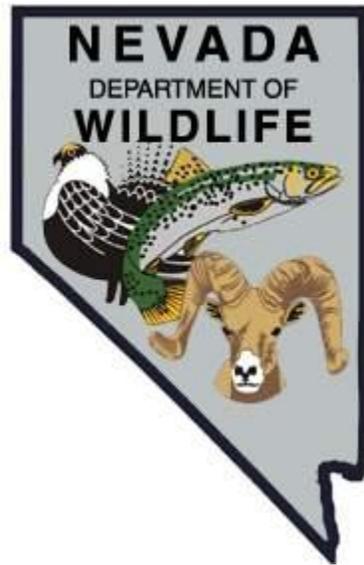


NEVADA DEPARTMENT OF WILDLIFE STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORT

F-20-48
2012

TRUCKEE RIVER WESTERN 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: *Truckee River*
Period Covered: *January 1, 2012 through December 31, 2012*

SUMMARY

On April 1, the Truckee River Basin snowpack stood at 59% of average for the end of the designated snowpack year. Normally, this is disconcerting for the Truckee River fishery; however, this water year follows a winter where snowpack was 161% of average. The 2010/11 snowpack filled upstream reservoirs and helped to maintain flows throughout 2012.

Nine fish population survey transects were completed across four zones on the Truckee River from September 25 to 27. A total 2,153 fish were captured during the survey consisting of 1,037 salmonids, 1,104 native non-game species, and 12 undesirable species. Although more than 15,000 LCT were stocked into the Truckee River in 2011, none were observed or captured during the survey.

The average relative density of salmonids in the Truckee River this year across all transects and zones was 1,008.4 fish per mile. Estimates within the transects ranged from a low of 122.1 fish per mile at Painted Rock to a high of 3,300 fish per mile at Wingfield. Percent composition of salmonids for the entire river was 54% rainbow trout, 35% brown trout, and 11% mountain whitefish.

Rainbow trout continued to do well in the Truckee River and consisted of wild populations augmented with hatchery-reared fish to compensate for angling pressure and harvest. Of the 558 rainbow trout captured during survey activities, 77.1% (430 fish) were found to be wild fish. In addition, 64.4% of the rainbow trout were deemed as Class I or younger fish that serve as positive indicators of successful spawning in the river in 2011 and 2012.

Brown trout populations also continued to thrive in the Truckee River. Data collected suggests their populations have not declined since the stocking program was eliminated seven years ago. Of the 264 wild brown trout analyzed, 62.1% (164 fish) were deemed as Class I or younger, which also serves as a positive indicator of successful spawning in the past two years.

Mountain whitefish represent a native unstocked species in the Truckee River. Of the 117 mountain whitefish analyzed, 76.1% (89 fish) were deemed as Class I or younger fish.

Assistance was provided to the USFWS during their annual raft and shoreline electroshocking survey in July. In addition, NDOW personnel attended the annual LCT

Interagency Meeting in Reno, Nevada.

Opportunistic angler contacts were made on six days on the Truckee River in 2012. On these occasions, 44 anglers fished for 64.5 hrs and caught 40 fish consisting of 38 rainbow trout, 1 brown trout, and 1 mountain whitefish. Resulting catch rates were 0.91 fish per angler and 0.62 fish per hour. Angler use showed 91% Washoe County residents, 2% residents from other counties in Nevada, and 7% nonresidents.

A total of 67 volunteer angler surveys were received from the two drop-boxes on the Truckee River in 2012. During the months when surveys were received, 67 anglers fished for 174.5 hrs and caught 192 fish consisting of 147 rainbow trout, 39 brown trout, 1 LCT, and 5 mountain whitefish. Resulting catch rates (all fish) were 2.87 fish per angler and 1.10 fish per hour.

The 2011 mail-in angler questionnaire data estimated angler use at 6,451 having 57,917 angler use days. There was an estimated 112,574 fish caught on the Truckee River. These estimates were substantially lower than the 9,411 anglers, 99,153 angler days, and 204,726 fish reported for 2010. However, the estimated catch rate of 1.94 fish per day found in 2011 was nearly identical to the rate of 2.06 fish per day found the previous year.

From late-March through mid-November, the Truckee River received 71,130 triploid-strain rainbow trout that were stocked on 16 separate occasions.

BACKGROUND

The Truckee River formerly supported tremendous spawning runs of cui-ui that lived in Pyramid Lake and lacustrine/ad-fluvial Lahontan cutthroat trout (LCT) that inhabited the Lake Tahoe and Truckee River basins. It is generally accepted there were two spawning runs (winter and spring) of LCT from Pyramid Lake that would ascend the Truckee River to reach spawning habitat in the main stem and tributaries. The cui-ui is believed to have had an upstream limit near East McCarran Boulevard while LCT are believed to have moved throughout the Lake Tahoe-Truckee River-Pyramid Lake watershed.

The influx of European settlers to the Truckee River basin brought with it a number of anthropogenic changes to the system including water diversions (fish passage barriers) for municipal and agricultural use (i.e., Derby Dam), over-harvest of fish, habitat alteration, reduced water quality and quantity, and introduction of non-native salmonids. The Pyramid Lake LCT population began to dwindle in the early 1900s and eventually became extirpated around 1940. Fortunately, the cui-ui was able to persist in limited numbers due to the longevity of the species.

LCT were successfully reintroduced into Pyramid Lake by the Nevada Department of Wildlife (NDOW) with stocks from a number of genetic strains including fish from Summit Lake and the Carson River Basin. The reintroduced LCT population currently provides a quality fishery. Pyramid Lake is within the boundaries of the

Pyramid Lake Paiute Reservation and the Pyramid Lake Paiute Tribe (PLPT) manages the lake's LCT fishery, which is maintained by hatchery stocking.

Subsequent to the collapse of the LCT fishery in the Truckee River, non-native salmonids such as rainbow trout and brown trout were introduced for sport fishing purposes. These species soon established self-sustaining populations which persist today. In an effort to meet angler demand, wild trout in the Truckee River are annually augmented with hatchery-reared trout.

The majority of the Truckee River is managed under general regulations which allow year-round angling and restricts daily harvest to five trout and ten mountain whitefish. In 1981, a "Trophy Section" was created in a 2-mile stretch of the upper Truckee River from Verdi Power Dam upstream to the California state line. The designation requires the use of artificial lures/flyes only and restricts harvest to two fish with a minimum size of 14.0 inches. In 1988, the Trophy Section was extended one mile downstream to the Interstate-80 Bridge. In 1992, the artificial lure regulation was modified to read, "artificial lures with single barbless hooks."

NDOW and the PLPT signed a 5-year Memorandum of Agreement (MOA) in 2002 which coordinates efforts to restore LCT in the Truckee River. The main objectives are to 1) Work toward the reestablishment of a natural LCT spawning run in the Truckee River and 2) To utilize LCT in the maintenance of recreational fishing in the Truckee River. Due to improved habitat conditions for salmonid spawning and rearing, both parties are optimistic that some degree of restoration is possible. In addition, through the work of the Fish Passage Team, some fish passage barriers are under evaluation in the hope that future modification would allow fish to move naturally throughout the system.

Annual population sampling has been conducted utilizing electrofishing techniques on the Truckee River since 1971.

OBJECTIVES and APPROACHES

General Management Objective: Administer an annual fisheries program that assesses general fish population dynamics, angler use and success, habitat conditions, and maintains contact with pertinent land management entities.

- Monitor water quantity (discharge) through USGS Stream Flow data.
- Monitor fish populations by conducting tote-barge electroshocking surveys at 11 traditional transects during three days in the fall.
- Coordinate and assist USFWS with raft electroshocking and shoreline electroshocking in the spring, summer, and fall as needed.
- Assist the Army Corps of Engineers and the Fish Passage Team to assess fish barriers and help design structures that will improve fish passage.
- Coordinate LCT recovery/restoration activities with the Truckee River Recovery Implementation Team.

- Collect fin samples from rainbow trout and LCT for genetic analysis during electroshocking surveys in cooperation with UNR.
- Conduct a general assessment of angler use, success, and harvest through opportunistic angler contacts, return of angler drop box surveys, and mail-in angler questionnaire data.
- Coordinate with cities, counties, and other entities to develop rafting access points.
- Maintain the angler information center and angler drop-boxes when on site.

PROCEDURES

General Management Objective

Visually monitor water quantity (discharge) through USGS Stream Flow data. Natural Resource Conservation Service (NRCS) and US Geological Service (USGS) data were used to assess water quantity in the Truckee River throughout the year. Annual snowpack data was derived from NRCS Snowtel sites in the Truckee River Basin while instream flow data was obtained from USGS gages located at Reno and Derby Dam sites.

Monitor fish populations by conducting tote-barge electroshocking surveys at 11 traditional transects during three days in the fall. The Western Region Smith Root 5.0 GPP tote barge was used in a single pass fish survey at nine transects along the Truckee River on September 25-27, 2012. Eight transects correspond to historical sampling sites on the river while a ninth transect was added this year. Due to poor results in the past, the Eagle Picher transect was eliminated in favor of adding the new transect at the McCarran Ranch property. The Crystal Peak Park transect was also not completed in 2012. The tote barge-shocking unit was set up with the two probes as the anode and the hull of the aluminum barge, containing the shocking unit, as the cathode. Power was generated with a gasoline-powered generator also housed in the boat. Voltage was set in the high range (50-1,000 volts DC) and 50-100% power, while pulse frequency was set at 120 Hz.

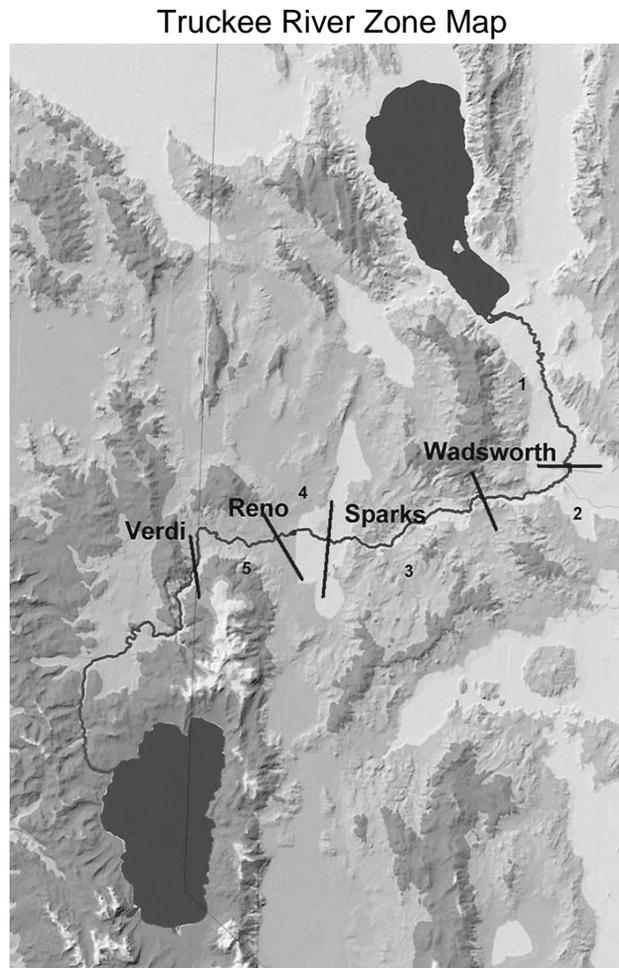
At each transect, the tote barge was pushed upstream while continuously shocking using both probes. Standard dip nets were used to capture stunned fish and then were temporarily placed in a live-well on the tote barge until shocking activities were completed. All fish captured were identified to species, measured (fork length – millimeters), and returned to the river. Rainbow trout were also judged as either wild or hatchery. Caudal fin samples were collected from rainbow trout and preserved in coin envelopes for future genetic analysis.

Data gathered were compiled and analyzed in Microsoft Excel. Species composition and age class distribution at each transect were assessed. Relative density (fish per mile) estimates were calculated based on the length of transects and number of fish captured. Noted that attempts were not made to electroshock every fish nor every portion of river at each transect. This survey was not intended to provide a

population census at each transect. It is intended instead to develop basic trends over time that can be compared to previous electroshocking efforts.

For ease of data analysis, the Nevada portion of the Truckee River was divided into five zones beginning at the mouth of Pyramid Lake and ending at the California state line (Figure 1). Beginning downstream and moving up, Zone 1 encompasses Pyramid Lake to the Wadsworth Bridge and is entirely within the Pyramid Lake Paiute Tribe (PLPT) Reservation. It is not sampled by NDOW. Zone 2 stretches from the Wadsworth Bridge upstream to Derby Dam, while Zone 3 covers Derby Dam to East McCarran Bridge. Most of the greater Reno/Sparks urban area is located within Zone 4, which runs from East McCarran Bridge to Mayberry Bridge. The portion of the river from Mayberry Bridge to the California state line is defined as Zone 5.

Figure 1.



Coordinate and assist USFWS with raft electroshocking and shoreline electroshocking in the spring, summer, and fall as needed. Assistance was provided to the USFWS during their annual raft and shoreline electroshocking survey in July.

Assist the Army Corps of Engineers and the Fish Passage Team to assess fish barriers and help design structures that will improve fish passage. The Army Corps of Engineers (ACE) Fish Passage Team was not active in 2012.

Coordinate LCT recovery/restoration activities with the Truckee River Recovery Implementation Team. Actions pertaining to LCT restoration in the Truckee River basin are usually coordinated with the USFWS and other members of the Truckee River Recovery Implementation Team (RIT) during semi-annual meetings. The Truckee River RIT did not meet in 2012.

Collect fin samples from rainbow trout and LCT for genetic analysis during electroshocking surveys in cooperation with UNR. Fin samples were collected from all rainbow trout during the annual electroshocking survey. Samples were air dried in envelopes and are awaiting delivery to UNR for analysis.

Conduct a general assessment of angler use, success, and harvest through opportunistic angler contacts, return of angler drop-box surveys, and mail-in angler questionnaire data. Scheduled and opportunistic visits were made to the Truckee River throughout the year for collecting creel survey data during an expected time to contact the greatest number of anglers as possible. Information on angler harvest, effort, and origin were recorded. Harvested fish were identified to species and measured to fork length in millimeters.

During the course of other duties throughout the year, two volunteer angler drop-boxes on the Truckee River were periodically maintained and restocked. At the end of the calendar year, data was tallied.

Angler use and success at the Truckee River was also assessed through the Department's Mail-in Angler Questionnaire Survey. Angler questionnaire data was derived from a survey that was mailed to about 10% of license purchasers from the previous calendar year.

Coordinate with cities, counties, and other entities to develop rafting access points. There were limited opportunities in 2012 to coordinate with cities, counties, and other entities to develop boat (raft) access points at suitable locations along the river. No additional raft access points were constructed in 2012.

Maintain the angler information center and angler drop-boxes when on site. The angler information center and drop-boxes were visually inspected and restocked on a regular basis.

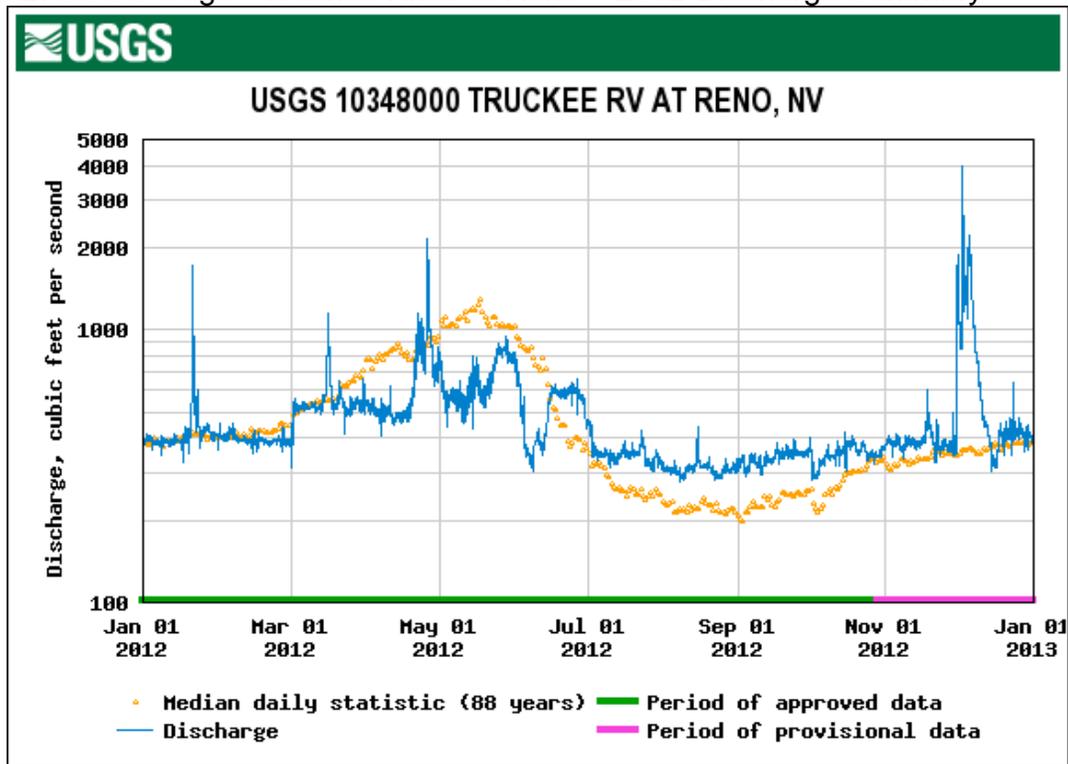
FINDINGS

General Management Objective

Visually monitor water quantity (discharge) through USGS Stream Flow data. On April 1, 2012, the designated end for measuring snowpack, the Truckee River

Basin snow pack stood at 59% of average. Normally, this would be a huge cause for concern for the Truckee River fishery. However, this year's total follows a winter in which snowpack was 161% of average on April 1. With most of the storage reservoirs in the basin remaining full throughout the year, flows in the river were maintained throughout 2012. Residual effects from the previous winter's heavy snowpack were evident in observed discharge throughout 2012. The USGS gauge at Reno showed flows well above the long-term average from July through October, the warmest part of the year (Figure 2). This gage gives a general representation of water conditions throughout the Truckee Meadows downstream to Derby Dam.

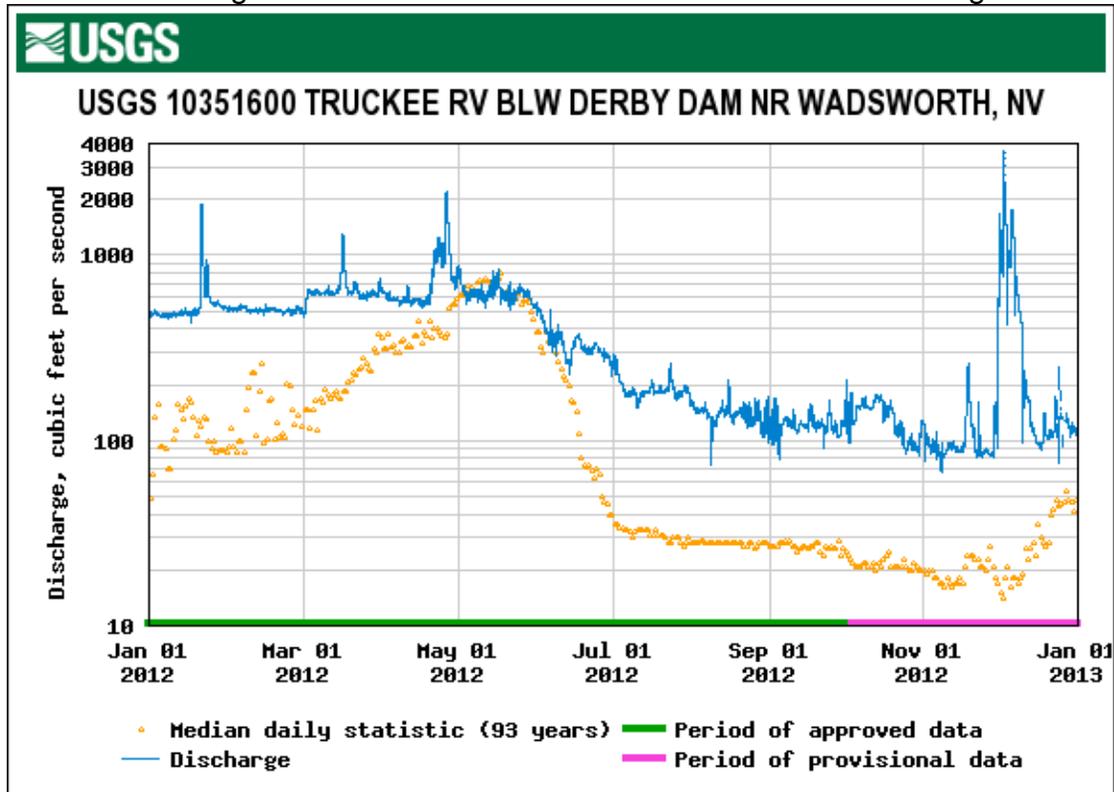
Figure 2. USGS Gage - Truckee River at Reno – 2012 Discharge Summary



Similarly, the USGS gage near Wadsworth reported discharge higher than the long-term average throughout the year (Figure 3). Based on observations made during the drought of 1987-94, a minimum instream flow of 250 cfs in Zones 2 and 3 downstream of Sparks is necessary to sustain salmonid populations through July and August. Flows less than 250 cfs may allow water temperature to approach the upper threshold for trout survival. Average discharge from the USGS Reno gage showed flows well above 250 cfs throughout all of 2012. Although average discharge at the USGS gage near Wadsworth showed flows below 200 cfs throughout the latter portion of the calendar year, no fish mortalities were observed or reported. It is interesting to note there were extreme spikes from the Reno and Wadsworth gages in December that represented flood conditions as a result of a rain-on-snow event. Although detrimental effects from a poor winter snowpack were not realized in 2012, it is feared that an additional winter with below average snowpack could prove harmful to the Truckee River fishery. With many of the upstream storage reservoirs now far below capacity,

adequate winter snowpack is crucial to maintain flow in the river throughout the upcoming year.

Figure 3. USGS Gage – Truckee River Near Wadsworth – 2012 Discharge Summary



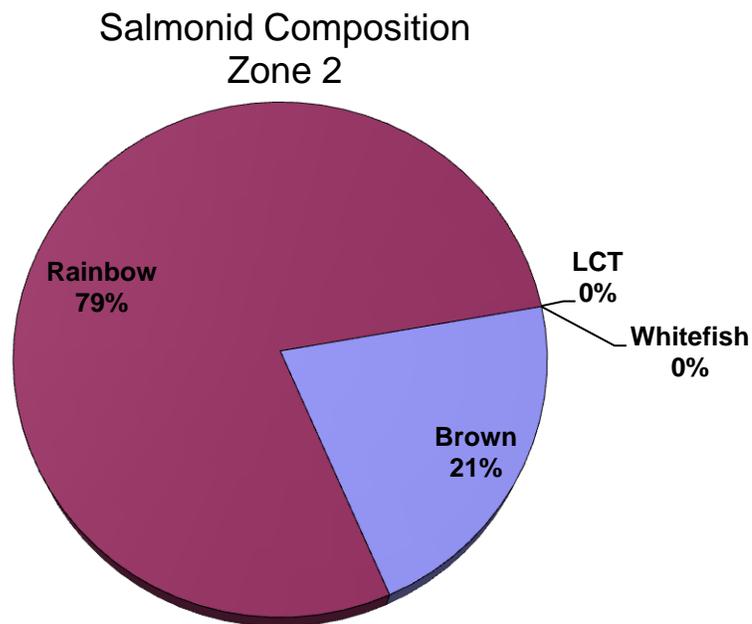
Monitor fish populations by conducting tote-barge electroshocking surveys at 11 traditional transects during three days in the fall. Nine fish population survey transects were completed across four river zones (2 through 5) on the Truckee River on September 25 – 27. A total 2,153 fish were captured during the survey consisting of 1,037 salmonids, 1,104 native non-game species, and 12 undesirable species. Salmonids were comprised of rainbow and brown trout, both of which are non-native, as well as the native mountain whitefish. Although more than 15,000 LCT were stocked into the Truckee River in 2011, none were observed or captured during the survey. Native non-game species captured consisted of Paiute sculpin, redbreast sunfish, speckled dace, mountain sucker, and Tahoe sucker. Eight largemouth bass, four fathead minnows, and a single pumpkinseed made up the 12 undesirable species. A few common carp were also observed during surveys yet none were captured. Undesirable species were a result of unintentional and/or illegal introductions in the river over time.

Excluding undesirable species, a game fish to non-game fish ratio of 48:52 was found. However, too much credence should not be given to this ratio as it may likely be biased. Because they are usually quite small, many non-game species go unnoticed during shocking activities. In addition, collection of salmonids usually takes precedence by netters over other fish when electroshocking. Therefore, some non-game species are simply ignored once identified. For the purpose of assessing Truckee River fish

populations and tracking trends over time, only salmonid species are examined closely. Nevertheless, it is still recognized that native non-game species are an integral component of the Truckee River food web. Continued reproduction and recruitment of these species are crucial for the perpetuation of the river's game fish populations.

Zone 2 population sampling transects were completed at Painted Rock and Derby Dam. A total of 196 non-game fish, 47 salmonids, and 3 undesirable fish were captured. Non-game fish captured included 156 redbside shiners, 29 mountain suckers, and 11 Tahoe suckers, while undesirable fish consisted of 1 pumpkinseed and 2 largemouth bass. Salmonids were comprised of 10 brown trout and 37 rainbow trout (Figure 4) resulting in a relative density of 130.7 fish per mile. Fish collected and processed from the large pool at the foot of Derby Dam were included in length assessments but not factored into the fish per mile estimate. Average length of brown trout was 12.9 in (329 mm) and ranged from 5.2 in (133 mm) to 18.9 in (480 mm). No juvenile brown trout (class I or smaller) were captured. Rainbow trout ranged from 3.8 in (97 mm) to 17.7 in (450 mm) and averaged 9.0 in (229 mm) overall. Approximately 24% of wild rainbow trout captured in Zone 2 were Class I or younger fish (<130 mm) suggesting fair to moderate recruitment in 2011. Of the 37 rainbow trout captured, 89.2% (33 fish) were identified as wild fish.

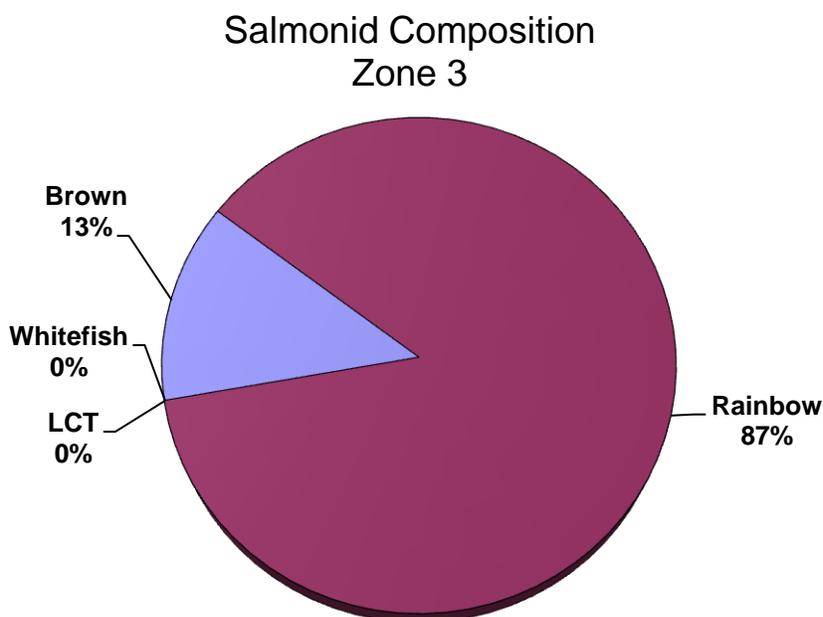
Figure 4.



A single population sampling transect was completed in Zone 3 at the McCarran Ranch. This transect was added this year to replace the Eagle Picher transect, which does not appear to represent this section of river. The transect at McCarran Ranch should be able to capture changes in fish populations in the Truckee River resulting from a number of restoration projects in recent years. A total of 121 non-game fish and 23 salmonids were captured in Zone 3. Non-game fish captured included 19 redbside shiners, 3 mountain suckers, and 99 Tahoe suckers. Salmonids were comprised of 3

brown trout and 20 rainbow trout (Figure 5) resulting in a relative density of 373.7 fish per mile. Average length of brown trout was 7.2 in (183 mm) and ranged from 4.5 in (114 mm) to 9.4 in (240 mm). Approximately 33% of brown trout captured were represented by Class I or younger fish (<150 mm) indicating moderate recruitment in 2011. Rainbow trout ranged from 3.3 in (83 mm) to 21.5 in (547 mm) and averaged 6.7 in (170 mm) overall. Approximately 45% of wild rainbow trout captured in Zone 3 were Class I or younger fish (<130 mm) suggesting a good recruitment year in 2011. All rainbow trout captured were identified as wild fish including one trophy that measured 21.5 in (547 mm). Although time is needed to determine what affects the restoration projects on the lower Truckee River will have on fish populations, evidence of recruitment and the presence of large salmonids serve as positive early indicators.

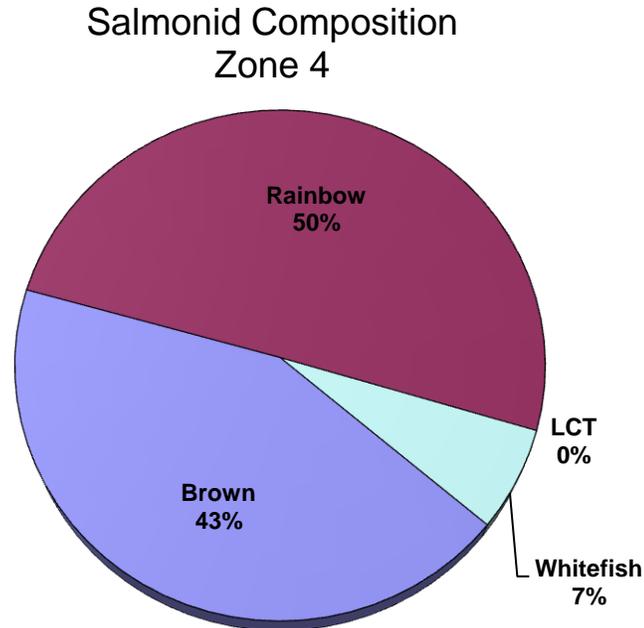
Figure 5.



Zone 4 population sampling transects were completed at Rock Park (two transects) and Wingfield. A total of 732 non-game fish, 551 salmonids, and 10 undesirable fish were captured. Non-game fish captured included 187 redbreast shiners, 77 speckled dace, 198 mountain suckers, and 270 Tahoe suckers, while undesirable fish consisted of 4 fathead minnows and 6 largemouth bass. Salmonids were comprised of 238 brown trout, 277 rainbow trout, and 36 mountain whitefish (Figure 6) resulting in a relative density of 1450.3 fish per mile. Average length of brown trout was 4.6 in (116 mm) and ranged from 1.7 in (44 mm) to 13.9 in (353 mm). Approximately 84% of brown trout captured in 2011 were represented by Class I or younger fish (<150 mm), which was evidence of excellent brown trout recruitment. Rainbow trout ranged from 1.8 in (46 mm) to 12.2 in (310 mm) and averaged 3.3 in (85 mm). Approximately 92% of wild rainbow trout captured in Zone 4 were Class I or younger fish (<130 mm), again showing excellent recruitment in 2011. All rainbow trout captured in Zone 4 were identified as wild fish. Although final analysis is not yet available, preliminary findings

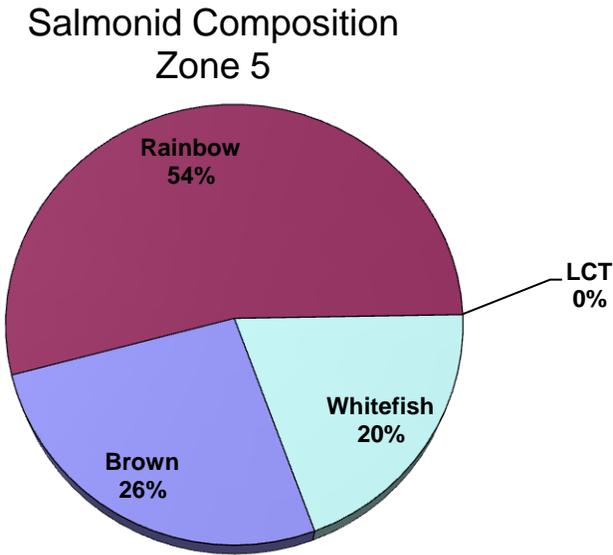
examining fish passage through the Rock Park Whitewater Park are positive from a study commissioned by the City of Sparks.

Figure 6.



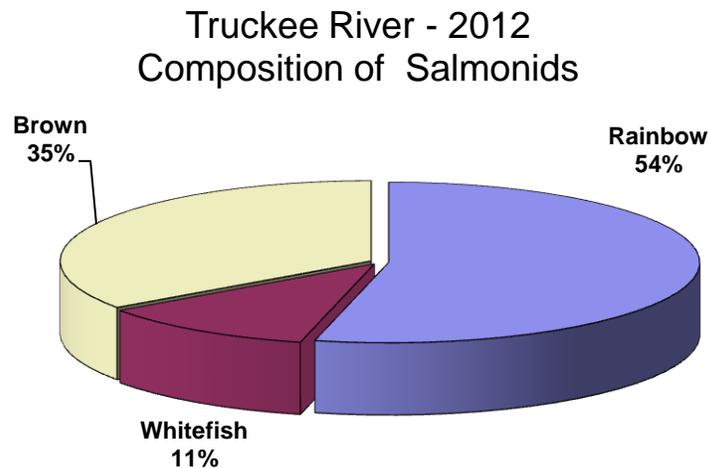
Zone 5 population sampling transects were completed at Patagonia, River Bend Dam, and Verdi Power Dam. A total of 55 non-game fish and 416 salmonids were captured. Non-game fish captured included 28 Paiute sculpin, 11, speckled dace, 5 mountain suckers, and 11 Tahoe suckers. Salmonids were comprised of 110 brown trout, 224 rainbow trout, and 82 mountain whitefish (Figure 7) resulting in a relative density of 1,162.2 fish per mile. Fish collected and processed from large pools at the foot of both River Bend Dam and Verdi Power Dam were included in length assessments, but not factored into fish per mile estimates. Average length of brown trout was 7.9 in (201 mm) and ranged from 2.8 in (72 mm) to 26.0 in (660 mm). Evidence of fair to moderate brown trout recruitment in 2011 occurred, with approximately 39% of brown trout captured as Class I or younger fish (<150 mm). Rainbow trout ranged from 1.9 in (47 mm) to 15.7 in (400 mm) and averaged 7.6 in (192 mm) overall. Approximately 43% of wild rainbow trout captured in Zone 5 were Class I or younger fish (<130 mm), suggesting good recruitment in 2011. Of the 224 rainbow trout captured, 44.6% (100 fish) were identified as wild fish. A relatively low percentage of wild rainbow trout was a direct result of sampling at Patagonia. During the 36 days preceding the survey, a total of 4,445 hatchery-reared rainbow trout had been stocked at Patagonia on three separate occasions. The majority of rainbow trout captured at this transect were undoubtedly from current stockings.

Figure 7.



Relative density of salmonids in the Truckee River across all transects and zones was 1,008.4 fish per mile. Fish estimates ranged from a low of 122.1 fish per mile at Painted Rock to a high of 3,300.0 fish per mile at Wingfield. Total species composition for all salmonids at all transects showed 54% rainbow trout, 35% brown trout, and 11% mountain whitefish (Figure 8). In comparison to the 2011 survey of the Truckee River, rainbow trout increased by 19%, while brown trout decreased by 5% and whitefish by 14%. Changes in relative density may be misleading since a limited number of transects were completed in 2011 due to extremely high flows.

Figure 8.



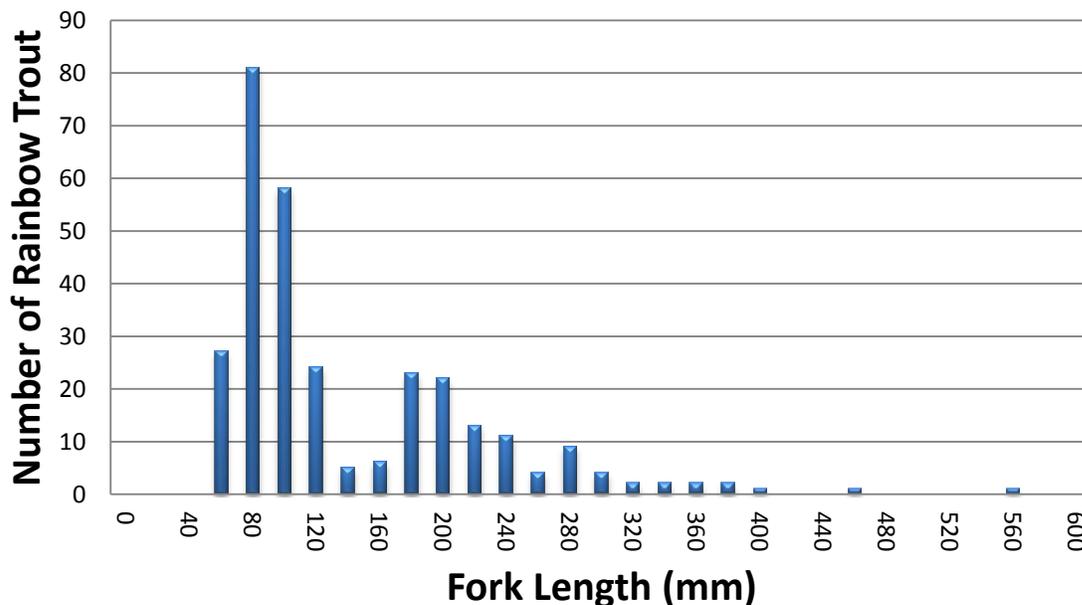
A length frequency analysis of the wild rainbow trout captured reveals at least six age classes currently inhabiting the Truckee River (Figure 9). A breakpoint of 5.1 in (130 mm) was used to distinguish Class I and younger fish while breakpoints of 9.8 in (250 mm), 12.2 in (310 mm), 15.7 in (400 mm), and 18.9 in (480 mm) were used to separate older age classes. Due to rainbow trout of various sizes being stocked throughout the year, it is important to note that a length frequency analysis was

completed only on rainbow trout that were identified as wild. Of the 298 wild rainbow trout analyzed, 64.4% (192 fish) were deemed as Class I or younger and were positive indicators of successful spawning in 2011 and 2012. Of particular note were extremely high numbers of Class I and younger fish sampled at the Rock Park and Wingfield transects. Of the 558 rainbow trout captured at all transects, 77.1% (430 fish) were deemed as wild.

Rainbow trout continue to do well in the Truckee River and consist of wild populations augmented with hatchery-reared fish to compensate for angling pressure and harvest. Historic survey data shows wild rainbow trout consistently outnumbered hatchery-reared trout since the late 1990's. However, a 19% reduction in wild rainbow trout was realized when compared to the 2011 survey. As previously discussed, this reduction was a direct result of the inordinate number of hatchery-reared rainbow trout caught at the Patagonia transect. A total of 97 hatchery-reared rainbow trout were found at the Patagonia transect, while only 30 hatchery rainbow trout were caught from all other transects combined.

Figure 9.

2012 Truckee River Electroshocking Survey Length Frequency of Rainbow Trout



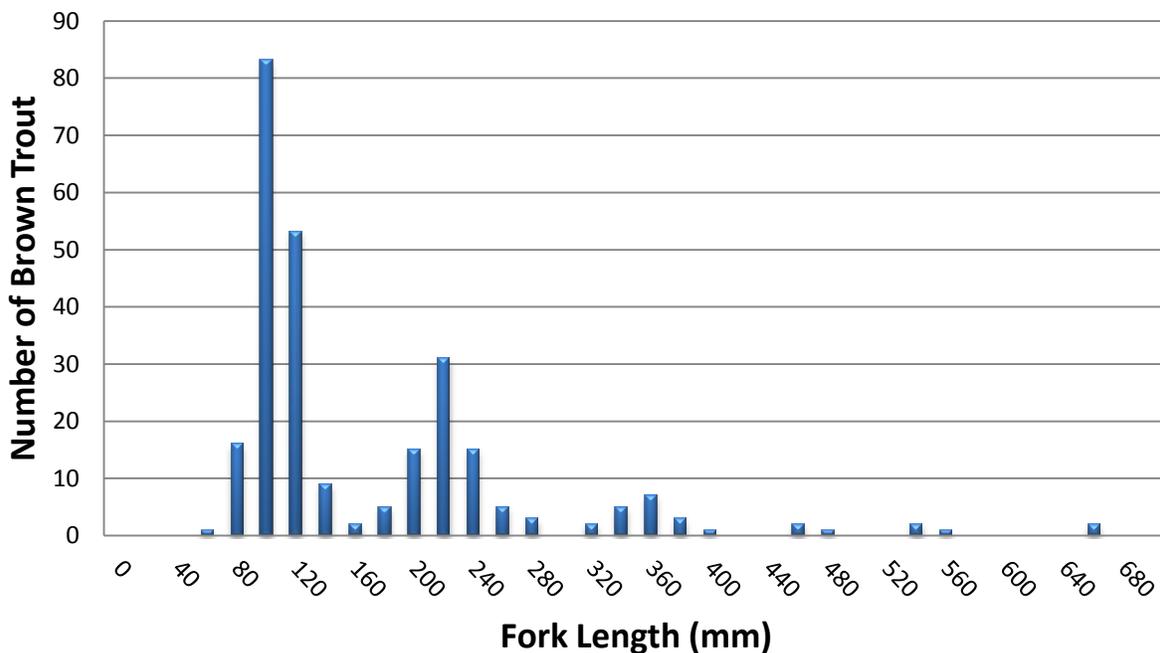
At least seven distinct age classes are readily apparent from a length frequency analysis of brown trout captured in the survey (Figure 10). A length breakpoint of 5.9 in (150 mm) was used to distinguish Class I and younger fish while breakpoints of 11.4 in (290 mm), 16.1 in (410 mm), 18.9 in (480 mm), 22.4 in (570 mm) were used to reveal older age classes found in the survey. Because they have not been stocked in the river since 2005, all brown trout captured were wild. Of the 264 wild brown trout analyzed,

62.1% (164 fish) were deemed to be Class I or younger and serve as a positive indicator of successful spawning in the past two years.

Brown trout populations continue to thrive in the Truckee River. Data suggests their populations have not declined since the brown trout stocking program was eliminated seven years ago. Of particular note was the presence of trophy-sized brown trout sampled at both the River Bend Dam and Verdi Power Dam transects. Although historically found during fall surveys of the river, large brown trout inexplicably disappeared from these transects from 2008 through 2010. However, this survey marks the second consecutive year in which large brown trout were found. Of note are four individual fish captured that were all greater than 20.5 in (521 mm), with the largest measuring 26.0 in (660 mm).

Figure 10.

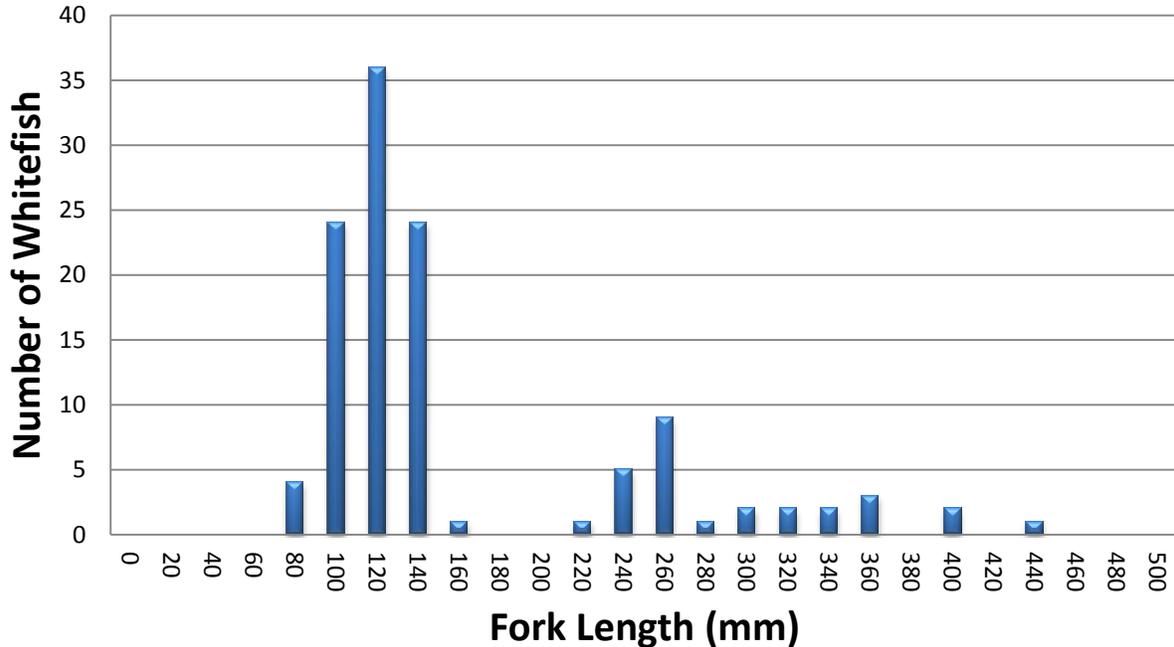
2012 Truckee River Electroshocking Survey Length Frequency of Brown Trout



Length frequency analysis of mountain whitefish captured during the survey reveals at least five distinct age classes in the Truckee River (Figure 11). A length breakpoint of 6.3 in (160 mm) was used to distinguish Class I and younger fish while breakpoints of 10.6 in (270 mm), 14.4 in (370 mm), and 16.1 in (410 mm) were used to reveal older age classes. Mountain whitefish represent a native unstocked species in the Truckee River. Of the 117 mountain whitefish analyzed, 76.1% (89 fish) were deemed to be Class I or younger fish and are positive indicators of successful spawning in the river in 2011 and 2012. It is also noted that mountain whitefish were only found in Zones 4 and 5 beginning at Rock Park and continuing at successive upstream transects.

Figure 11.

2012 Truckee River Electroshocking Survey Length Frequency of Mountain Whitefish



Coordinate and assist USFWS with raft electroshocking and shoreline electroshocking in the spring, summer, and fall as needed. Assistance with USFWS annual raft and shoreline electroshocking surveys was provided on one day in July.

Assist the Army Corps of Engineers and the Fish Passage Team to assess fish barriers and help design structures that will improve fish passage. The Army Corps of Engineers Fish Passage Team was not active in 2012.

Coordinate LCT recovery activities with the Truckee River Recovery Implementation Team. Actions pertaining to LCT restoration in the Truckee River basin are usually coordinated with the U.S. Fish and Wildlife Service and other members of the Truckee River Recovery Implementation Team (RIT) through semi-annual meetings. The Truckee River RIT did not meet in 2012. NDOW personnel attended the annual LCT Interagency Meeting in Reno, Nevada.

Collect fin samples from rainbow trout and LCT for genetic analysis during electroshocking surveys in cooperation with UNR. Fin samples were collected from all rainbow trout during the annual fish population survey. Samples were air dried in envelopes and are awaiting delivery to UNR.

Conduct a general assessment of angler use, success, and harvest through opportunistic angler contacts, return of angler drop-box surveys, and mail-in angler questionnaire data. Opportunistic angler contacts were made on six days in 2012. There were 44 anglers fished for 64.5 hrs and caught 40 fish consisting of 38 rainbow trout, 1 brown trout, and 1 mountain whitefish. Of these, 4 were harvested (3 rainbow trout and 1 brown trout), while the remaining 36 were released. Catch rates were 0.91 fish per angler and 0.62 fish per hour. The fork length of the solitary fish measured (a brown trout) was 11.7 in (298 mm). Observed angler use showed 91% Washoe County anglers, 2% from other counties in Nevada, and 7% nonresidents.

A total of 67 volunteer angler surveys were received from the two drop-boxes on the Truckee River in 2012. Anglers fished for 174.5 hrs and caught 192 fish consisting of 147 rainbow trout, 39 brown trout, 1 LCT, and 5 mountain whitefish. Resulting catch rates (all fish) were 2.87 fish per angler and 1.10 fish per hour. Of the 192 fish reported, all but 6 rainbow trout were released. Species composition was 76.6% rainbow trout, 20.3% brown trout, 2.6% mountain whitefish, and 0.5% LCT (Figure 12).

An examination of lengths reported by anglers from drop-box surveys showed representation by rainbow trout in all eight size brackets (Figure 13). It comes as no surprise that 90% of rainbow trout reported occupied the smallest three size brackets (<10.0 in, 10.0 – 11.9 in, and 12.0 – 13.9 in); however, fish were reported in the four largest size brackets as well. Brown trout occurred in all size brackets less than 18.0 in with over 70% of fish reported in the smallest two brackets. A vast majority of mountain whitefish were less than 10.0 in, while the single LCT was 14.0 – 15.9 in.

Angler satisfaction fishing the Truckee River was rated on a scale of -2 to +2 with -2 being unsatisfied and +2 representing satisfaction. Average ratings were positive at 0.59 for total fishing experience, 0.35 for size of fish, and 0.04 for number of fish. A direct relationship was seen between angler success and satisfaction (Figure 14). This suggests an increase in angling success leads to increasing angler satisfaction.

The Mail-in Angler Questionnaire Survey estimated Truckee River use at 6,451 anglers and 57,917 angler use days, with 112,574 fish caught. These estimates were substantially lower than the 9,411 anglers, 99,153 angler days, and 204,726 fish reported from 2010. However, the estimated catch rate of 1.94 fish per day found in 2011 is nearly identical to the rate of 2.06 fish per day found the previous year.

From late-March through mid-November, the Truckee River received 71,130 triploid-strain rainbow trout on 16 separate occasions (Table 1). Because of collaborative efforts between NDOW, USFWS, and PLPT, efforts have been made in recent years to implement a stocking strategy that facilitates LCT recovery in the Truckee River, while simultaneously maintaining a quality sport fishery. As such, both LCT and triploid-strain rainbow trout have been stocked in relatively equal numbers. However, due to poor spawning performance of LCT brood stock at Marlette Lake for the past two years, only triploid-strain rainbow trout were stocked in 2012. The river is scheduled for the same in 2013.

Figure 12.

2012 Truckee River - Angler Drop Boxes Species Composition

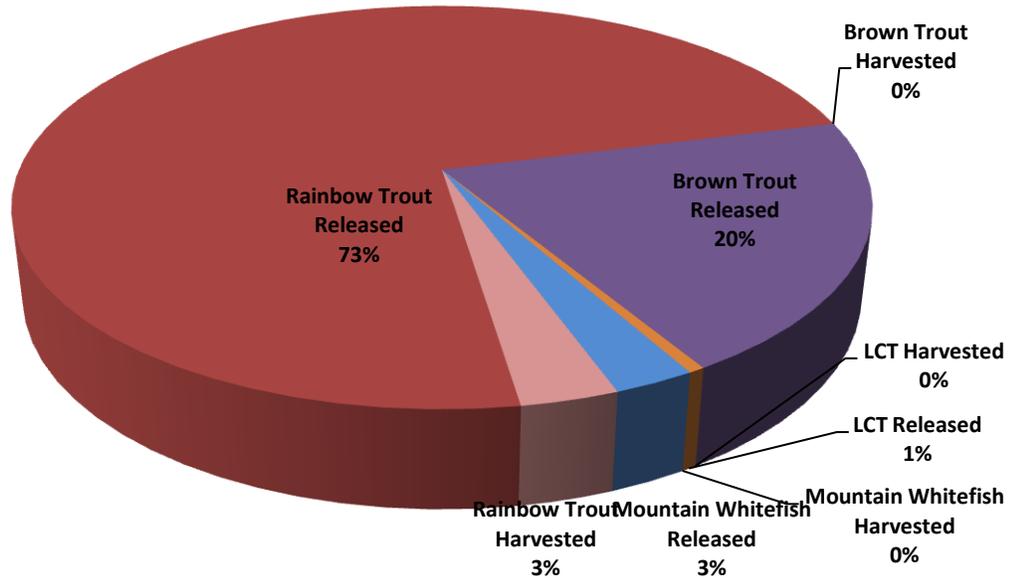


Figure 13.

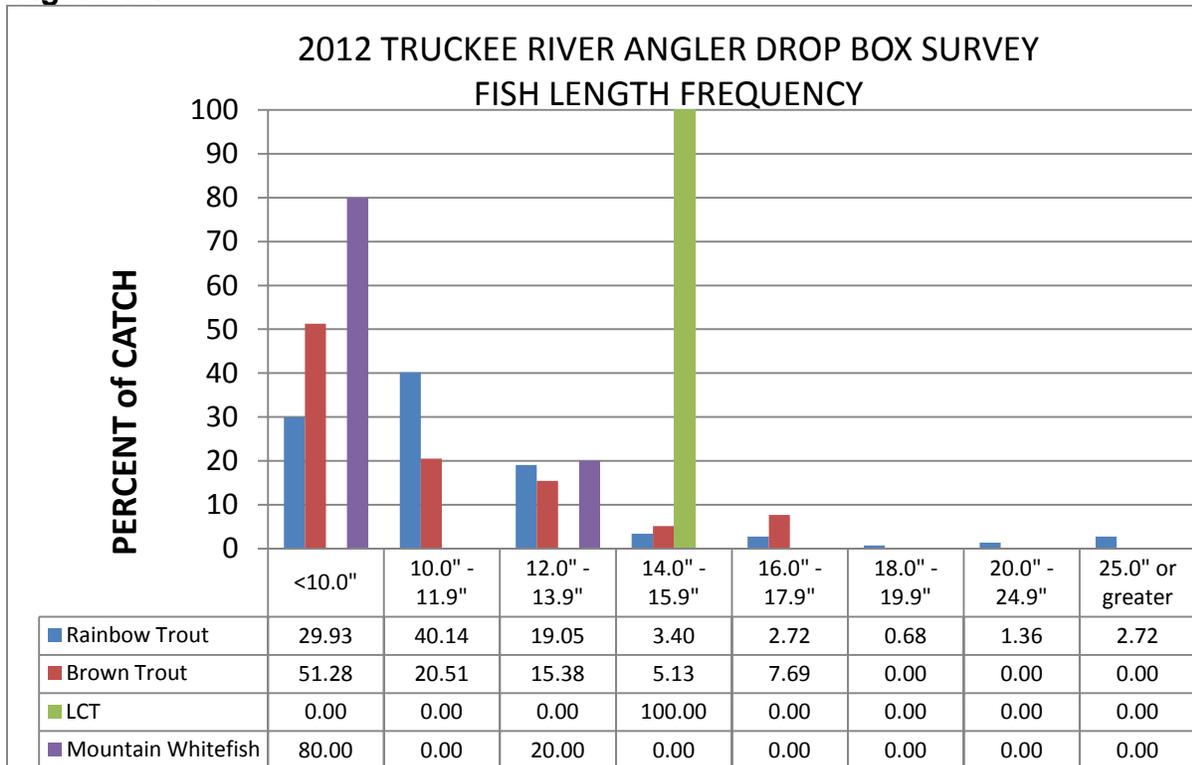


Figure 14.

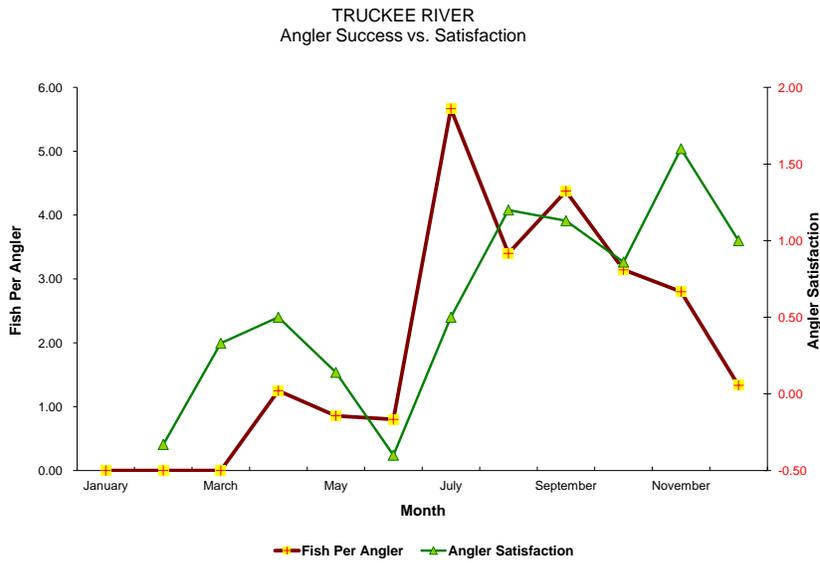


Table 1.

Nevada Department of Wildlife 2012 Truckee River Stocking Summary					
Date	Species	Strain	Number Stocked	Pounds Stocked	Average Length (in.)
3/26/12	Rainbow Trout	Triploid	7002	1800	8.6
3/29/12	Rainbow Trout	Triploid	2835	750	8.7
4/4/12	Rainbow Trout	Triploid	4810	1300	8.8
4/18/12	Rainbow Trout	Triploid	3108	1200	9.9
4/25/12	Rainbow Trout	Triploid	3540	1200	9.5
6/16/12	Rainbow Trout	Triploid	3297	1570	2.1
6/27/12	Rainbow Trout	Triploid	1694	700	10.1
7/2/12	Rainbow Trout	Triploid	5900	2000	9.5
7/18/12	Rainbow Trout	Triploid	5380	2000	9.8
7/26/12	Rainbow Trout	Triploid	5274	1800	10.0
8/8/12	Rainbow Trout	Triploid	5148	1800	9.6
8/22/12	Rainbow Trout	Triploid	4318	1700	9.9
9/11/12	Rainbow Trout	Triploid	4340	1650	9.8
9/19/12	Rainbow Trout	Triploid	5310	1800	9.5
10/2/12	Rainbow Trout	Triploid	3990	1500	9.8
11/14/12	Rainbow Trout	Triploid	5184	2225	10.2
TOTALS	Rainbow Trout	Triploid	71,130	24,995	9.1

Coordinate with cities, counties, and other entities to develop rafting access points. There were limited opportunities in 2012 to coordinate with cities, counties, and other entities to develop boat (raft) access points at suitable locations along the river. No additional raft access points were constructed in 2012.

Maintain the angler information center and angler drop-boxes when on site. The angler information center and drop-boxes were visually inspected and/or restocked on a regular basis.

MANAGEMENT REVIEW

General Management Objective

Although snowpack from the winter of 2011/2012 was far less than desirable, the river did not experience any noticeable ill effects in 2012. With most of the storage reservoirs in the Truckee River basin remaining full throughout the year, flows in the river were maintained throughout 2012. Residual effects from the previous winter's heavy snowpack were evident in observed discharge, which resulted in favorable fishing conditions throughout the year. On the contrary, it is feared that another winter of precipitation and snowpack that are well below average could leave the Truckee River fishery imperiled.

At this juncture, sport fish populations in the Truckee River appear to be stable. Coupled with the river's wild population of rainbow trout, hatchery-reared fish annually augmented appear to meet angler demand. Although not stocked since 2005, reductions in brown trout abundance have not been evident. Angler demand for brown trout is currently being met through natural reproduction and recruitment.

Angler success rates documented through opportunistic angler contacts, angler drop-box surveys, and Mail-in Angler Questionnaire Surveys are on par with long-term averages and currently meet the guidelines prescribed in a coldwater General Fishery Management Concept.

Approaches were either completed or resulted in some degree of progress in 2012. Many of the approaches involving fish passage, increased public access, and coordination/participation with other agencies are long-term projects that will require continued effort for a number of years before significant on-the-ground improvements are realized. However, these approaches are necessary and can eventually result in positive changes for the Truckee River.

LCT recovery on the Truckee River continues to prove challenging. Although it is recommended that approximately half of the trout stocked be comprised of LCT, poor spawning success from the LCT broodstock at Marlette Lake has prevented these plans from reaching fruition. It appears that LCT stocking in the Truckee River will be temporarily postponed until either a significant LCT spawn is achieved at Marlette Lake or an additional source of LCT is found.

RECOMMENDATIONS

- Monitor water quantity (discharge) through USGS Stream Flow data.
- Monitor fish populations by conducting tote-barge electroshocking surveys at 11 traditional transects during three days in the fall.
- Coordinate and assist USFWS with raft electroshocking and shoreline electroshocking in the spring, summer, and fall, as needed.
- Coordinate LCT recovery/restoration activities with the Truckee River Recovery Implementation Team.
- Collect fin samples from rainbow trout and LCT for genetic analysis during electroshocking surveys in cooperation with UNR.
- Conduct a general assessment of angler use, success, and harvest through opportunistic angler contacts, return on angler drop-box surveys, and mail-in angler questionnaire data.
- Maintain the angler information center and angler drop-boxes when on site.

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