NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE SPORT FISHERIES MANAGEMENT

FEDERAL AID JOB PROGRESS REPORT

F-20-50
2014

SOUTH FORK RESERVOIR
EASTERN REGION

NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
ANNUAL JOB PROGRESS REPORT

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NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
ANNUAL JOB PROGRESS REPORT

State: *Nevada*
Project Title: *Statewide Fisheries Program*
Job Title: *South Fork Reservoir*
Period Covered: *January 1, 2014 through December 31, 2014*

SUMMARY

South Fork Reservoir received above average angler use in 2014 due in part to relatively good reservoir capacity, increased trout stocking, and its close proximity to urban areas in Elko County. Despite regional drought conditions for three consecutive years, South Fork Reservoir finished 2014 at approximately 75% of capacity, with the main boat ramp still in service and no major angler inconveniences observed.

Twenty-four days of random angler surveys on South Fork Reservoir contacted 436 anglers from January through December 2014. Anglers reported fishing 1,209.5 hrs to catch 815 fish for an annual average catch rate of 0.71 fish per hour and 1.97 fish per angler. The average harvest size for rainbow trout during 2014 was 16.0 in (FL) and bowcutt trout had an average harvest size of 19.1 in (FL). A total of 170,990 trout (133,930 catchable >8.0 in) were stocked during 2014.

Interest in fishing for bass species and catfish continues to increase, even during the catch-and-release season (March 1 through June 30) for black bass. Average size of warmwater fish harvested in 2014 was 21.5 in TL for three channel catfish surveyed. Eight NDOW trophy certificates for channel catfish were submitted from April through October for channel catfish ranging in size from 10.1 pounds up to 26.5 pounds, and three trophy certificates for wipers ranging from 6.0 to 11.5 pounds.

Four gill nets were set on April 29, 2014 and caught a total of 63 rainbow trout, 8 bowcutt trout, 11 wipers, 1 largemouth bass, 1 smallmouth bass, 9 Lahontan tui chub, and 9 Tahoe suckers for a survey total of 102 fish. The overall fish composition of the four nets combined was: trout (rainbow and bowcutt) 70%, wiper 11%, Black bass 2%, tui chub 9%, and Tahoe sucker 9%. The non-game fish to game fish ratio was 0.2**:**1.0, or a percent ratio of 18% to 82%. This trend is well below the 19-year average of 1.3**:**1.0 non-game to game fish ratio observed in the reservoir.

A total of 104 smallmouth and 190 largemouth bass were sampled during all 2014 electrofishing surveys, with good representation of the older age classes present for both species. The average size of all smallmouth bass sampled in 2014 was 10.2 in TL. The largemouth bass averaged 11.7 in TL and all largemouth bass sampled were in good condition, with the largest measuring in at 18.7 in and weighing 4.14 pounds.

Two spillway salvages occurred on May 12 and July 15, 2014, capturing a total 87 game fish consisting of 27 largemouth bass at 13.8 in TL, 48 smallmouth bass at

13.0 in TL, and 12 wipers at 20.9 in TL. All fish captured were returned to the reservoir.

A digital recording thermograph was installed in South Fork Reservoir on April 8 to monitor water temperature for forecasting black bass spawning behavior during 2014. Preferred temperature for black bass nesting and subsequent spawning should have been initiated on or around May 13-24, with no deleterious temperature disturbances occurring through the late spring to ensure optimum spawning and rearing conditions for largemouth and smallmouth bass. GPS mapping of visible black bass spawning nests occurred from late-April through mid-June, with most active nesting was recorded during the May 13-June 4 period.

A total of seven days were spent collecting vertical plankton tows to survey for quagga mussel presence. A total of 26 individual samples were evaluated for the presence of quagga veligers. On July 14 at the Coyote Cove site, the qPCR testing resulted in a positive result for zebra mussels. Due to the high boater use of this reservoir, sampling intervals were increased and five sites were sampled immediately after the positive results were received. These samples produced positive qPCR results for zebra mussels at four of the five sites. The next round of samples were collected on August 25, and all remaining samples for 2014 came back negative for both zebra and quagga mussels. Visual surveys of exposed shoreline and the removed boat ramp resulted in no adult quagga mussels being observed. To date, no quagga mussels have been detected from lab analysis or tactile surveys.

BACKGROUND

Unusual in concept for Nevada, the South Fork Dam was constructed in 1988 exclusively to create a recreational-based reservoir. The 40,000 acre-ft impoundment inundates approximately 1,650 acres and is a year-around multi-recreational attraction. The reservoir filled for the first time in 1995 and angler visits alone exceeded 25,000 days. A multi-storied fishery of stocked trout, black bass, catfish, and recently wipers has been established since water was first stored. Currently managed under a coldwater, Quality Fishery Management Concept, and, despite heavy angling pressure, the fishery continues to produce quality and occasional trophy size game fish on a constant basis. Careful attention is required in administration of management initiatives and monitoring of angler harvest and fish body condition as both recreational sport fish interest and the regional angler population increase.

OBJECTIVES and APPROACHES

Objective: General Sport Fisheries Management.

Approaches:

- Conduct a general fisheries assessment through opportunistic angler contacts.
- Salvage fish below South Fork Reservoir spillway after spring runoff as needed.

- Delineate smallmouth bass preferred nesting areas (GPS location, depth, distance from shore, substrate type) during 4 days in spring.
- 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.

Objective: Monitor tui chub impacts on the rainbow trout fishery and effectiveness of wipers in controlling tui chub.

Approaches:

- Examine spawning and recruitment potential of black bass by monitoring water temperature variations using digital recording thermograph.
- Examine growth and forage selection in late summer by electrofishing a minimum of 75 black bass.
- Set experimental gill nets for four net-nights in the spring.
- Analyze data and write up final report of study. Maintain regional database of marked fish for continued documentation and evaluation of species.

PROCEDURES

General fisheries assessments consisted of a minimum of two days of creel surveys scheduled per month that documented and analyzed trends exhibited within the primary trout fishery. Data collection included number of anglers, location, target species, and harvest. Harvest data included species, size to TL, and representative weights, as well as fin clips, marks, and an assessment of condition. Data was compiled and analyzed.

Two different survey techniques were utilized in the monitoring of quagga mussels including, plankton tows and visual/tactile surveys. Plankton net tows were conducted June through October for all three locations. A 63 µm mesh plankton net was used to take vertical samples at various depths. These samples were then preserved in ethanol and sent off for lab analysis. As the boat ramp docks at South Fork Reservoir were removed from the water at the end of the year, a thorough inspection was made of the entire dock.

The South Fork Reservoir spillway salvages utilized the regional electroshocking barge and backpack electroshocker, three netters, and a small fish truck to capture and transplant game fish from the outlet tube channel and returned to the reservoir.

The black bass population inventory occurred in May and August 2014 with the Coffelt electroshocking barge. The two fixed probe anodes were utilized with the barge serving as the cathode. Electroshocking efficiency was fair to good in drawing and holding fish despite the cloudy water conditions. All fish were netted and held in the live well until completion of the transect. Selected fish were measured, weighed, and then

released. Electroshocker settings and other relevant information during this inventory are listed in the following:

2014 Survey – (May – August)

Pulse - DC	Pulse Width (millisec) – 5	Time – 2000-2330 hrs
Volts – 680	Pulse Freq. (per sec) – 120	Water Condition – cloudy, weeds moderate
Output (amps) – 4-5	Shocking Time – 5,552 seconds (93 minutes = 1.54 Hr.)	Water Temp (°F) – 70

On April 29, 2014 at 1820 hrs in the evening, the first of four gill nets was set in South Fork Reservoir. A 150' *x* 6' net was set along the east shoreline mid to south end of the reservoir near the North Shore campground. The second net was a buoy set in the north-east side of the reservoir, south of the no–wake buoy boundary. The third net measured 150 ft *x* 6 ft and was a buoy set at the southwest side, south of the no-wake zone. The fourth net measured 150 ft *x* 6 ft and was set at 1915 hrs off the northeast shoreline below the A-frame housing compound. The four nets were fished overnight for a total of 59.3 hours, or 14.8 hours each.

A HOBO Water Temp Pro data logger, recording thermograph was installed near the perimeter of the reservoir by the main boat landing from April through October.

Smallmouth bass preferred nesting areas were delineated through visual surveys from a boat during May-June 2014 when conditions were favorable (i.e., no wind).

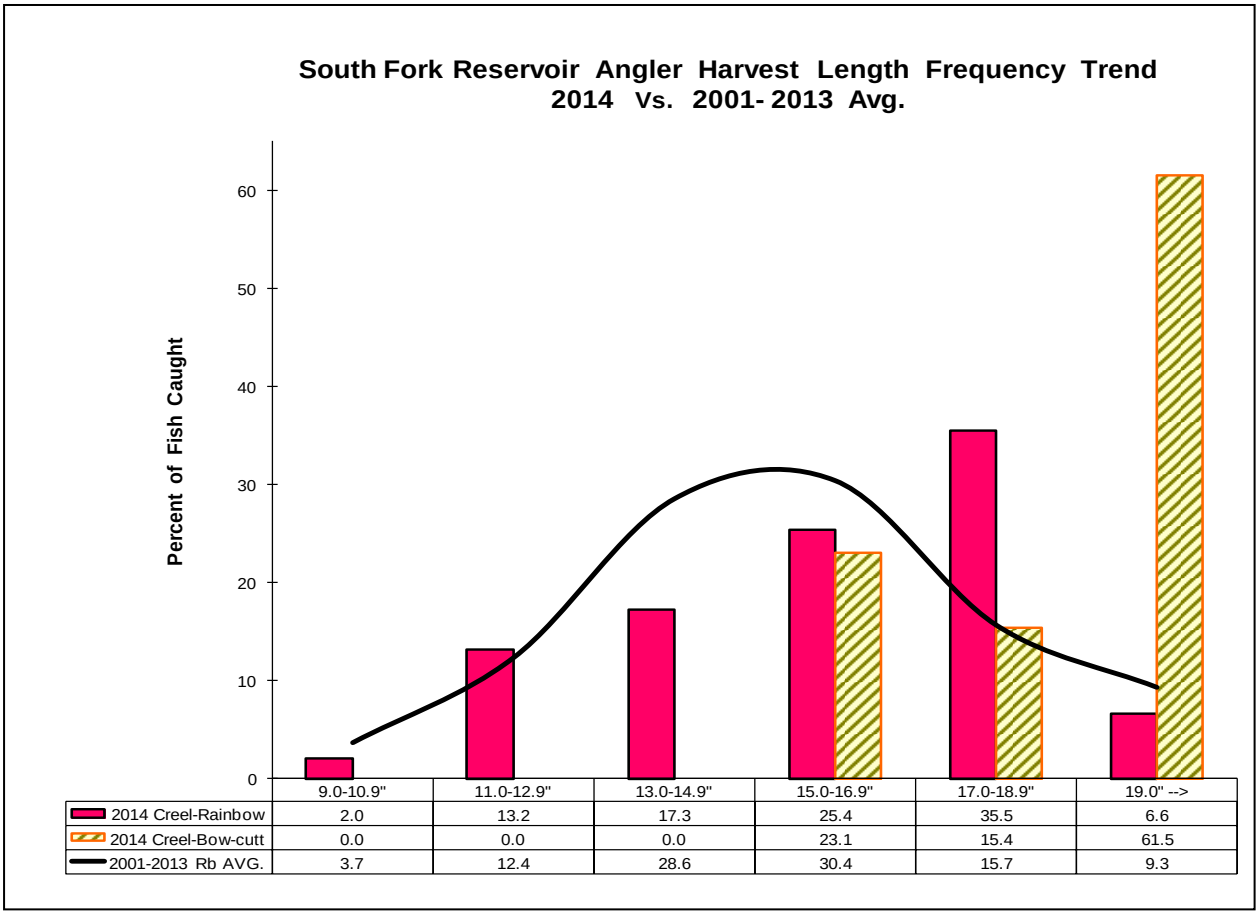
FINDINGS

General Sport Fisheries Management

Opportunistic Angler Contacts and Surveys

During 2014, 436 anglers were contacted at South Fork Reservoir during 24 days of roving angler surveys (Table 1). A total of 1,209.5 hrs of fishing effort was expended to catch 858 fish, of which 551 were released (64% of total catch). Overall angler success was 0.71 fish per hour and 1.97 fish per angler. The average harvest size for 197 rainbow trout measured was 16.0 in FL (Table 1). Figure 1 illustrates angler harvest and rainbow trout length frequency and compares it with the 12-year average. Approximately 42% of the rainbow trout sampled in 2014 were greater than 17.0 in, significantly higher compared to the long term average of 25% during the period of 2001-2013.

Figure 1.



	9.0-10.9"	11.0-12.9"	13.0-14.9"	15.0-16.9"	17.0-18.9"	19.0" -->
2014 Creel-Rainbow	2.0	13.2	17.3	25.4	35.5	6.6
2014 Creel-Bow-cutt	0.0	0.0	0.0	23.1	15.4	61.5
2001-2013 Rb AVG.	3.7	12.4	28.6	30.4	15.7	9.3

Of the 197 rainbow trout measured, 188 fish were also weighed for body condition analysis, resulting in 4.3% in poor condition, 29.3% in fair condition, 53.7% in good condition, and 12.8% in excellent condition. The 188 fish measured and weighed averaged 16.0 in FL and 1.94 lbs and had an overall condition rating of good.

Bowcutt trout also showed a positive, but limited return to the angler. For the 13 fish measured, there was excellent growth at an average harvest size of 19.1 in (range from 15.7 – 23.1 in FL). Figure 1 also illustrates that 62% (8 fish) of the bowcutt trout harvested were greater than 19.0 in. No bowcutt trout were stocked in South Fork Reservoir in 2014 due to a poor spawn and egg take at brood stock facilities, but 21,200 sub-catchable size (7.3 in) bowcutt trout were stocked in November 2012. This hybrid trout species continues to assist in biological control of non-desirable fish species and increases recreational angling opportunities for larger trout.

Fish stocking for South Fork Reservoir during 2014 resulted in 133,940 catchable trout, 28,900 sub-catchable trout, and 8,160 fingerling trout (Table 2). Total number of trout stocked in 2014 was up significantly from previous years, due to drought conditions and reduced stocking at other regional fisheries.

No warm water fish species (channel catfish or wipers) were stocked in 2014 due to drought concerns and improvements realized in the control of nongame fish species of concern (chub and sucker) within the reservoir. Augmentation of catfish and wipers will be evaluated on a yearly basis to determine the need and efficacy in their management role of the fishery.

Average size of warmwater fish harvested in 2014 was 21.5 in TL for three channel catfish measured. Also, eight NDOW trophy certificates for channel catfish were submitted from April through October for channel catfish ranging in size from 10.1 pounds up to 26.5 pounds, and three trophy certificates for wipers ranging from 6.0 to 11.5 pounds.

South Fork Reservoir began the year at approximately 80% capacity and finished at 75%, or approximately 30,000 acre-feet of reservoir capacity. Water discharge through the dam outlet tubes was monitored by State of Nevada, Division of Water Resources and managed as a flow in – flow out regime, with the only loss of water occurring through natural pan evaporation during the warm summer months.

Spillway Channel Fish Salvage

Ocular surveys of the concrete spillway channel and outlet tubes below South Fork Reservoir dam revealed good quantities of game fish present and it was determined that a salvage effort would be made in 2014. Two spillway salvages occurred on May 12 and July 15, 2014, capturing a total 87 game fish consisting of 27 largemouth bass at 13.8 in TL, 48 smallmouth bass at 13.0 in TL, and 12 wipers at 20.9 in TL. All fish were returned to the reservoir.

Quagga mussel surveys

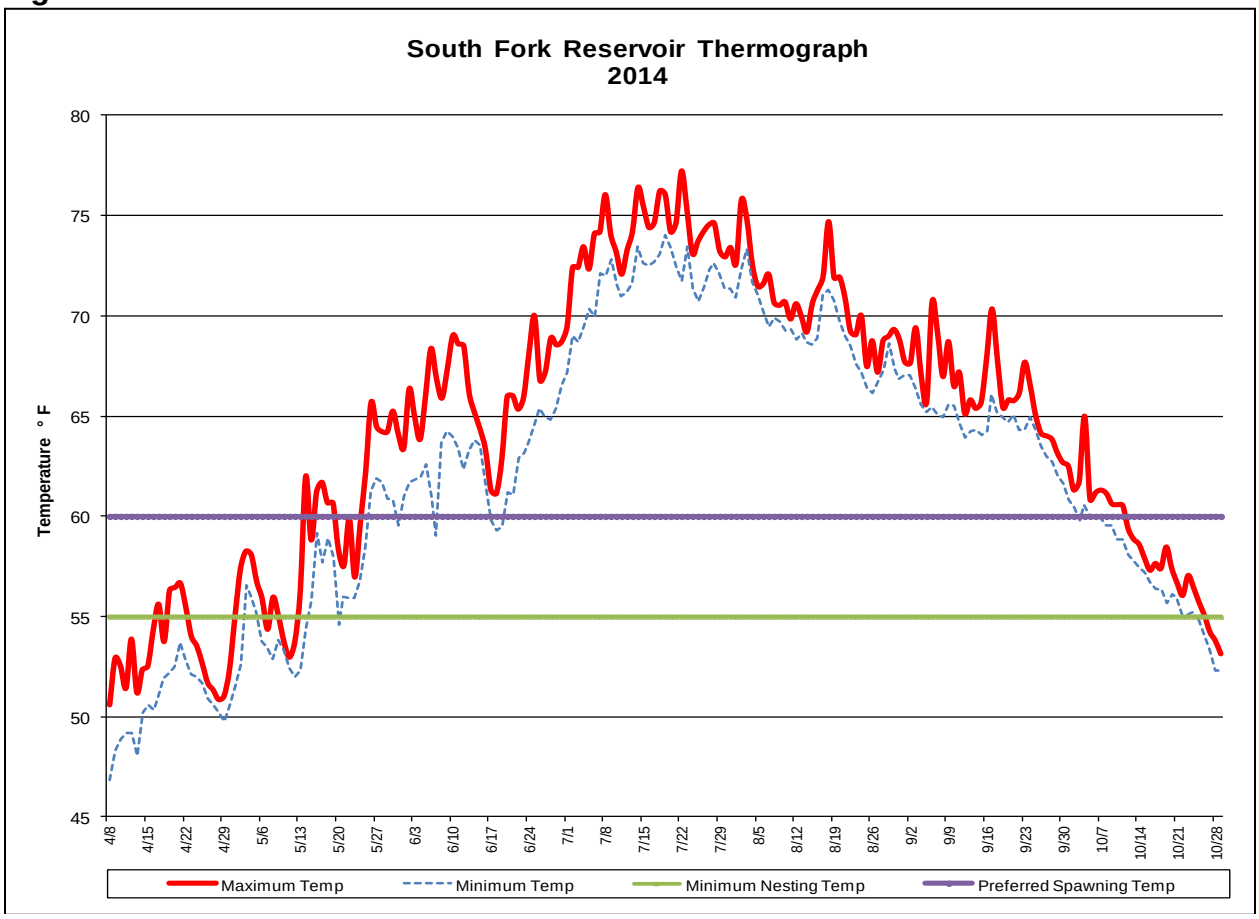
Surveys were conducted on June 23, July 14, August 5 and 27, September 2 and 8, and October 7. Two samples were taken at each of the sample sites, resulting in a total of 26 individual samples that were sent to two separate labs for analysis. On July 14 at the Coyote Cove site, the qPCR testing resulted in a positive result for zebra mussels. Due to the high boater use of this reservoir, sampling intervals were increased and five sample sites were sampled immediately after the positive results were received. These samples produced positive qPCR results for zebra mussels at four of the five sites. The next round of samples were collected on August 25 and all remaining samples for 2014 came back negative for both zebra and quagga mussels. These positive zebra mussel results could be the result of a contaminated boat being launched in the reservoir, however, the positive results that later disappeared may be explained by the contaminated boat containing only dead mussels and only residual DNA was detected before being washed out of the reservoir system.

South Fork Reservoir Fishery Study

Water Temperature Monitoring

A digital recording thermograph was installed in South Fork Reservoir to monitor water temperature for predicting black bass spawning during the spring and summer. The thermograph was placed approximately 36 inches below the surface off an anchored buoy chain near the main boat landing to allow the thermograph to remain at a consistent depth throughout the season. Based on recorded temperatures, preferred black bass nesting and subsequent spawning should have been initiated during the second week of May (see Figure 2). With no deleterious temperature disturbances occurring through late spring, optimum spawning temperatures were ensured for largemouth and smallmouth bass. The thermograph recorded a maximum water temperature of 77.2°F on July 22 and minimum temperature of 50.6°F on April 8, 2014.

Figure 2.



Mapping of Spawning Bass

Ocular surveys of spawning black bass species during mid-spring reservoir temperature patterns occurred during May and early June, with fair success of observing active bass nest. Mid-morning winds and cloudy days prevented clear

observations, but early morning surveys on May 13 and June 4, 2014 produced good numbers of active nest. Smallmouth bass were observed in 3.9-7.5 feet of water on bedrock and gravel substrates on the May 13 survey, with a recorded water temperature of 51.8-52.6°F. The June 4, 2014 survey produced all largemouth bass nests, varying in water depth from 2.1 to 4.5 feet of water, with a water temperature of 61.9 to 63.4°F. The largemouth bass nests were observed on various bottom types including mud flats with a woody structure nearby to cobble/gravel with aquatic weeds nearby.

All active bass nests were mapped with GPS coordinates and stored in regional files. In 2014, it appeared that the smallmouth were first to stage and prepare for spawning and in deeper water whereas largemouth appeared to come on later in May and spawn in shallower depths. Observations of spawning behavior correlates closely with the 2014 recorded thermograph temperature regime in Figure 2. No active nests were observed on the June 13, 2014 survey and weed growth was dominating the reservoir bottom, obscuring nest location and making visibility difficult.

Sport Fish Population Surveys

A total of 104 smallmouth and 190 largemouth bass were sampled during all 2014 electrofishing surveys, with good representation of the older age classes present for both species. The average size of all smallmouth bass sampled in 2014 was 10.2 in TL, however, the 48 smallmouth bass captured and returned to the reservoir from the two spillway salvages had an average size of 13.0 in and the remaining 56 smallmouth captured in the reservoir had an average size of 7.7 in TL. The Relative Stocking Density 10 (RSD-10) factor equated to 84, indicating a population sampled that was dominated by larger adult fish (>10+ in TL) (Figure 3).

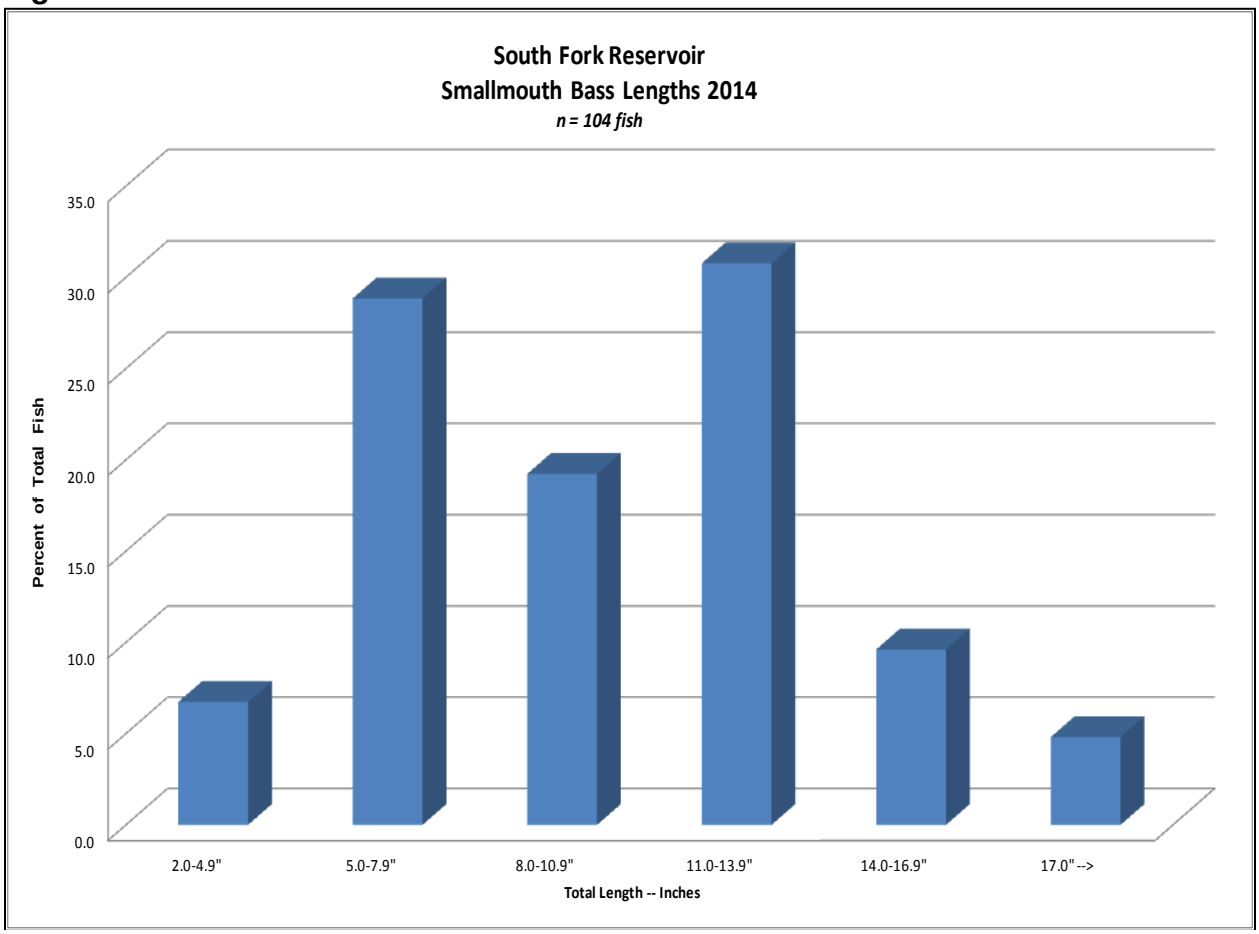
The largemouth bass sampled were also in good condition, with the largest measuring in at 18.7 in and weighing 4.14 pounds. A total of 190 largemouth bass were sampled over four electrofishing surveys (163 reservoir and 27 spillway salvages), up significantly from the last four years. All largemouth bass were measured, while 43 were weighed for body condition analysis. The 43 largemouth bass averaged 11.7 in TL and weighed an average of 1.27 pounds, and had an average body condition value of 5.43 for a rating of Good.

The South Fork Reservoir largemouth bass population continues to expand every year, with the dominant cohort of largemouth bass (Class VII+; 2006 year class) leading the way and carrying forward in annual population surveys (Figure 4). Approximately 163 South Fork Reservoir largemouth bass with an average length of 11.3 in TL were transported to Fallon, Nevada in the summer of 2014 to be utilized as a broodstock source for future use in warmwater fish stocking as fisheries rebuild from prolonged drought conditions.

A total of 14 wipers were contacted during the electroshocking survey and two spillway fish salvages, with 12 collected, tagged, and returned to the reservoir and 2

captured and tagged during the August electroshocking survey. The average size of the 14 wipers electroshocked was 21.6 in TL and all were added to the regional wiper database. Only one channel catfish was electroshocked this summer and it measured 18.0 in TL.

Figure 3



The 2014 spring gill nets caught a total of 63 rainbow trout, 8 bowcutt trout, 11 wipers, 1 largemouth bass, 1 smallmouth bass, 9 Lahontan tui chub, and 9 Tahoe suckers for a survey total of 102 fish (Table 5). The rainbow trout ranged from 6.8 to 20.9 in and averaged 13.0 in TL, the bowcutt trout ranged from 17.9 inches to 23.2 in and averaged 21.3 in TL, the 11 wipers averaged 20.5 in TL, the largemouth bass measured 11.4 in TL and the smallmouth bass was 13.8 in TL. The Lahontan tui chub averaged 13.4 in TL, and the Tahoe sucker averaged 16.1 in TL.

Of the 63 trout captured in 2014, 26 rainbows (41%) were from the recent spring 2014 stocking effort. K-factor analysis and body condition rating was performed on 36 of the 63 captured rainbow trout. All rainbow trout measured and weighed had an average of 15.6 in FL, an average weight of 28.6 ounces, and a K-factor value of 4.26 for a rating of good. One fish had a rating of poor, 14% fair (5 fish), 61% good (22 fish) and 22% received a rating of excellent (8 fish).

Figure 4

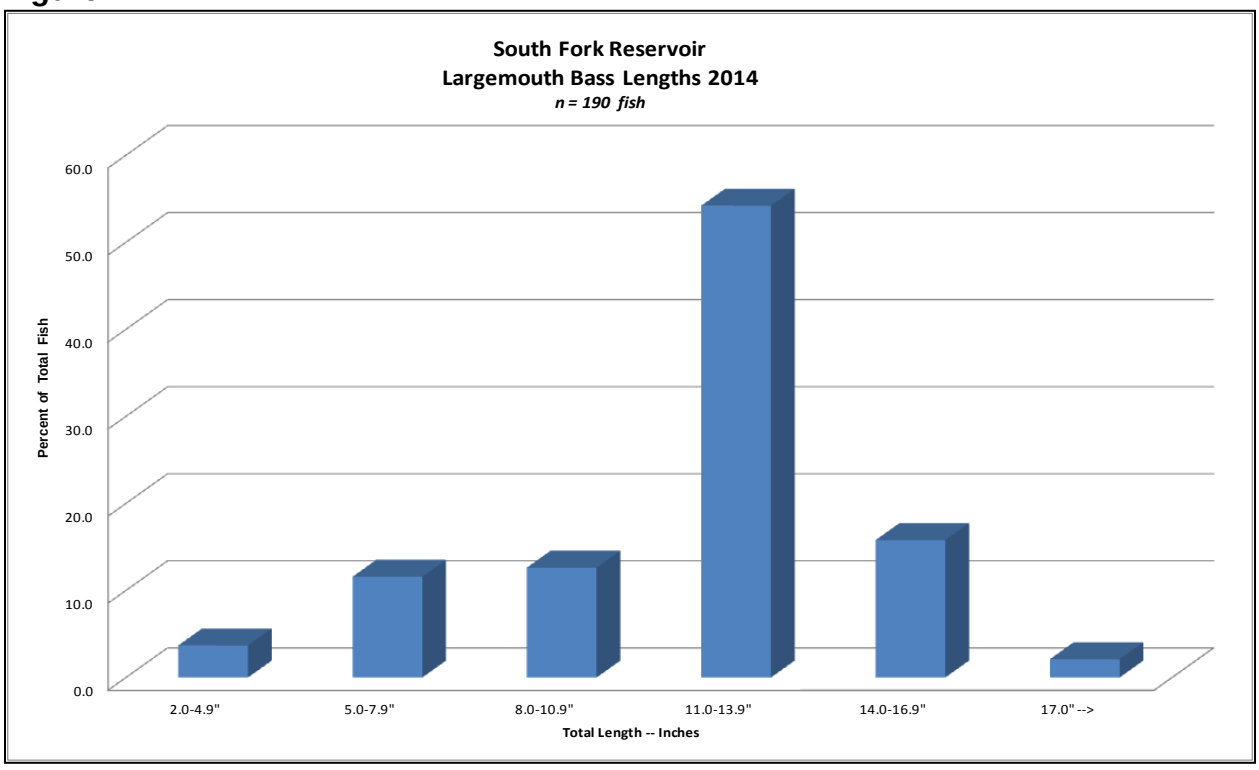
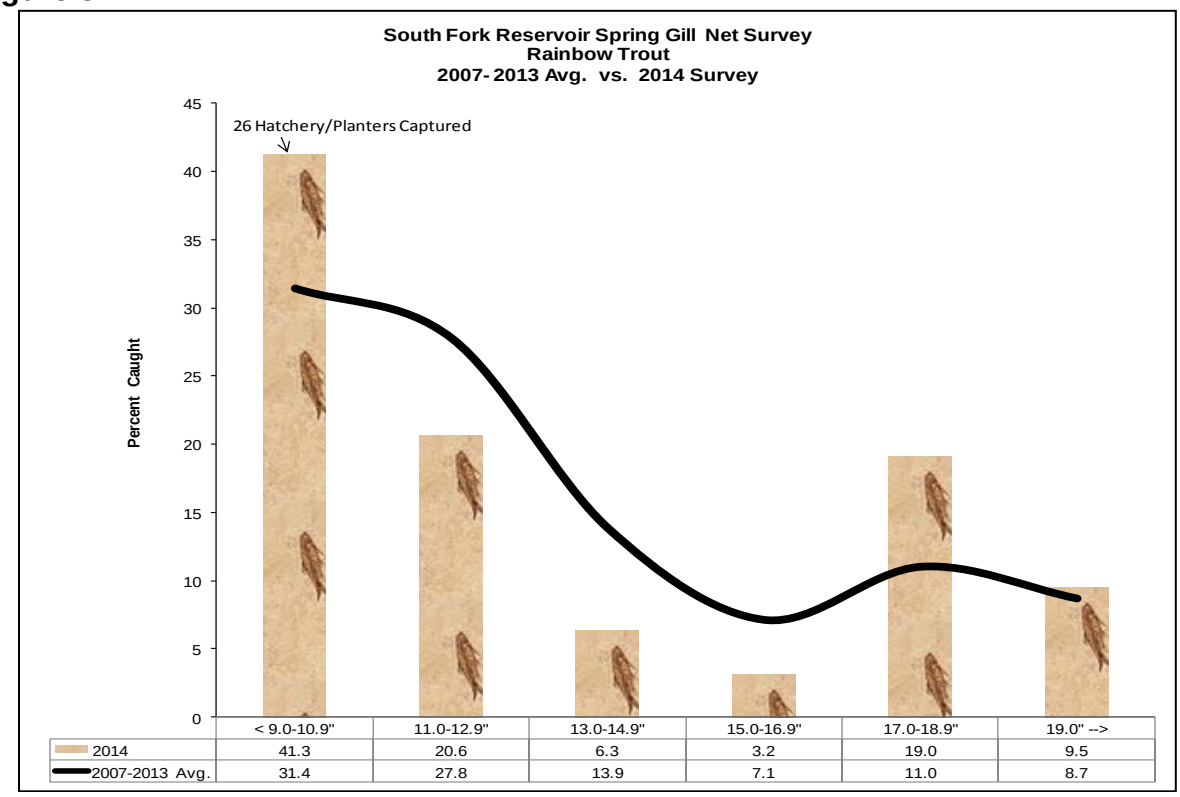


Figure 5 illustrates the length frequency of the rainbow trout captured in the gill net population survey for 2014 and compares it with the average from 2007-2013 surveys. There was good size class representations of larger fish (15.0 – 18.9 in) caught in 2014 compared to the cumulative seven-year average. No adipose fin clipped rainbow trout representing the Bel-Air strain or left pectoral fin clipped trout representing the Eagle Lake strain were captured in the gill net survey. Monitoring of both strains continues as part of the rainbow trout strain evaluation study currently underway at South Fork Reservoir and other proximal fisheries.

The overall fish composition of the four nets combined was trout (rainbow and bowcutt) 70%, wiper 11%, Black bass 2%, tui chub 9% and Tahoe sucker 9%. The non-game fish to game fish ratio was 0.2**:**1.0, or a percent ratio of 18% to 82% (Figure 6). This trend is well below the 19-year average of 1.3**:**1.0 non-game to game fish ratio observed in the reservoir. The only fish of concern caught during the 2014 survey was the capture of the nine adult tui chub, with an average size of 13.4 in TL.

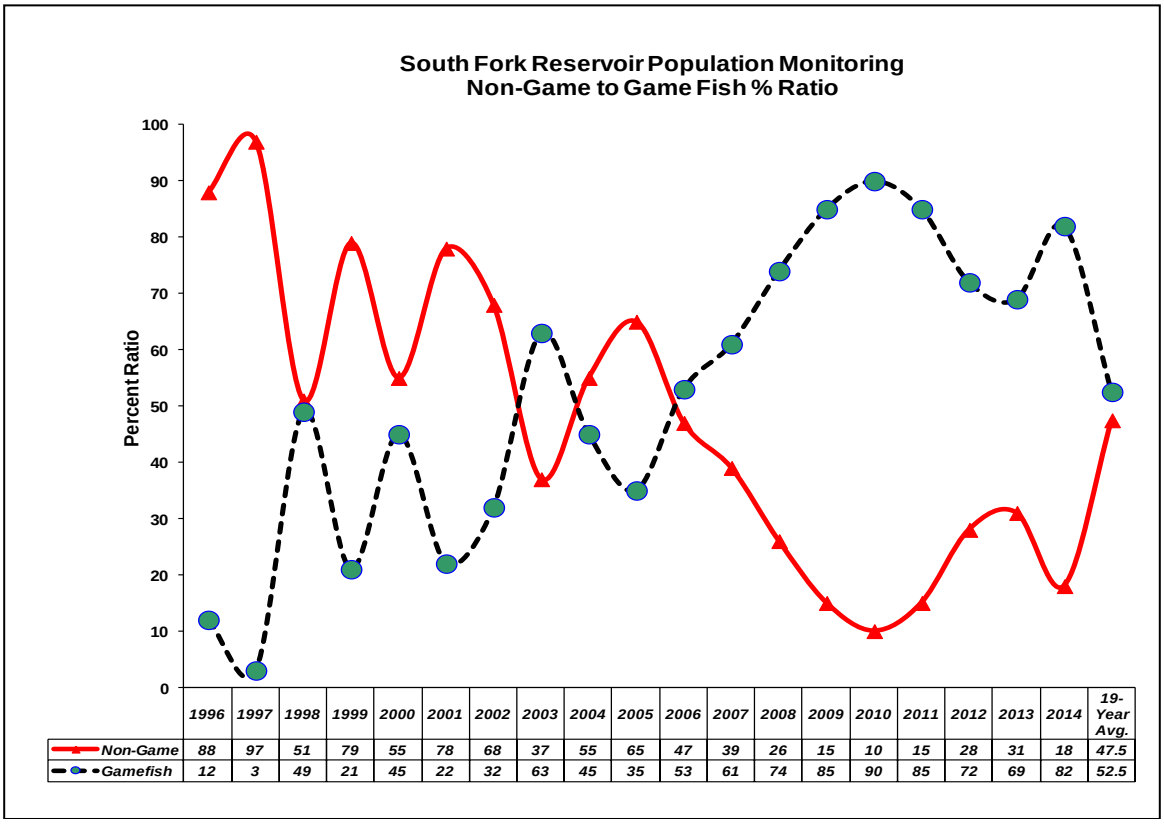
Bowcutt and/or cuttbow trout (rainbow x cutthroat trout hybrid) continue to play an important role in the management of South Fork Reservoir. The 2014 spring gill net surveys captured eight bowcutt trout, with fish ranging in size from 17.9 in (fall 2012 stocked) to 23.2 in TL and averaging 21.3 in TL. Applying K-Factor condition values utilizing rainbow trout standards for the rainbow-cutthroat hybrid found no fish in poor condition, 27% in fair condition (two fish), and 63% in good condition (five fish) for the seven bowcutt trout measured and weighed during the survey.

Figure 5



	< 9.0-10.9"	11.0-12.9"	13.0-14.9"	15.0-16.9"	17.0-18.9"	19.0" -->
2014	41.3	20.6	6.3	3.2	19.0	9.5
2007-2013 Avg.	31.4	27.8	13.9	7.1	11.0	8.7

Figure 6



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	19-Year Avg.
Non-Game	88	97	51	79	55	78	68	37	55	65	47	39	26	15	10	15	28	31	18	47.5
Gamefish	12	3	49	21	45	22	32	63	45	35	53	61	74	85	90	85	72	69	82	52.5

The success of the wiper in South Fork Reservoir has been documented and an evaluation has been ongoing and will continue to document its status over the next several years. A total of 11 wipers were caught in the 2014 gill net survey, with the specimens measuring an average of 20.5 in TL (size range of 15.0 – 23.5 in TL). All wipers were tagged with a numeric yellow Floy tag and recorded in the Regional database and will be incorporated into the wiper study currently underway at South Fork Reservoir.

The capture of the chub and sucker is fairly common in the springtime at South Fork Reservoir. The size of the adult non-game fish (>10 in TL) and diminishing numbers of smaller and younger age classes of chub and suckers illustrate that biological control agents (e.g., wiper, black bass, channel catfish, piscivorous species of trout) are having a positive effect on controlling populations allowing trout species to benefit.

MANAGEMENT REVIEW

- Angler surveys were conducted throughout the entire 2014 fishing season with good fishing and angler satisfaction reported.
- The spillway fish salvage was completed.
- The installation, retrieval, and analysis of the recording thermograph objective for 2014 were completed.
- The black bass electrofishing surveys were completed in May and August.
- The approaches for quagga mussel monitoring were completed in 2014. Although there were positive qPCR test results in 2014, follow-up surveys at these same sites produced negative results.
- Population surveys revealed continued success in controlling the non-game fish to game fish ratios and good carryover of planted trout in the spring gill nets.
- Wipers and channel catfish were not stocked in 2014 due to drought concerns.
- Delineation of smallmouth bass nesting areas occurred in the spring of 2014.

RECOMMENDATIONS

- Continue angler surveys and assessments to develop an accurate assessment of angler use and harvest of all fish species.
- Conduct an electroshocking survey to assess age class distribution, body condition, and Relative Stock Density of black bass populations, especially the expansion of the largemouth bass population.
- Continue to monitor reservoir water levels and temperatures in spring to evaluate and predict black bass spawning timing and possible success.
- Continue population sampling to monitor game fish/non-game fish ratios.
- Continue wiper and channel catfish augmentation and monitoring/evaluation to provide added control of non-game fish and provide diversified angling opportunities with trophy fish potential when needed.

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Eastern Region

Date: January 2015

Table 1

SOUTH FORK RESERVOIR
2014 Creel Census Angler Use and Harvest Summary

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	**Totals**
No. Days Checked	2	2	2	2	2	6	1	2	1	1	2	1	**24**
Avg. Water Temp.	Ice=13"	Ice=10"	43.5	52	60	65	73	72	63	57	44	40	**57.0**
No. Anglers Checked	22	26	6	26	32	218	23	47	9	6	19	2	**436**
No. of Hours Fished	77	75	18.5	53.5	88.0	610	41.5	165	12	17	44	8	**1,209.5**
Total Fish Caught	27	22	32	76	117	349	29	106	15	15	52	18	**858**
Total Fish Harvested:	26	14	11	15	21	147	20	20	7	5	19	2	**307**
Rainbow Trout	23	13	10	14	19	132	19	19	7	3	17	2	**278**
Brown Trout	0	0	0	0	1	0	0	0	0	0	0	0	**1**
Bow-cutt Trout	3	1	1	0	1	2	0	1	0	2	2	0	**13**
Black Bass	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Wiper	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Channel Catfish	0	0	0	1	0	1	1	0	0	0	0	0	**3**
Average Measured Fish Harvest Size													
Rainbow Trout No.	19	10	4	14	14	94	13	12	2	2	11	2	**197**
Avg. Size (FL-in.)	16.2	16.9	18.2	15.4	15.2	15.9	15.3	15.7	14.8	14.7	17.3	17	**16.0**
Brown Trout No.	0	0	0	0	1	0	0	0	0	0	0	0	**1**
Avg. Size (FL-in.)					24								**24.0**
Bow-cutt Trout No.	3	1	1	0	1	2	0	1	0	2	2	0	**13**
Avg. Size (FL-in.)	17.5	16.1	19.1		18.6	20.7		19.7		19.7	20.5		**19.1**
Black Bass No.	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Avg. Size (TL-in.)													
Wiper Bass No.	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Avg. Size (TL-in.)													
Channel Catfish No.	0	0	0	1	0	1	1	0	0	0	0	0	**3**
Avg. Size (TL-in.)				26		14.5	24						**21.5**
Angler Catch Rate													
Fish / Hour	0.35	0.29	1.73	1.42	1.33	0.57	0.70	0.64	1.25	0.88	1.18	2.25	**0.71**
Fish / Angler	1.23	0.85	5.33	2.92	3.66	1.60	1.26	2.26	1.67	2.50	2.74	9.00	**1.97**

Table 2

South Fork Reservoir Fish Stocking

2014

Date	# of Fish Stocked	Pounds	Avg. Size (in.)	Species	# / Pound	Strain	Stocking Location	Water Temp.	Tank Temp.
March 4, 2014	8,330	1,700	8	Rainbow Trout	4.9	Shasta	St. Park Boat Launch	48	52
March 5, 2014	9,800	2,000	8	Rainbow Trout	4.9	Shasta	St. Park Boat Launch	45	52
March 10, 2014	8,600	2,000	8.3	Rainbow Trout	4.3	Shasta	St. Park Boat Launch	42	52
March 11, 2014	8,600	2,000	8.3	Rainbow Trout	4.3	Shasta	St. Park Boat Launch	44	51
March 12, 2014	8,800	2,000	8.3	Rainbow Trout	4.4	Shasta	St. Park Boat Launch	45	51
March 17, 2014	10,560	2,400	8.3	Rainbow Trout	4.4	Shasta	St. Park Boat Launch	45	52
March 18, 2014	16,150	950	5.3	Rainbow Trout	17.0	Tahoe	Coyote Cove Boat Launch	44	51
March 19, 2014	12,750	750	5.3	Rainbow Trout	17.0	Tahoe	Coyote Cove Boat Launch	44	51
April 4, 2014	7,000	2,000	8.9	Rainbow Trout	3.5	Shasta	St. Park Boat Launch	47	51
April 7, 2014	9,000	2,000	8.2	Rainbow Trout	4.5	Shasta	St. Park Boat Launch	48	52
April 9, 2014	8,160	48	2.4	Brown Trout	170.0	Egan	St. Park Boat Launch	51	51
April 9, 2014	10,350	2,300	8.2	Rainbow Trout	4.5	Shasta	St. Park Boat Launch	52	51
April 28, 2014	6,600	2,000	9.1	Rainbow Trout	3.3	Shasta	St. Park Boat Launch	50	51
May 7, 2014	7,590	2,300	9.1	Rainbow Trout	3.3	Shasta	St. Park Boat Launch	50	52
May 7, 2014	7,590	2,300	9.1	Rainbow Trout	3.3	Shasta	St. Park Boat Launch	50	52
July 25, 2014	4,600	2,000	10.3	Rainbow Trout	2.3	Shasta	St. Park Boat Launch	66	51
July 28, 2014	1,380	600	10.3	Rainbow Trout	2.3	Shasta	St. Park Boat Launch	72	52
October 21, 2014	5,600	2,000	9.6	Rainbow Trout	2.8	Tahoe	St. Park Boat Launch	55	51
October 22, 2014	5,600	2,000	9.6	Rainbow Trout	2.8	Tahoe	St. Park Boat Launch	56	53
October 26, 2014	5,600	2,000	9.6	Rainbow Trout	2.8	Tahoe	St. Park Boat Launch	58	52
November 5, 2014	5,780	1,700	9.0	Rainbow Trout	3.4	Tahoe	St. Park Boat Launch	52	50
December 1, 2014	2,550	750	9.0	Rainbow Trout	3.4	Tahoe	St. Park Boat Launch	46	53
Total Catchable Trout:	**133,930**	**36,050**	*(x=3.7 fish/pound)*				Avg. Water Temp. =	50.5	51.5
Total Sub-catchables Trout:	**28,900**	**1,700**							
Total Fingerling Trout:	**8,160**	**48**							
Total Warm Water Fish:	**0**	**0**							
TOTALS	***170,990***	***37,798***							

BC Trout = 0 Fish in 2014

BN Trout = 8,160 Fingerling

South Fork Reservoir received extra fish (Wildhorse & Wilson Sink Res. Allotment) in 2014 due to extended drought conditions

Table 3

SOUTH FORK RESERVOIR

Smallmouth Bass Population Status-Electrofishing Survey Trends

Year	Number of Bass / Hour	RSD 10 Factor	K-Factor	Rating
1989	227	N/A - First year of survey - YOY survey		
1990	226	88	5.20	Good
1991	418	0	5.08	Good
1992	108	54	5.47	Good
1993	43	93	5.85	Excellent
1994	31	50	5.48	Good
1995	61	100	5.95	Excellent
1996	130	17	5.62	Excellent
1997	No Data			
1998	268	44	6.03	Excellent
1999	185	43	5.85	Excellent
2000	186	87	6.22	Excellent
2001	224	85	5.86	Excellent
2002	43	92	6.06	Excellent
2003	65	90	6.19	Excellent
2004	144	100	5.87	Excellent
2005	67	71	6.11	Excellent
2006	49	75	5.40	Good
2007	47	56	5.29	Good
2008	202	75	5.53	Good
2009	403	73	5.57	Good
2010	93	67	5.36	Good
2011	67	69	5.68	Good
2012	43	86	5.48	Good
2013	40	76	5.52	Good
2014		84		
1998-2014 Avg.=	**133**	**75**	**5.75**	**Excellent**

RSD 10 = # of fish > 254mm (*relative* quality catch length) **/ Total** # of fish > 203 mm (= minimal stock length 8.0 inches)

RSD 10 between 40 and 60 is desired, indicating a balanced population.

Special regulation in effect at South Fork Reservoir (15 inch minimum size, legal harvest from 7/1-2/29).

2014 Included 2 spillway salvages & 1 electrofishing survey for smallmouth bass, no weights taken

Table 4

SOUTH FORK RESERVOIR

Largemouth Bass Population Status-Electrofishing Survey Trends

Year	Number of Bass Sampled	RSD 10 Factor	K-Factor	Rating	Avg. Size TL - Inch
1989					
1990					
1991					
1992					
1993					
1994					
1995					
1996					
1997					
1998					
1999					
2000					
2001					
2002					
2003					
2004					
2005					
2006					
2007	8				14.7
2008	35	80	6.54	Excellent	10.7
2009	39	69	6.60	Excellent	10.7
2010	85	46	6.23	Excellent	7.6
2011	68	64	6.41	Excellent	10.4
2012	56	69	5.57	Good	11.8
2013	89	69	5.49	Good	10.6
2014	190	92	5.43	Good	11.7
2007-2014 Avg.=	**71**	**70**	**6.04**	**Excellent**	**11.0**

RSD 10 = # of fish > 254mm (*relative* quality catch length) **/ Total** # of fish > 203 mm (= minimal stock length 8.0 inches)

RSD 10 between 40 and 60 is desired, indicating a balanced population.

Special regulation in effect at South Fork Reservoir (15 inch minimum size, legal harvest from 7/1-2/29).

2014 Included 2 spillway salvages & 2 electrofishing survey/capture for largemouth bass, survey bias towards fish > 8 inches

Table 5

SOUTH FORK RESERVOIR
Population Sampling Catch Record
2014

	Net/Sample #	#1-4	Electrofish		
	Date:	04/30/2014	May -August		
SPECIES				**TOTALS**	% of Species Composition
*Rainbow Trout **	Number	63	0	***63***	*15.3*
	Avg. Size (Inches-FL)	13.0		***13.0***	
Bow-Cutt Trout	Number	8	0	***8***	*1.9*
	Avg. Size (Inches-FL)	21.3		***21.3***	
Smallmouth Bass	Number	1	104	***105***	*25.5*
	Avg. Size (Inches-FL)	13.8	10.2	***10.2***	
Largemouth Bass	Number	1	190	***191***	*46.4*
	Avg. Size (Inches-TL)	11.4	11.7	***11.7***	
Wiper	Number	11	14	***25***	*6.1*
	Avg. Size (Inches-TL)	20.5	21.6	***21.1***	
Channel Catfish	Number	0	1	***1***	*0.2*
	Avg. Size (Inches-TL)		18.0	***18.0***	
Lahontan tui chub	Number	9	1	***10***	*2.4*
	Avg. Size (Inches-TL)	13.4	8.5	***12.9***	
Tahoe Sucker	Number	9	0	***9***	*2.2*
	Avg. Size (Inches-TL)	16.1		***16.1***	
	TOTAL FISH	102	310	***412***	
	HOURS	59.3	1.54	***60.8***	
	% Non-desirable Fish	17.6	0.3	***4.6***	
	Fish / Net-Shocking Hour	1.72	201.3	**6.77**	
	Avg. Res. Water Temp. (F°)	49.5	70.0	***59.8***	

Net/Sample Locations:

* = 26 (41%) Recent Hatchery Rainbow trout in gill nets

1 North Camp ground point. Experimental Mesh gill net, 150 feet long.

2. North-east side of the reservoir, south of the no–wake buoy boundary buoy set. Experimental Mesh gill net, 150 feet long.

3. South of Buoy line, Southwest side of reservoir, Buoy set. Experimental Mesh gill net, 150 feet long.

4. North side of reservoir below A-frame Pt., Experimental Mesh gill net, 150 feet long.

5. Two Electrofish transects (May 7 & August 14) included East Coves, South End, Coyote Cove, Jet Ski Beach, and Spillway/Dam face, +2 spillway salvages.