NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT

FEDERAL AID JOB PROGRESS REPORTS

F-20-48
2012

PINE FOREST COMPLEX
WESTERN REGION

NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
JOB PROGRESS REPORT

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NEVADA DEPARMENT OF WILDLIFE, FISHERIES DIVISION
JOB PROGRESS REPORT

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NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
ANNUAL PROGRESS REPORT

State: *Nevada*
Project Title: *Statewide Fisheries Program*
Job Title: *Pine Forest Complex*
Period Covered: *January 1, 2012 through December 31, 2012*

SUMMARY

General Management Objective

The Pine Forest Complex is composed of Blue Lakes, Onion Valley Reservoir, and Knott Creek Reservoir in the Pine Forest Range south of Denio, Nevada. Anglers reported fishing all three lakes during the 2012 season. Blue Lakes received 4,044 rainbow trout, Onion Valley Reservoir received 6,940 rainbow trout and 457 tiger trout, and Knott Creek Reservoir received 450 tiger trout.

The water level at all three fisheries was variable and Blue Lakes remained approximately 75% of capacity. Near the end of the irrigation season, the ranch below user drained Onion Valley Reservoir and all fish were entrained downstream. Knott Creek Reservoir remained very high early in the season and but the level was moderate by the end of the irrigation season.

Angler drop-box forms from Onion Valley Reservoir and Knott Creek Reservoir were collected after the season closed. Angler drop-box forms were not collected from Blue Lakes. Opportunistic angler contact surveys were completed in June and July. Based on these methods for determining angler success, all three fisheries exceeded management objectives.

Study Specific Objective

<u>Onion Valley Reservoir</u>

Spring was characterized by a below average snowpack in the Pine Forest Range. Water releases throughout the irrigation season drained Onion Valley Reservoir in September. The outlet structure on Little Onion Reservoir was vandalized in 2011 and the water user was able to open the valve in July 2012 to release water from Little Onion.

<u>Knott Creek Reservoir</u>

Spring monitoring revealed that trout in Knott Creek Reservoir moved up Knott Creek attempting to spawn. Redds were observed later in the spring. Electroshocking the stream for YOY or juvenile trout did not occur in 2012.

Speckled dace appeared to respond well to the high water level in 2011 and 2012, and schools of speckled dace were common along the shoreline areas. Minnow trapping and netting did not occur in 2012. Trout sampling to examine foraging of speckled dace also did not occur.

BACKGROUND

Blue Lakes

Blue Lakes are composed of three small lakes located in the Pine Forest Range in a Wilderness Study Area located at 8,300 ft. The main lake covers 24 SA with a maximum depth of 44 ft and average depth of 24 ft. The lower lake covers 7.4 SA. Access to Blue Lakes requires an approximately 1/4 mi hike from the trailhead to the main lake.

Historically, Blue Lakes supported a Lahontan cutthroat trout fishery. Currently, there is a self-sustaining population of brook trout along with stocked rainbow, tiger, and bowcutt trout. Stocking occurs using a helicopter. Blue Lakes are managed as a quality coldwater fishery.

Onion Valley Reservoir

Onion Valley Reservoir is located in the Pine Forest Range south of Denio, NV. The reservoir was formed by a dam constructed on Alder Creek in 1955, impounding 101 SA, capable of storing 1,630 acre-ft, and having a maximum depth of 42 ft.

The reservoir is a popular destination for anglers in Humboldt County and across northern Nevada. The dam and reservoir are owned and administered by the Bureau of Land Management. Onion Valley Reservoir serves as an irrigation and livestock watering impoundment for the Alder Creek Ranch, which owns the water rights. In late 2005, the reservoir was drawn down to repair the outlet on the dam. Since that time, irrigation demands have drawn the reservoir down to low levels by the end of each season.

Currently, there is no minimum pool agreement. An application for unappropriated water has been filed with Nevada Division of Water Resources (NDWR) by NDOW. Onion Valley Reservoir is currently managed as put-and-take trout fishery due to its low water level limiting the number of fish carrying over from year to year. Prior to consistently having low water levels, Onion Valley Reservoir was managed under the Quality Fishery Management Concept.

Knott Creek Reservoir

Knott Creek Reservoir is located in the Pine Forest Range at an elevation of 6,400 ft. The dam was reconstructed in 1988 and an initial 500 acre-ft minimum pool was purchased by the state. In 2003, another 500 acre-ft was purchased through the

Southern Nevada Public Lands Management Act. The reservoir covers 216 surface acres and stores 2,700 acre-ft of water with a maximum depth of 24 ft. In addition to recreational angling, Knott Creek Ranch also uses the reservoir for irrigation.

Currently, Knott Creek Reservoir is managed as a trophy fishery with special regulations. Only artificial lures and flies with single barbless hooks are permitted. The limit is one trout per day and one in possession with a minimum size of 18 inches.

OBJECTIVES AND APPROACHES

General Management Objective

Objective: To administer an annual fisheries program that assesses general fish population dynamics, angler use and success, annual stocking programs, habitat conditions, and maintains contact with necessary land management entities.

Blue Lakes

Approaches:

- Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in angler questionnaire data.
- Conduct a general habitat assessment through visual observations of water quantity (lake level) and water quality (clarity) when on site.

Onion Valley Reservoir

Approaches:

- Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in angler questionnaire data.
- Conduct a general habitat assessment through visual observations of water quantity (lake level), water quality (clarity), and aquatic vegetation when on site.

Knott Creek Reservoir

Approaches:

- Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in angler questionnaire data.
- Conduct a general habitat assessment through visual observations of water quantity (lake level) and water quality (clarity) when on site.

Study Specific Objective – Onion Valley Reservoir Water Rights Investigation

Objective: To assess water that is not appropriated in the Alder Creek Basin. Any excess water should be filed on by the State for recreational use to be stored in Big Onion Reservoir.

Approaches:

- Coordinate with Alder Creek Ranch to use water from Little Onion Reservoir prior to using water stored in Onion Valley Reservoir.
- Monitor water released from Little Onion Reservoir and Onion Valley Reservoir used by Alder Creek Ranch.
- Explore alternative solutions with Alder Creek Ranch for maintaining the Onion Valley Reservoir fishery while meeting agricultural needs.

Study Specific Objective – Knott Creek Reservoir Sport Fish Forage Base Study

Objective: Determine speckled dace population size and areas of the reservoir they utilize. Examine number and success of rainbow trout spawning in Knott Creek upstream of the reservoir.

Approaches:

- Monitor population size and distribution of speckled dace at 20 shoreline sites once in spring and fall using minnow traps.
- Monitor the spring and stream flow into Knott Creek Reservoir for speckled dace when onsite at Knott Creek Reservoir.
- Spend 10 days visually survey Knott Creek upstream of the reservoir in the summer and fall for juvenile trout.
- Electroshock and visually survey Knott Creek upstream of the reservoir in the summer and fall for juvenile trout.
- Examine trout use of speckled dace by collecting 10 stomach samples each from rainbow trout, bowcutt trout, and tiger trout (all greater than 14 inches) using hook-and-line methods.

PROCEDURES

General Management Objective

<u>Blue Lakes</u>

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and Mail-in Angler Questionnaire Survey. Opportunistic angler contacts were made during the fishing season by contacting anglers fishing or camped at the Blue Lakes trailhead. The angler drop-box was maintained prior to the fishing season opening, but was not checked at the close of fishing season on November 15. Participating anglers rated their satisfaction for angling experience, size of fish, and number of fish caught on a scale of -2 (worst) to +2 (best).). The mail-in angler questionnaire was randomly mailed to about 10% of the fishing license holders for the year to estimate angler use and success. The 2011 questionnaire data was summarized.

Conduct a general habitat assessment through visual observations of water quantity (lake level) and water quality (clarity) when on site. Blue Lakes was visited in June to visually monitor lake level, water clarity, and aquatic vegetation.

Onion Valley Reservoir

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and Mail-in Angler Questionnaire Survey. Opportunistic angler contacts were made throughout the fishing season by contacting anglers that were fishing or camped around Onion Valley Reservoir. The angler drop-box was maintained prior to the fishing season opening on June 9 through November 15, which was the end of the 2012 fishing season. Participating anglers rated their satisfaction in angling experience, size of fish, and number of fish caught on a scale of -2 (worst) to +2 (best). The mail-in angler questionnaire was randomly mailed to about 10% of the fishing license holders for the year to estimate angler use and success. The 2011 questionnaire data was summarized.

Conduct a general habitat assessment through visual observations of water quantity (lake level) and water quality (clarity) when on site. Onion Valley Reservoir was visited monthly from May through November to visually monitor lake level, water clarity, and aquatic vegetation.

Knott Creek Reservoir

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and Mail-in Angler Questionnaire Survey. Opportunistic angler contacts were made throughout the fishing season. The majority of the anglers use float tubes or boats so contacts were made while anglers were on shore and not actively fishing. The angler drop-box was maintained prior to the fishing season opening on June 9 through November 15, which was the last day of the 2012 fishing season. Participating anglers also rated their satisfaction in angling experience, size of fish, and number of fish caught on a scale of -2 (worst) to +2 (best).). The mail-in angler questionnaire was randomly mailed to about 10% of the fishing license holders for the year to estimate angler use and success. The 2011 questionnaire data was summarized.

Conduct a general habitat assessment through visual observations of water quantity (lake level) and water quality (clarity) when on site. Knott Creek Reservoir was visited monthly from May through November to visually monitor lake level, water clarity, and aquatic vegetation.

Study Specific Objective

Onion Valley Reservoir Water Rights Investigation

Coordinate with Alder Creek Ranch to use water from Little Onion Reservoir prior to using water stored in Onion Valley Reservoir. A below average runoff from the 2011/2012 winter resulted in both reservoirs not reaching capacity. Releases started with Onion Valley Reservoir and then with Little Onion Reservoir in July.

Monitor water released from Little Onion Reservoir and Onion Valley Reservoir used by Alder Creek Ranch. Gauges installed below Little Onion Reservoir and Onion Valley Reservoir dams where operated by NDWR during the irrigation season to record water releases.

Explore alternative solutions with Alder Creek Ranch for maintaining the Onion Valley Reservoir fishery while meeting agricultural needs. Ongoing meetings among NDWR, NDOW, and Alder Creek Ranch were held in 2012. The purpose of the meeting was to discuss the possibility of assisting Alder Creek Ranch on constructing a new reservoir lower in the Alder Creek drainage to capture water not stored in Onion Valley Reservoir. An additional reservoir would allow more water to be available in Onion Valley Reservoir for maintaining the sport fishery.

Knott Creek Reservoir Sport Fish Forage Base Study

Monitor population size and distribution of speckled dace at 20 shoreline sites once in spring and fall using minnow traps. Population monitoring of speckled dace was not completed.

Monitor the spring and stream flow into Knott Creek Reservoir for speckled dace when onsite at Knott Creek Reservoir. Monitoring of speckled dace was not completed in the streams flowing into Knott Creek Reservoir.

Spend 10 days visually observing for spawning rainbows within Knott Creek upstream of the reservoir. One day of visual observations was conducted on Knott Creek from the mouth to the road crossing approximately 1.25 mi upstream.

Electroshock and visually survey Knott Creek upstream of the reservoir in the summer and fall for juvenile trout. Electrofishing of Knott Creek did not occur.

Examine trout use of speckled dace collecting 10 stomach samples each from rainbow trout, bowcutt trout, and tiger trout (all greater than 14 inches) using hook-and-line methods. Stomach sample were not taken.

FINDINGS

Blue Lakes

General Management Objective

Conduct a general fisheries assessment through opportunistic angler contacts, Angler Drop-Box Surveys, and Mail-in Angler Questionnaire Survey.

Blue Lakes was stocked with 4,044 fingerling rainbow trout in fall 2012 using a helicopter to aerial stock this remote lake. The stocking history from 2000 through 2012 is summarized in Attachment 1.

The mail-in angler questionnaires for the 2011-fishing season found the number of anglers and days spent fishing at Blue Lakes increased, with anglers reporting 2.01 days of fishing. Angler success measured as fish per angler was 8.18, which was higher than the eleven-year average of 6.49. Questionnaire results are summarized in Attachment 2.

Anglers most likely participated in the drop-box survey at Blue Lakes, but surveys were not retrieved in 2012.

Opportunistic angler contacts were made throughout the summer while in the Pine Forest Range. Blue Lakes was visited once in June. The results of the opportunistic angler contacts are summarized in Attachment 4.

Conduct a general habitat assessment through visual observations of water quantity (lake level) and water quality (clarity) when on site.

On opening day, June 9, Blue Lakes was visited and the three lakes were at full capacity with very little water flowing out. Most of the water in Blue Lakes was carry over from the winter of 2010/2011 and the runoff from 2011/2012 was enough to fill these lakes. Clarity was very good and aquatic vegetation was at a minimum.

Onion Valley Reservoir

General Management Objective

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and Mail-in Angler Questionnaire Survey.

Onion Valley Reservoir was stocked several times, April 29, May 30, and June 12. A total of 1,000 triploid rainbow trout weighing 372 lbs and averaging 9.8 in were stocked. A total of 5,940 Eagle Lake rainbow trout weighing 1,800 lbs and averaging 9.1 in were stocked. A total of 450 tiger trout weighing 182 lbs and averaging 10.0 in were stocked. Stocking history from 2000 through 2012 is summarized in Attachment 1.

Anglers participating in the Mail-in, Angler Questionnaire Survey reported fishing Onion Valley Reservoir in 2011. Angler success was 10.11 fish per day and 16.51 fish per angler, which was an increase from 3.62 fish per day and 7.45 fish per angler in 2010. Results of the Mail-in, Angler Questionnaire Survey are included in Attachment 2.

A total of 38 anglers filled out angler drop-box forms from June through October. The average rating for angling experience was 1.8, size of fish 1.2, and number fish caught 1.7. The size class of fish anglers reported most was from 10-11.9 in, which was the average stocking size. Results of the Angler Drop-Box Survey are summarized in Attachment 3.

Opportunistic angler contacts were made on 4 days throughout the fishing season. A total of 23 anglers were contacted in June and July. Angler success was 8.7 fish per angler and 2.1 fish per hour. The average size fish measured or reported by anglers fell within the 12-13.9 in size class. Larger holdover trout from 16 to 17.9 in were also measured. Results of the opportunistic angler contacts are summarized in Attachment 4.

Conduct a general habitat assessment through visual observations of water quantity (lake level) and water quality (clarity) when on site.

Spring runoff was still occurring when the fishing season opened and Onion Valley Reservoir did not discharge over the spillway. The water remained clear, greater than 3 ft throughout the fishing season. Water was slightly more turbid in the areas where runoff streams entered the reservoir. As water temperatures increased, aquatic vegetation increased, but did not limit access for shoreline anglers. The reservoir was drawn down enough to cause a loss of all fish in the reservoir.

Knott Creek Reservoir

General Management Objective

Conduct a general fisheries assessment through opportunistic angler contacts, Angler Drop-Box Surveys, and Mail-in Angler Questionnaire Survey.

Knott Creek Reservoir was stocked on April 29 with 450 tiger trout averaging 10.0 in. The stocking history from 2000 through 2012 is summarized in Attachment 1.

The mail-in, angler questionnaire results for 2011 indicated angler use was down slightly from 2010, but exceeded the 11 year average. In 2011, the estimated angler success was 9.97 fish per day and 30.06 fish per angler, which increased from 9.23 fish per day and 28.02 fish per angler in 2010. Mail-in, angler questionnaire data is summarized in Attachment 2.

Anglers completed drop-box forms in June, July, and September. Anglers who visited Knott Creek Reservoir from the west side were not able to access the drop-box

during the early season because of reservoir flooding over the road. A total of 35 anglers submitted drop-box forms. The average, angler satisfaction rating for angling experience was 1.5, size of fish 1.6, and number of fish caught 1.3. Angler success was 19.79 fish per angler and 2.44 fish per hour, which was a slight decrease from 2011 at 40.1 fish per angler and 2.5 fish per hour. The average size class of fish increased slightly to 16-17.9 inches in 2012 from 14-15.9 inches in 2011. Larger trout over 20 in were also reported by anglers. Angler drop-box data is summarized in Attachment 3.

Opportunistic angler contacts were made one day in July. Due to the majority of anglers fishing Knott Creek Reservoir using float tubes or boats, anglers were only contacted while on shore. Angler success averaged 3.5 fish per angler and 3.5 fish per hour. Data from opportunistic angler contacts is summarized in Attachment 4.

Conduct a general habitat assessment through visual observations of water quantity (lake level) and water quality (clarity) when on site.

At the start of the fishing season, Knott Creek Reservoir was at capacity and spilling. Due to the high water, the shoreline around the dam area eroded under wind and wave action. Access around the eastern shoreline was not possible during the early season due to high water levels flooding the road, but was accessible later in the season. Knott Creek Ranch released water throughout the summer to meet its irrigation demands.

As the reservoir water level lowered, matted aquatic vegetation began to limit shoreline angling access by late June. Submergent aquatic vegetation was present across the reservoir, but it did not limit angling access for boaters and float tubers.

Study Specific Objective

<u>Onion Valley Reservoir Water Rights Investigation</u>

Monitor water released from Little Onion Reservoir and Onion Valley Reservoir used by Alder Creek Ranch.

Flumes and gauges below dams at Little Onion and Onion Valley reservoirs were operational in spring 2012 after repairs were made in 2011. NDWR made sure the gauges were operating properly.

Coordinate with Alder Creek Ranch to use water from Little Onion Reservoir prior to using water stored in Onion Valley Reservoir.

All water from Little Onion Reservoir and Onion Valley Reservoir was released during the irrigation season.

Explore alternative solutions with Alder Creek Ranch for maintaining the Onion Valley Reservoir fishery while meeting agricultural needs.

Several meetings with Alder Creek Ranch, NDWR personnel, and NDOW personnel were held in 2012 to discuss the possibility of constructing a new reservoir. The new reservoir would be located downstream of the Alder Creek Ranch on private property to capture flow from within the Alder Creek drainage that is not captured by Onion Valley Reservoir. The location requested by Alder Creek Ranch occurs partially on land administered by the Bureau of Land Management, though land status could change if trades occur based on the Pine Forest Range Recreation Enhancement Act. A new reservoir would reduce the ranch's reliance of water stored in Onion Valley Reservoir and establish a minimum pool to maintain the fishery.

Study Specific Objective

Knott Creek Reservoir Sport Fish Forage Base Study

Monitor the population size and distribution of speckled dace at 20 shoreline sites once in spring and fall using minnow traps.

Monitoring the population and distribution of speckled dace did not take place due to a change in personnel.

Monitor the spring and stream flow into Knott Creek Reservoir for speckled dace when onsite at Knott Creek Reservoir.

Monitoring of speckled dace in streams in springs did not take place due to a change in personnel.

Spend 10 days visually observing for spawning rainbows within Knott Creek upstream of the reservoir.

Visual observations of spawning rainbows did not take place due to a change in personnel.

Electroshock and visually survey Knott Creek upstream of the reservoir in the summer and fall for juvenile trout.

Electroshocking Knott Creek upstream of the reservoir did not take place due to a change in personnel.

Examine trout use of speckled dace by collecting 10 stomach samples each from rainbow trout, bowcutt trout, and tiger trout (all greater than 14 inches) using hook-and-line methods.

Stomach samples were not collected due to a change in personnel.

GENERAL MANAGEMENT REVIEW

General Management Objective

Blue Lakes

Through mail-in, angler questionnaire and opportunistic angler contacts the standards of a Quality Fishery Management Concept were exceeded. Angler satisfaction was not captured at Blue Lakes this year due a change in personnel.

The water level in Blue Lakes remained stable throughout the season and dropped slightly toward the end of summer. There was sufficient water in Blue Lakes at the end of the season for trout to survive the 2012/2013 winter

Onion Valley Reservoir

Onion Valley Reservoir did not have sufficient water for trout to survive the upcoming 2012/2013 winter. At the start of the 2012 fishing season, it was the third consecutive season that had confirmed trout survival. A wide range of trout size classes were represented with trout from less than 10 inches of 18 – 19.9 inches in 2012.

The below average snowpack in the Pine Forest Range was detrimental to Onion Valley Reservoir as runoff was very minimal throughout the year. The water level was insufficient after the 2011 irrigation season to support trout in 2012.

Angler success reported from the angler drop-box, mail-in angler questionnaire, and opportunistic angler contacts exceeded the standards of a Put-and-Take Fishery Management Concept. Angler satisfaction ratings were positive and angler success exceeded the standards of a Quality Fishery Management Concept, which was the previous management strategy at Onion Valley Reservoir.

Knott Creek Reservoir

Angler success reported from the angler drop-box, mail-in angler questionnaire, and opportunistic angler contacts exceeded standards of a Trophy Fisheries Management Concept. Despite its remote location, anglers visited Knott Creek Reservoir and reported catching fish all season. Access into Knott Creek Reservoir was challenging for the first few weeks of the season, but had improved later.

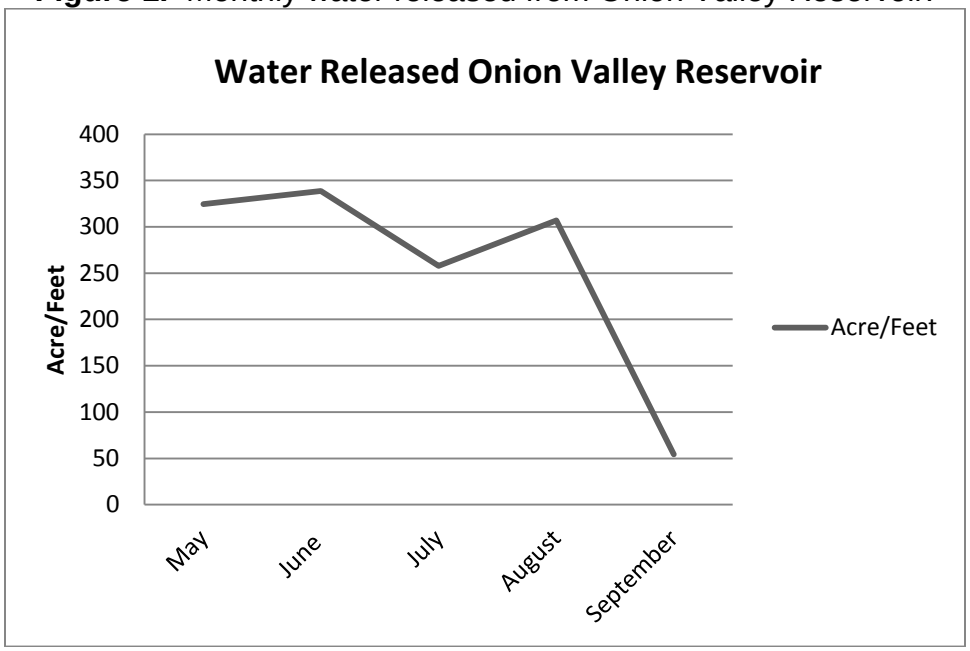
Water levels at Knott Creek Reservoir remained good throughout the season resulting in an abundance of angling opportunities. High water levels prevented access around the eastern shoreline at the beginning of the season and also caused erosion along the dam.

STUDY REVIEW

Onion Valley Reservoir Water Rights Investigation

Water releases began May 1 at Onion Valley Reservoir and continued through September 13. A total of 1335.77 acre-ft of water was released and monthly water releases from are portrayed in Figure 1. Water release began July 19 from Little Onion Reservoir to Onion Valley Reservoir and ended July 29 with a total of 81.76 acre-ft of water released. As a result of the below average snowpack, Onion Valley Reservoir was emptied and no fish remained in the reservoir.

Figure 1. Monthly water released from Onion Valley Reservoir.



RECOMMENDATIONS

General Management Objective

Objective: To administer an annual fisheries program that assesses general fish population dynamics, angler use and success, annual stocking programs, habitat conditions, and maintains contact with necessary land management entities.

Blue Lakes

Approaches:

- Conduct a general assessment of angler use, success, and harvest through roving creel survey, Angler Drop-Box Surveys, and Mail-in Angler Questionnaire Survey.
- Monitor lake level and water quality as access to the lakes permits.

Onion Valley Reservoir

Approaches:

- Conduct a general assessment of angler use, success, and harvest through roving creel surveys, Angler Drop-Box Surveys, and Mail-in Angler Questionnaire Survey.
- Collect monthly limnological data to determine if reservoir conditions are suitable to support trout, especially during low water years when there are increased irrigation releases.

Knott Creek Reservoir

Approaches:

- Conduct a general assessment of angler use, success, and harvest through roving creel survey, Angler Drop-Box Surveys, and Mail-in Angler Questionnaire Survey.
- Collect monthly limnological data and monitor reservoir levels and discharge to maintain habitat conditions suitable to sustaining the trout fishery.

Study Specific Objective

Onion Valley Reservoir Water Rights Investigation

Objective: To monitor the water supply available in Little Onion Reservoir and Onion Valley Reservoir to meet the agriculture demands at the Alder Creek Ranch and sustain a trout fishery at Onion Valley Reservoir.

Approaches:

- Monitor water releases from Little Onion Reservoir and Onion Valley Reservoir that are used for agriculture purposes at Alder Creek Ranch.
- Monitor the snowpack, precipitation, and water supply available in the Alder Creek watershed.
- Continue communications with Alder Creek Ranch to utilize all available water resources to meet irrigation needs and delay releasing water stored in Onion Valley Reservoir to maintain the fishery.
- Continue coordination with Alder Creek Ranch to determine alternate solutions to using all the water stored in Onion Valley Reservoir for irrigation.

Knott Creek Reservoir Sport Fish Forage Base Study

Objective: Determine speckled dace population size and areas of the reservoir they utilize. Examine number and success of trout spawning in Knott Creek upstream of the reservoir.

Approaches:

- Collect 10 stomach samples each from rainbow trout, bowcutt trout, and tiger trout (all greater than 14 in) using hook-and-line methods.
- Conduct up to 10 days of visual observations along Knott Creek upstream of the reservoir during the spring looking for spawning trout.
- Monitor Knott Creek in the summer/fall for juvenile trout using a backpack electroshocker.
- Monitor the shoreline areas of Knott Creek Reservoir to determine the presence/absence and areas inhabited by speckled dace throughout the year.
- Collect stomach samples from speckled dace.
- Conduct a spring and fall macroinvertebrate sampling in Knott Creek Reservoir.

Prepared by: Brad Bauman
Fisheries Biologist
Western Region

Date: March 21, 2013

Attachment 1

Stocking Data 2000-Present

Table 1. Blue Lakes Stocking Data 2002-Present

Year	Species	Strain	Number of Fish	Pounds of Fish	Average Size (inches)	Annual Total	
						Number	Pounds
2002	Rainbow	Kamloop	500	6		500	6
2003	Rainbow	Tahoe	1,028	1	1.5	1,028	1
2005	Tiger Trout		703	20			
2007	Cuttbow		500	2	2.2	7,729	62
	Rainbow		7,229	60	2.7		
2008	Rainbow	Tahoe	1,665	1	1.1	6,301	120
	Bowcutt		2,600	2	1.2		
	Tiger Trout		2,036	117	5.2		
2009	Rainbow	Tahoe	1,038	3	1.8	3,684	5
	Bowcutt		2,646	2	1.2		
2010	Rainbow	Tahoe	533	1	1.7	2,536	5
	Bowcutt		2,003	4	1.7		
2011*	-	-	-	-	-	-	-
2012	Rainbow-	Fish Lake	4,044	73	3.6	4,044	73

* No fish stocking occurred in 2011

Table 2. Onion Valley Reservoir Stocking Data 2000-Present

Year	Species	Strain	Number of Fish	Pounds of Fish	Average Size (inches)	Annual Total	
						Number	Pounds
2000	Rainbow	Tasmanian	2,160	900	10.0	2,160	900
2001	Cuttbow	Catnip	5,045	132	4.0	5,045	132
2002	Rainbow	Tahoe	15,971	52	2.0	27,131	1,784
	Cuttbow	Catnip	6,160	1,652	9.0		
	Rainbow	Kamloop	5,000	80	3.5		
2003	Rainbow	Cuttbow	10,000	42	2.0	10,000	42
2004	Rainbow	Triploid	5,000	1,805	9.5	16,010	2,342
	Tiger Trout		1,010	69	5.5		
	Rainbow	Kamloop	10,000	468	5.0		
2005	Rainbow	Kamloop (Triploid)	1,308	200	7.0	3,308	801
	Rainbow	Kamloop	2,000	601	9.0		
2006	Rainbow	Kamloop	5,038	1,100	8.2	21,151	2,827
	Tiger Trout		1,005	439	10.3		
	Bowcutt	Tahoe/Pyramid	15,108	1,288	5.3		
2009	Rainbow	Tasmanian	4,000	1,626	10.1	15,052	1,853
	Bowcutt	Tahoe	10,044	62	2.5		
	Tiger Trout		1,008	165	7.4		
2010	Tiger Trout		1,999	1,020	10.8	26,193	4,411
	Bowcutt		15,096	691	4.5		
	Rainbow	Tasmanian	5,274	1,825	9.5		
	Rainbow	Bel Air	3,824	875	8.3		
2011	Rainbow	Tahoe	6,528	1,850	9.2	11,507	3,400
	Bowcutt		4,979	1,550	9.2		
012	Rainbow	Triploid	1,000	372	9.8	7,397	2,357
	Rainbow	Eagle Lake	5,940	1,800	9.1		
	Tiger Trout		457	185	10		

Table 3. Knott Creek Reservoir Stocking Data 2000-Present

Year	Species	Strain	Number of Fish	Pounds of Fish	Average Size (inches)	Annual Total	
						Number	Pounds
2000	Cuttbow	Catnip	2,510	64	4.0	6,870	1,993
	Rainbow	Tahoe	4,360	1,929	10.0		
2001	Cuttbow	Catnip	1,512	900	11.5	1,512	900
2002	Rainbow	Catnip	2,079	740	9.5	2,079	740
2004	Rainbow	Triploid	1,500	652	10.0		
	Tiger Trout		1,009	69	5.5	2,509	721
2005	Rainbow	Kamloop (Triploid)	2,520	750	9.1	2,520	750
2006	Tiger Trout		6,371	1,297	7.7	12,380	3,734
	Bowcutt	5MBC	2,500	311	6.8		
	Rainbow	Kamloop (Triploid)	3,509	626	5.9		
2007	Tiger Trout		3,204	1,374	10.2	5,706	1,975
	Rainbow	Eagle Lake	2,502	600	8.4		
2008	Tiger Trout		10,096	315	4.3	12,101	1,140
	Bowcutt		2,005	825	10.1		
2009	Rainbow	Kamloop (Triploid)	2,493	900	9.7	6,002	1,725
	Bowcutt		2,501	660	8.7		
	Tiger Trout		1,008	165	7.4		
2010	Bowcutt		2,499	886	9.6	2,499	886
2011	Bowcutt		2,498	724	9.2	5,998	1,989
	Rainbow	Tahoe	3,500	1,265	8.9		
2012	Tiger Trout		450	182	10	450	182

Attachment 2

Angler Questionnaire Data 2000-Present

Table 1. Blue Lakes Angler Questionnaire Data 2000-Present

Year	Anglers	Days	Fish	Fish/Day	Fish/Angler	Days/Angler
2000	444	707	3,786	5.90	8.53	1.59
2001	487	1,178	3,411	2.90	7.00	2.42
2002	648	1,357	3,248	2.39	5.01	2.09
2003	465	939	2,111	2.25	4.54	2.02
2004	376	569	2,906	5.11	7.73	1.51
2005	264	510	1,338	4.93	5.07	1.93
2006	408	746	1,441	1.93	3.53	1.83
2007	405	722	2,453	3.40	6.06	1.78
2008	163	331	1,633	4.93	10.02	2.03
2009	296	420	2,331	5.55	7.88	1.42
2010	381	563	1,652	2.93	4.34	1.48
2011	301	604	2,461	4.07	8.18	2.01
Average	387	721	2,398	3.86	6.49	1.84

Table 2. Onion Valley Reservoir Angler Questionnaire Data 2000-Present

Year	Anglers	Days	Fish	Fish/Day	Fish/Angler	Days/Angler
2000	942	1,933	13,107	6.78	13.91	2.05
2001	788	2,527	13,429	5.31	17.04	3.21
2002	548	1,107	6,311	5.70	11.52	2.02
2003	807	1,915	8,515	4.45	10.55	2.37
2004	1,224	2,409	18,509	7.68	15.12	1.97
2005	1,310	3,387	39,025	11.52	29.79	2.59
2006	828	1,769	10,656	6.02	12.87	2.14
2007	640	1,132	17,132	15.13	26.77	1.77
2008*	0	0	0	0	0	0
2009	722	1,094	3,654	3.34	5.06	1.52
2010	566	1,163	4,214	3.62	7.45	2.05
2011	670	1,095	11,065	10.11	16.51	1.63
Average	754	1,628	12,135	6.64	13.88	1.94

* No anglers participating in the 2008 Mail-In Angler Questionnaire reported fishing Onion Valley Reservoir

Table 3. Knott Creek Reservoir Angler Questionnaire Data 2000-Present

Year	Anglers	Days	Fish	Fish/Day	Fish/Angler	Days/Angler
2000	528	1,376	6,561	4.77	12.43	2.61
2001	169	285	1,108	6.56	6.56	1.69
2002	443	1,151	4,788	4.16	10.81	2.60
2003	598	1,893	5,717	4.16	9.56	3.17
2004	597	1,579	6,328	4.01	10.60	2.64
2005	486	1,520	5,228	3.13	10.76	3.13
2006	739	3,249	18,683	5.75	25.28	4.40
2007	1,089	2,845	22,202	7.80	20.39	2.61
2008	451	1,470	9,236	6.28	20.48	3.26
2009	905	2,765	21,227	7.68	23.46	3.06
2010	965	2,928	27,035	9.23	28.02	3.03
2011	436	1,314	13,107	9.97	30.06	3.01
Average	617	1,865	11,768	6.13	17.37	2.93

Attachment 3

Angler Drop-Box Data

Table 1. Onion Valley Reservoir Monthly Angler Use and Success Data

Month	# of Anglers	# of Angler Hours	Angler Satisfaction			# of Fish Caught	# of Fish Harvested	Fish/ Angler	Fish/ Hour
			Angling Experience	Size of Fish	# of Fish				
June	16	80	1.9	1.1	1.9	381	142	23.8	4.8
July	15	56	1.7	1.1	1.7	191	59	12.7	3.4
August	2	5	2.0	1.5	0	14	12	7	2.8
Oct	5	39	2.0	2.0	1.8	278	12	55.6	7.1
Annual Summary	28	180	1.8	1.2	1.7	864	225	30.9	4.8

Table 2. Onion Valley Reservoir Length Frequency and Species Composition Data

Species	# of Fish Caught	Size Class							
		<10"	10-11.9"	12-13.9"	14-15.9"	16-17.9"	18-19.9"	20-24.9"	>25"
Bowcutt	134	37	35	40	18	3	1	0	0
Rainbow trout	648	119	212	241	66	8	2	0	0
Tiger Trout	82	37	35	40	18	3	1	0	0

Table 3. Knott Creek Reservoir Monthly Angler Use and Success Data

Month	# of Anglers	# of Angler Hours	Angler Satisfaction			# of Fish Caught	# of Fish Harvested	Fish/ Angler	Fish/ Hour
			Angling Experience	Size of Fish	# of Fish				
June	27	302.5	1.5	1.6	1.2	677	3	25.1	2.2
August	5	28	1.4	1.6	1.2	143	8	28.6	5.1
Sept	3	10	1.7	2	2	11	0	3.7	1.1
Annual Summary	35	340.5	1.5	1.6	1.3	831	11	23.7	2.4

Table 4. Knott Creek Reservoir Length Frequency and Species Composition Data

Species	# of Fish Caught	Size Class							
		<10"	10-11.9"	12-13.9"	14-15.9"	16-17.9"	18-19.9"	20-24.9"	>25"
Bowcutt	103	4	4	3	40	36	11	4	1
Rainbow trout	577	6	2	11	116	281	108	42	11
Tiger Trout	151	3	1	3	36	54	19	30	5

Attachment 4

Opportunistic Angler Contact Surveys

Table 1. Blue Lakes Monthly Angler Use and Success Data

Month	Survey Days	# of Anglers	# of Angler Hours	# of Fish Caught	# of Fish Harvested	Fish/ Angler	Fish/ Hour
June	1	2	6	111	0	55.5	18.5
Annual Summary	1	2	6	111	0	55.5	18.5

Table 2. Blue Lakes Length Frequency and Species Composition Data

Species	# of Fish Caught	Size Class							
		<10"	10-11.9"	12-13.9"	14-15.9"	16-17.9"	18-19.9"	20-24.9"	>25"
Tiger Trout	42	10	10	10	10	2	0	0	0
Rainbow trout	27	5	5	5	5	5	2	0	0
Bowcutt	42	10	10	10	10	2	0	0	0

Table 3. Onion Valley Reservoir Monthly Angler Use and Success Data

Month	Survey Days	# of Anglers	# of Angler Hours	# of Fish Caught	# of Fish Harvested	Fish/ Angler	Fish/ Hour
June	1	18	90	184	94	10.2	2
July	3	5	5	17	13	3.4	3.4
Annual Summary	4	23	95	201	107	8.7	2.1

Table 4. Onion Valley Reservoir Length Frequency and Species Composition Data

Species	# of Fish Caught	Size Class							
		<10"	10-11.9"	12-13.9"	14-15.9"	16-17.9"	18-19.9"	20-24.9"	>25"
Tiger Trout	12	0	2	2	5	3	0	0	0
Rainbow trout	177	26	33	57	46	15	0	0	0
Bowcutt	12	0	0	4	4	4	0	0	0

Table 5. Knott Creek Reservoir Monthly Angler Use and Success Data

Month	Survey Days	# of Anglers	# of Angler Hours	# of Fish Caught	# of Fish Harvested	Fish/ Angler	Fish/ Hour
July	1	2	2	7	0	3.5	3.5
Annual Summary	1	2	2	7	0	3.5	3.5

Table 6. Knott Creek Reservoir Length Frequency and Species Composition Data

Species	# of Fish Caught	Size Class							
		<10"	10-11.9"	12-13.9"	14-15.9"	16-17.9"	18-19.9"	20-24.9"	>25"
Rainbow Trout	7	0	0	2	3	1	1	0	0