, common carp were between 9.1 in (230 mm) and 10.5 in (266 mm).

Even though other game fish (largemouth bass and rainbow trout) were not contacted, they were observed during the survey. Numerous largemouth bass have been noted in the reservoir, a reflection of successful spawning recruitment. Most bass observed appear to be in good to excellent condition. The lack of other game fish captured could be the result of several issues; one being that game fish biomass was

relatively low in Bassett Lake. Since NDOW has only stocked the lake three times since the 2015 treatment, the accumulative effect of fish escapement (leaving through the Duck Creek outflow), angler harvest, and natural mortality possibly reflects low fish numbers. The other issue contributing to low abundance is a change in the sampling strategy. While sampling occurred in the same location as in the 2017-gill net survey, the sampling occurred with frame nets in 2018. Frame nets were used to reduce/eliminate mortality of sport fish when caught.

Without continued monitoring, a clear understanding of the population structure and numbers of game fish species at Bassett Lake will not be well understood. If game fishes can be kept from escaping the reservoir and species stockings become more consistent, population sizes should expand. The body condition of fish captured, along with those observed, speaks to the productivity of Bassett Lake.

Cave Lake

During the course of other job duties, three visits to Cave Lake resulted in contacting 28 anglers in 2018 that fished 37 hrs and caught 48 trout. All fish caught were rainbow trout ranging from 10.4 in (265 mm) to 12.7 in (322 mm) and averaged 11.5 in (292 mm). Of the anglers contacted, 17 were from Clark County, 9 were from White Pine County, and the remaining 2 were from Washoe County.

Water levels remained at capacity throughout the year. Water temperatures were taken to coordinate stocking efforts in the spring and fall and were 47 and 51°F, respectively.

Electroshocking activities began at 1900 hrs and concluded at 2036 hrs for 1,699 s of shocking time. Survey activities commenced at the north end of the lake and continued in a clockwise fashion around the shoreline to the finish. The lake was at capacity, water temperature was 51°F, and air temperature was 45°F. Shocking efficiency was deemed excellent.

The survey caught 157 fish consisting of 101 rainbow trout, 55 brown trout, and 1 largemouth bass. A representative sample of 31 rainbow trout was measured, revealing an average total length of 10.6 in (269 mm) and a range from 8.5 in (217 mm) to 14.4 in (367 mm). Body condition was visibly assessed, with most fish looking fair to poor. Length frequency analysis suggests there were two age classes caught from Cave Lake with break points at 360 mm and 380 mm (Figure 1). The two trout in the 360 mm group actually measured 347 mm and 348 mm. Review of stocking receipts suggest fish captured from 220 mm through 360 mm were stocked in spring of 2018.

The average length of brown trout ($n=46$) was 10.3 in (262 mm), with a range of 6.2 in (158 mm) to 27.6 in (701 mm). A length frequency analysis revealed six age classes caught at 165 mm, 220 mm, 320 mm, 440 mm, 580 mm, and 701 mm (Figure 2). Visible assessment of the body condition found brown trout ranged from poor to excellent. Historical studies of hatchery rainbow trout stocked in Cave Lake found they

decrease in size over time due to limited prey resources; therefore, it was expected that most brown trout would be in poor body condition. Noted that there was a lack of mature brown trout age classes between 13 and 18 in.

Figure 1.

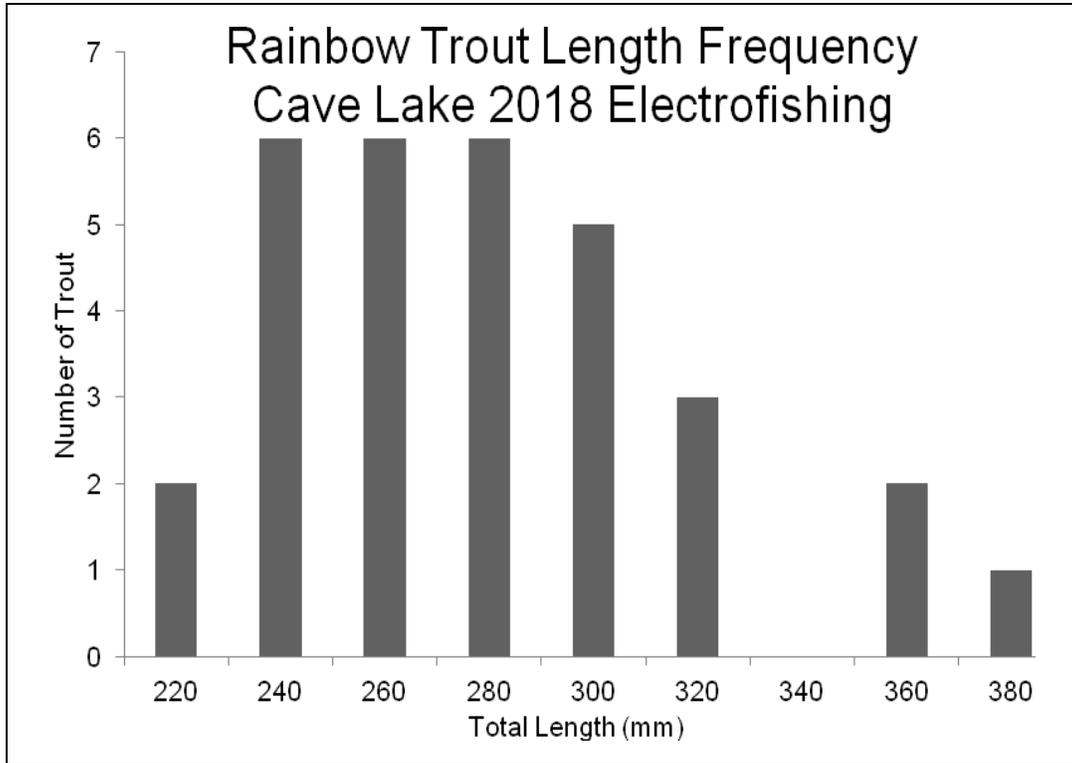
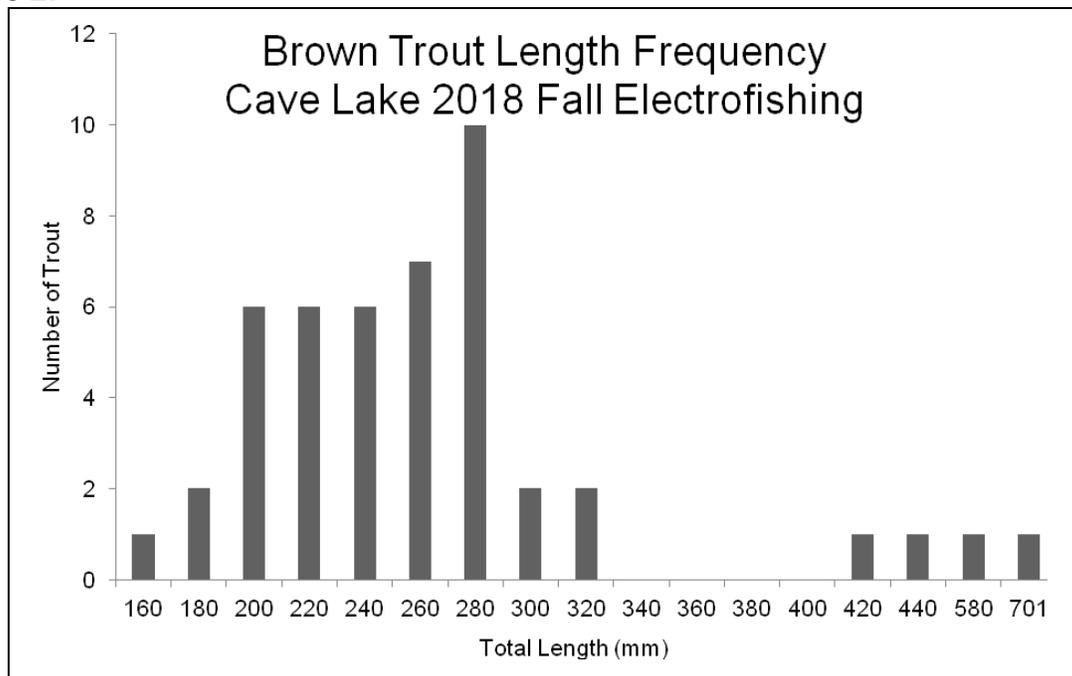


Figure 2.



Following the analysis of the length-frequency data, proportional size distribution (PSD) (as defined by Guy et. al. 2007) was calculated for rainbow trout. Proportional size distribution is equal to relative stock density, measuring the proportion of quality length fish to that of stock length fish in a population. Based off the PSD formula:

$$PSD - X = \frac{\# \text{ of fish } \geq \text{ specified length}}{\# \text{ of fish } \geq \text{ stock length}} * 100$$

Where “X” is the descriptor for the number of fish in a certain length category in the numerator. The length categories for Stock, Quality, Preferred, Memorable, and Trophy rainbow and brown trout can be found in Table 1. The PSD for rainbow trout was zero. This finding was not surprising considering that the rainbow trout fishery in Cave Lake is managed as a “put and take” fishery. Proportional size distribution for Quality length (≥ 14 in) brown trout was 11, PSD-P (Preferred length; ≥17.5 in) was 5 and PSD-M (Memorable length; ≥ 23 in) was 2. This means that 11% of the brown trout population is considered Quality, 5% is considered Preferred, and 2% is considered Memorable.

Table 1. Minimum length expressed in inches and millimeters of each length category for rainbow trout and brown trout.

	Rainbow Trout*	Brown Trout**
Stock	10 in (254 mm)	7.8 in (203 mm)
Quality	16 in (406 mm)	14 in (355 mm)
Preferred	20 in (508 mm)	17.5 in (445 mm)
Memorable	26 in (660 mm)	23 in (584 mm)
Trophy	31 in (787 mm)	28.8 in (732 mm)

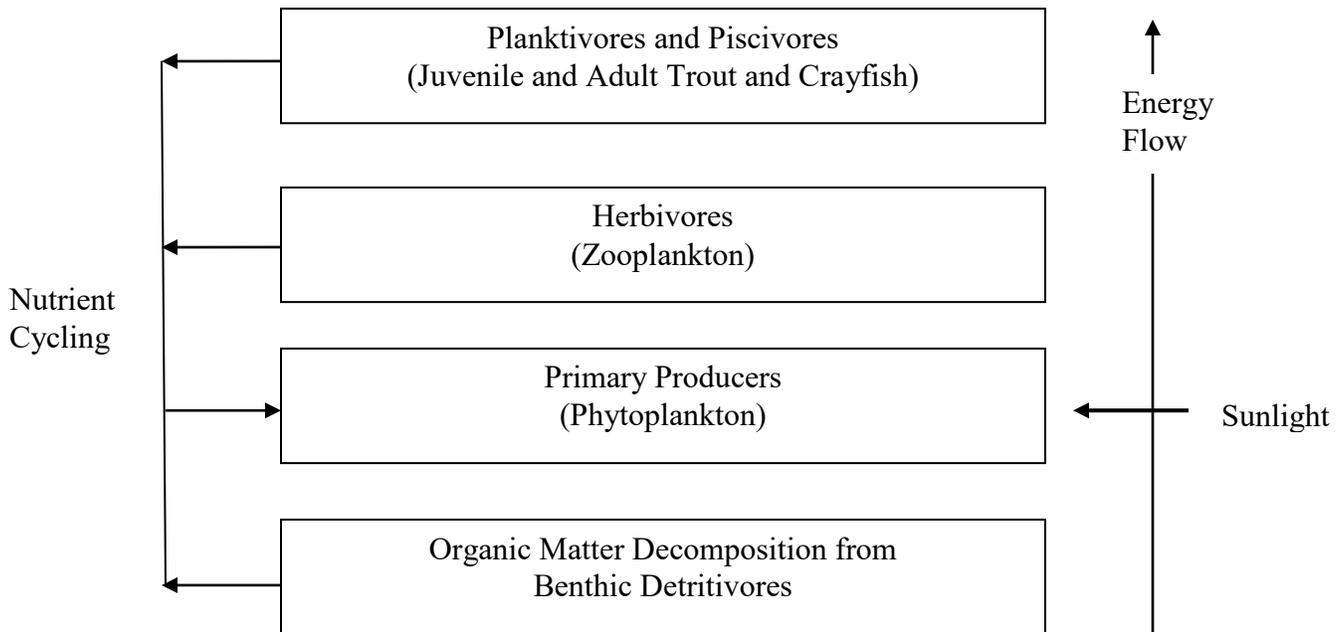
*Simpkins and Hubert (unpublished)

**Gablehouse (1984)

Cave Lake is an oligotrophic lake characterized by limited nutrients and limited primary production. The limited primary production causes a ripple in the trophic system keeping fish from growing effectively. Figure 3 shows a simplified illustration that corresponds to the different trophic levels in Cave Lake and the organisms that reside within each level. The only tributary to Cave Lake is Cave Creek, leaving limited potential for nutrients increases and, thus, limited energy transfer among trophic levels.

In 2014, a park ranger caught a glimpse of a fish in Cave Lake that was not characteristic of a salmonid. An electroshocking survey was conducted shortly after that did not reveal any other species outside of rainbow trout and brown trout. In late August 2015, an angler reported catching a 12 in largemouth bass from Cave Lake. Since that time, there have been multiple largemouth bass either caught by anglers or captured in population surveys at Cave Lake. The single largemouth bass captured in this survey was 14.2 in (360 mm) and was released back into Comins Lake after the survey was completed. Bass have been illegally introduced, and since Cave Lake is a coldwater fishery, a largemouth bass population would likely not be successful.

Figure 3.



Rainbow trout captured in the 2018 electroshocking survey reflect the average size of the trout stocked during the previous spring, with the exception of one larger individual. Since Cave Lake is managed as a “put and take” rainbow trout fishery, a large carryover population is not expected. The brown trout population was much stronger than what historical surveys found and from what creel surveys have shown. However, the brown trout population in Cave Lake does not contain nearly the number of individuals as the rainbow trout population. The body condition of all trout (with the exception of a few larger individuals) will continue to remain poor to fair as long as nutrients and primary productivity remain low.

The missing age class of brown trout between 14 and 16 in is concerning. Although PSD-Q was 11, all fish in the data set were greater than the length range considered as Quality size (i.e., 14 to 15.9 in). This could be a result of poor recruitment, likely tied to a significant rain on snow event in 2011. A fish population that is between the extreme ranges of large quantities of small fish and small quantities of big fish is thought to be balanced (Anderson and Neumann 1996). Assuming that no other outside factors influence that length category, younger age classes will eventually occupy older age classes. Proportional size distribution will be monitored in the future to index length-frequency data and to monitor if there is a trend.

Cold Creek Reservoir

The water level at Cold Creek Reservoir reached approximately 80% of capacity in spring 2018 before dropping to 40% by the end of the year. The water level remained similar throughout the winter. In the spring, the water temperature was measured to

coordinate stocking efforts and was 59°F. Fall stocking did not occur at Cold Creek Reservoir in 2018.

The angler drop-box collected 10 surveys in 2018 and two were discarded for lack of information. The eight anglers fished 27 hrs and caught 47 rainbow trout and 52 largemouth bass. Anglers kept six rainbow trout and five largemouth bass and total catch rates were 12.8 fish per angler and 3.7 fish per hour. Angler satisfaction was rated on a scale of 0 to 4, with 0 being unsatisfied and 4 representing satisfaction. Average ratings were 3.7 for total fishing experience, 3.4 for the number of fish caught, and 3.7 for the size of the fish caught.

For rainbow trout, the size reported was relatively well distributed among those less than 9.0-in, between 9.0 and 10.9 in, and between 11.0 and 12.9 in. These three brackets comprised 88% of the all rainbow trout caught. The 13.0 to 14.9 in bracket retained 8% of the fish caught. The remaining 4% came from the 15.0 to 16.9 in bracket. Largemouth bass between 9.0 and 12.9 in comprised 87% of the catch at Cold Creek Reservoir in 2017. One largemouth bass (3%) measured between 13.0 and 14.9 in and three (10%) measured between 15.0 and 16.9 in.

Anglers appeared to be very satisfied with fishing in 2018 (3.7 rating out of a possible 4.0), which increased from previous years. However, the number of angler responses was limited in 2018.

Illipah Reservoir

During the course of other job duties, five visits made to Illipah Reservoir resulted in contacting 15 anglers in 2018. Anglers fished 39 hrs and caught 55 rainbow trout. From information on 22 trout, they ranged from 10.2 in (260 mm) to 14.9 in (380 mm) and averaged 12.2 in (311 mm). Of the anglers contacted, four were from White Pine County, two from Clark County, and the other nine were mostly from Eureka and Washoe counties.

At the time trout were stocked in spring, the reservoir was at capacity for the first time in a decade. Over the course of the year, water was released to downstream water right holders dropping the water level to approximately 25% by the end of the season. Water temperatures were measured to coordinate stocking efforts in the spring and fall and were 51 and 54°F, respectively.

Anglers completed 61 questionnaires for the drop-box survey at Illipah Reservoir this year. This is the first time in four years that there was an increase in the number of volunteer surveys. Six surveys, however, were rejected for insufficient data. Appropriate surveys were received from 59 anglers that fished 307 hrs and caught 473 fish consisting of 448 rainbow trout and 25 brown trout. Resulting catch rates (all fish) were 8.0 fish per angler and 1.5 fish per hour. Anglers harvested 142 rainbow trout and 11 brown trout, for rates of 2.6 fish per angler and 0.50 fish per hour. Shore anglers accounted for 82% (47 individuals) of all anglers, 2% (1 individual) fished through the

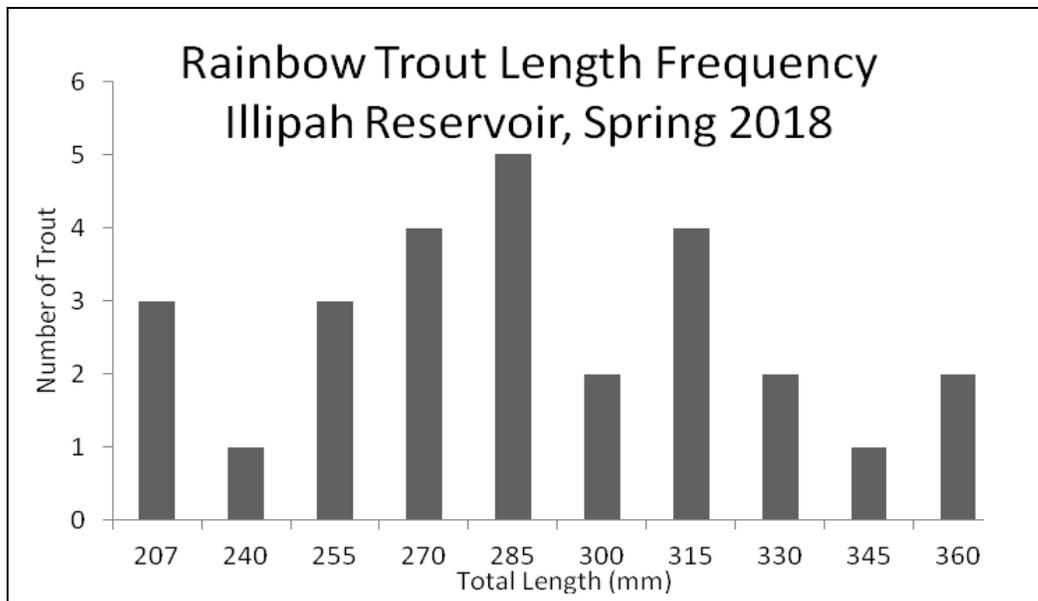
ice, 2% (1 individual) fished from a boat, 2% (1 individual) fished from a kayak, and the remaining 12% fished from float tubes (7 individuals).

Drop-box survey results found 87% of the rainbow trout caught were less than 12.9 in. The remaining 13% ranged from 13.0 in to greater than 18.9 in. Brown trout less than 10.9 in comprised 40% of those caught, while 56% caught were between 11.0 and 14.9 in. Only one brown trout was between 15.0 and 17.0 inches. Angler satisfaction in 2018 was rated on a scale of 0 to 4, with 0 being unsatisfied and 4 representing satisfaction. Results found total fishing experience averaged 3.6, number of fish averaged 3.0, and size of fish averaged 3.1. Overall, angler satisfaction improved in 2018, likely due to a better water year.

During the gill net survey, 59 trout were captured, which included 57 rainbow trout and 2 brown trout. Rainbow trout were captured at a rate of 1.55 fish per net-hr, while brown trout were captured at a rate of 0.11 fish per net-hr. Catch rates in 2018 were lower than the average catch rate over the last decade for rainbow trout (2.75 fish per net-hr) and brown trout (0.46 fish per net-hr).

The rainbow trout measured ranged from 8.1 in (205 mm) to 14.2 in (360 mm), with an average of 11.1 in (282 mm). A length frequency histogram show four age classes at the following break points of 8.1 in (207 mm), 11.8 in (300 mm), and 14.2 in (360 mm) (Figure 4).

Figure 4.



Brown trout measured 14.6 in (373 mm) and 16.6in (423.5 mm). Catching a low number of brown trout is typical; however, up to 32 in 1988 were caught. Other surveys (contact and angler drop-box) and visual observations in Illipah Creek reveal younger brown trout do occur and they eventually are recruited into the reservoir population.

Seven rainbow trout were weighed and measured and four individuals were found to be in poor body condition, two in fair condition, and one in good condition. Both brown trout were in poor body condition even though they were both quality-sized trout. The overwhelming number of trout in poor body condition could be a direct result of the recent drought and water withdrawal from the reservoir for irrigation and livestock use. Since 2012, Illipah Reservoir has only reached minimum pool once; however, the stresses of a continuous low water level likely have a direct influence on the fishery. In the spring of 2018, the water level was at or near capacity for the first time in nearly a decade. It will be interesting to see if this translates to better body condition in trout.

The population structure of brown and rainbow trout continue to be poor. There seems to be weak carryover of rainbow trout, shown by a lack of older age classes. Brown trout naturally spawn in Illipah Creek and recruit into the reservoir population. The results of the 2017 survey revealed a poor population structure consisting of a few younger age class trout and several older age class trout. Poor population structure of brown trout could be due to the same environmental factor influencing body condition, which is drought. Illipah Reservoir is managed as a put-grow-take fishery; however, the lack of diverse and abundant size classes is concerning.

Both population characteristics mentioned above are being seen in other White Pine County reservoirs that are used for irrigation and livestock purposes. Without an adequate amount of precipitation coming as snow and snowpack, Illipah Reservoir is going to continue to experience low water levels and warm water temperatures into the warmest months of the year. It will be essential in the future to coordinate with the private landowner on potential water saving measures.

Silver Creek Reservoir

Silver Creek Reservoir is a privately held reservoir that allows public access for fishing. The water is used for livestock and crop production by the water right holders and, consequently, the water level fluctuates greatly. In 2018, the reservoir was not stocked with tiger trout due to poor water conditions.

MANAGEMENT REVIEW

- Four of the six approaches were completed for Bassett Lake in 2018. The electroshocking survey and bluegill stocking will occur when lake conditions improve and bluegill are available.
- Three of the four approaches were completed for Cave Lake in 2018. Quagga mussel sampling did not happen and will be discontinued since sampling is proposed for Comins Lake, the downstream reservoir.
- Three of the four approaches were completed in 2018 at Cold Creek Reservoir. An additional drop-box was not installed in 2018 due to issues with private/BLM property boundaries.

- All of the four approaches for Illipah Reservoir were completed in 2018.
- Both approaches for Silver Creek Reservoir were completed in 2018.

RECOMMENDATIONS

Bassett Lake

- Continue with annual or semiannual fish surveys to examine population structure.
- Determine appropriate numbers of rainbow trout that should be stocked annually.
- Augment the bluegill sunfish population.

Cave Lake

- Continue electroshocking surveys on years scheduled for management activities at Cave Lake.
- Conduct brown trout spawning surveys in Cave Creek in the fall.

Cold Creek Reservoir

- Complete the Cold Creek Reservoir study report.
- Discuss with the private reservoir owner the on-going structural issues that will increase the long-term water capacity.
- Augment the largemouth bass population from proximal waters as needed.

Illipah Reservoir

- Conduct a gill net survey to document the status and possible population trends in the trout fishery.
- Begin marking rainbow trout to monitor growth and annual carryover.
- Renew talks with the Moorman Ranch and Natural Resource Conservation Service about establishing an engineered pipeline from Illipah Reservoir to the water right holders.

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Date: April 2019

