NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT

FEDERAL AID JOB PROGRESS REPORTS

F-20-49
2013

PINE FOREST COMPLEX
WESTERN REGION

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, 2013 through December 31, 2013*

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 2013 season.

During the 2013 fishing season Blue Lakes, Onion Valley Reservoir and Knott Creek Reservoir were stocked with trout. Blue Lakes received 1,501 rainbow trout and 2,503 bowcutt trout. Onion Valley Reservoir received 1,900 rainbow trout. Knott Creek Reservoir received 4,357 rainbow trout, 2,522 bowcutt trout, and 864 tiger trout.

The water level at all three fisheries was variable in the 2013 season. Blue Lakes started out the 2013 fishing season approximately 75% capacity and dropped to approximately 50% capacity by October 2013. Onion Valley Reservoir was completely drained by August 17, 2013 for irrigation purposes by the downstream user, and all fish were lost. Knott Creek Reservoir water level began at approximately 80% capacity and was down to the minimum pool of 1,000 acre-ft by the end of the irrigation season.

Anglers participating in the Mail-in, Angler Questionnaire Survey reported fishing Onion Valley Reservoir, Blue Lakes, and Knott Creek Reservoir during 2012 fishing season.

Angler drop-box forms were maintained throughout the fishing season and collected after the fishing season closed. Opportunistic angler contact surveys were completed throughout the fishing season. Based on these methods of determining angler success all three fisheries exceeded their management objectives.

Study Specific Objective

<u>Onion Valley Reservoir</u>

Spring 2013 was characterized by a below average snowpack in the Pine Forest Range. Water releases were measured throughout the irrigation season to show Onion Valley Reservoir was drained by August 17, 2013. It was discovered that the outlet structure was malfunctioning, but it was fixed by the end of the irrigation season. All

water was released from Little Onion Reservoir prior to any being released from Onion Valley Reservoir.

Knott Creek Reservoir

Spring visual monitoring revealed that a few trout had moved upstream from Knott Creek Reservoir attempting to spawn. Spring flows in Knott Creek were very low in 2013 and no redds were observed. Electroshocking the stream for young of the year or juvenile trout did not occur in 2013.

Speckled dace appear to be very abundant in the reservoir and schools were a common sight along the shoreline. Minnow trapping efforts revealed that speckled dace are well distributed throughout the reservoir

BACKGROUND

Blue Lakes

Blue Lakes are composed of three small lakes located in the Wilderness Study Area of the Pine Forest Range at 8,300 ft. The main lake covers 24 surface acres with a maximum depth of 44 ft and average depth of 24 ft. The lower lake covers 7.4 surface acres. Access to Blue Lakes requires an approximately 1/4 mile 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 rainbow, tiger, and bowcutt trout, which are augmented by stocking with 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 surface acres, having a maximum depth of 42 ft, and capable of storing 1,630 acre-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, and it serves irrigation and livestock water to the Alder Creek Ranch, which owns the water rights. In late 2005, the reservoir was drawn down to repair the dam outlet And 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 in place. Onion Valley Reservoir is currently managed as put-and-take fishery due to the low water level limiting the number of fish that can carry over to the next year. Prior to the reservoir always being

low by the end of the season, it 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 when an initial 500 acre-ft minimum pool was purchased. 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 Reservoir is also used for irrigation at the Knott Creek Ranch.

Currently, Knott Creek Reservoir is managed as a trophy fishery with special regulations in place. 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

Blue Lakes

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 2013 fishing season by contacting anglers that were fishing or camped at the Blue Lakes trailhead. The angler drop-box was maintained prior to the opening of the fishing season and was checked by the close of fishing season on November 15, 2013. 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 2012 mail-in angler questionnaire data was summarized. The voluntary angler questionnaire was randomly mailed to 30,000 fishing license holders for the year to estimate angler use and success.

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 and July 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 June 2013 by contacting anglers that were fishing or camped around Onion Valley Reservoir. The angler drop-box was maintained prior to the opening of the fishing season on June 8, 2013 through November 15, 2013, the end of the 2013-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 2012 mail-in angler questionnaire data was summarized. The voluntary angler questionnaire was randomly mailed to 30,000 fishing license holders for the year to estimate angler use and success.

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 in June and July 2013. The majority of the anglers at Knott Creek Reservoir used 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 8, 2013 through November 15, 2012, which was the last day of the 2013-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 2012 mail-in angler questionnaire data was summarized. The voluntary angler questionnaire was randomly mailed to 30,000 fishing license holders for the year to estimate angler use and success.

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 in May, June, July, September, and October 2013 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. The below average runoff from the 2013/20114 winter resulted in both reservoirs not filling to capacity. Reservoir releases in 2013 started with releasing from Little Onion Valley Reservoir and then water was released from Onion Valley Reservoir in July 2013.

Monitor water released from Little Onion Reservoir and Onion Valley Reservoir used by Alder Creek Ranch. Gauges installed below the dam at Little Onion Reservoir and Onion Valley Reservoir where operated by Nevada Division of Water Resources (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 with NDWR, NDOW, and Alder Creek Ranch were held in 2013. The purpose of the meeting was to discuss the possibility of assisting Alder Creek Ranch with constructing another reservoir lower in the Alder Creek drainage to capture water not stored in Onion Valley Reservoir. This would allow longer or more water availability in Onion Valley Reservoir to maintain 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. Minnow trapping at 20 shoreline sites for speckled dace was completed during the summer 2013.

Monitor the spring and stream flow into Knott Creek Reservoir for speckled dace when onsite at Knott Creek Reservoir. Monitoring speckled dace was completed in streams flowing into Knott Creek Reservoir in 2013.

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

Electroshock and visually survey Knott Creek upstream of the reservoir in the summer and fall for juvenile trout. Electrofishing Knott Creek did not occur in 2013.

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 samples were collect to examine trout use of specked dace during the fall of 2013.

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 were stocked with 1,501 fingerling rainbow trout and 2,503 fingerling bowcutt trout in 2013. Rainbow trout were stocked using a helicopter since this is a remote lake, and the bowcutt trout were stocked by hiking in using backpacks lined with dry bags along with battery-powered aerators. The stocking history from 2009 through 2013 is summarized in Attachment 1.

Anglers completing mail-in angler questionnaire forms for the 2012 fishing season reported fishing Blue Lakes. Anglers reported catching 3.44 fish per day. Angler success measured as fish per angler was 5.94, which was lower than the five-year average of 7.27. The mail-in angler questionnaire results are summarized in Attachment 2.

Anglers completed angler drop-box forms for Blue Lakes from June through November. A total of 64 anglers participated. Angler satisfaction was rated positive for angling experience, size of fish, and number of fish caught. The average rating for angling experience was 1.4, size of fish 1.0, and number fish caught 1.1. The most common size class of fish anglers reported of fish caught was in the 10-11.9 inch size class, and all four species of trout were all represented (brook, rainbow, bowcutt, and tiger trout). The results of the Angler Drop-Box Survey are summarized in Attachment 3.

Opportunistic angler contacts were made twice during the summer while in the Pine Forest Range. Blue Lakes was visited once in June and once in July. 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. Blue Lakes was visited at least once a month from May through October 2013. In May 2013 the main lake at Blue Lakes was approximately at 75 percent capacity with the lower three lakes nearly empty. By October of 2013 the main lake at Blue Lakes was approximately at 50 percent capacity with the lower three lakes being completely dry. Clarity was very good and aquatic vegetation was at a minimum in 2013.

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 only one time on May 14, 2013 due to very low water levels. A total of 5,424 rainbows were stocked that averaged 9.8 inches. Stocking history from 2009 through 2013 is summarized in Attachment 1.

Anglers participating in the Mail-in, Angler Questionnaire Survey reported fishing Onion Valley Reservoir in 2012. Anglers caught 15.62 fish per day and 23.20 fish per angler in 2012, which were elevated from the 2011 results and the 5-year average. Results of the Mail-in, Angler Questionnaire Survey are included in Attachment 2.

Anglers completed angler drop-box forms from June through October and 12 anglers participated. Angler satisfaction for angling experience was 1.2, size of fish 1.1, and number fish caught 1.3. The most common size of fish reported was in the 10-11.9 inch size class, which was the size of trout stocked. Results of the Angler Drop-Box Survey are summarized in Attachment 3.

Opportunistic angler contacts were conducted during three days in June of 2013 and 22 anglers were contacted. Angler success was 2.5 fish per angler and 1.6 fish per hour. The average size fish fell within the 10-11.9 inch size class, which was the size of trout stocked. No larger holdover trout were measured since Onion Valley Reservoir was drained in 2012 and all fish were lost. 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. Very little spring runoff occurred when the 2013 fishing season opened. Onion Valley Reservoir started the fishing season at approximately 30% capacity. Water clarity remained good, greater than three feet, throughout the fishing season. As water temperatures increased aquatic vegetation increased, but did not limited access for shoreline anglers. The

reservoir was completely drained by August 17, 2013 and caused 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 with 4,357 triploid rainbow trout on June 20, July 1, and September 10, 2013. A total of 2,522 bowcutt trout and 864 tiger trout were stocked on September 10, 2013. Stocking history from 2009 through 2013 is summarized in Attachment 1.

The mail-in, angler questionnaire results for 2012 indicated angler use was down slightly from 2010, but exceeded 5-yr average. Angler success was 9.26 fish per day and 33.06 fish per angler, which was an increase from 2011. Mail-in, angler questionnaire data is summarized in Attachment 2.

A total of 16 anglers submitted drop-box forms in June, July, August, September, and October. The average satisfaction rating for angling experience was 1.4, size of fish 1.6, and number of fish caught 1.3. Angler success was 12.33 fish per angler and 1.78 fish per hour. The most common size class of fish reported in 2013 increased to greater than 20 inches from the 16-17.9 inch size class in 2012. Angler drop-box data is summarized in Attachment 3.

Opportunistic angler contacts were made on June 9 and 20. Due to the majority of anglers fishing from float tubes or boats, anglers were contacted when they came to shore. Angler success averaged 5.4 fish per angler and 3.0 fish per hour. Opportunistic angler contact data 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 approximately 80% capacity. Knott Creek Ranch released water throughout the summer to meet irrigation demands, and brought Knott Creek Reservoir down to a minimum pool of 1,000 acre-ft by August.

On June 20, reports were received from anglers that an algae bloom occurred and fish were dying in the reservoir. Dissolved oxygen levels were measured throughout the water column at four different sites at Knott Creek Reservoir on July 1 and 2. Several measurements ranged from 4.9 mg/L to 6.0 mg/L that occurred within three feet of the surface near matted aquatic vegetation. This possibly became lethal for trout. Below three feet of the surface, dissolved oxygen ranged from 9.9 – 17.4 mg/L.

On July 2, there were 325 fish carcasses found around the shoreline, which were comprised of tiger trout (82%) and rainbow or bowcutt trout (18%). The majority of the tiger trout observed were over 20 in long. The algae bloom continued through July and into late August, along with the death of trout. Angler use at Knott Creek Reservoir was very low in July and August, but increased slightly in September and October.

As the reservoir water level lowered throughout the summer, matted aquatic vegetation along the shoreline began to limit angler access by late June. Subsurface aquatic vegetation was present across the reservoir but did not limit access for boaters and float tubers.

Study Specific Objective

Onion Valley Reservoir Water Rights Investigation

Monitor water released from Little Onion Reservoir and Onion Valley Reservoir used by Alder Creek Ranch. Flumes and gauges below the dams at Little Onion Reservoir and Onion Valley Reservoir were operational in 2013. Water was released from Onion Valley Reservoir starting July 6 and continued until the reservoir was drained by August 17. After this, water continued to flow through the outlet structure of the dam. During 2013, 542 acre-ft of water was released from Onion Valley Reservoir.

Coordinate with Alder Creek Ranch to use water from Little Onion Reservoir prior to using water stored in Onion Valley Reservoir. Water releases in 2013 were focused on irrigation needs to the user below the reservoir. Water from Little Onion Reservoir and Onion Valley Reservoir were released during the 2013 irrigation season. During coordination with Alder Creek Ranch, it was discovered that the outlet structure on Onion Valley Reservoir was leaking when the valve was completely shut off. In the fall, the leak was fixed and the valve appeared to be functioning properly.

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 occurred in 2013 to discuss the possibility of constructing a new reservoir. The new reservoir would be located downstream of the Alder Creek Ranch buildings to capture flow in the Alder Creek drainage which is not captured by Onion Valley Reservoir. The location where Alder Creek Ranch would like a new reservoir is partially on land currently administered by the Bureau of Land Management, though this could change due to land trades associated with the Pine Forest Range Recreation Enhancement Act. The purpose of a new reservoir would be to reduce the reliance on water stored at Onion Valley Reservoir for irrigation and allow a minimum pool to be established to maintain the fishery.

During the fall of 2013, a bathymetric map of Onion Valley Reservoir was completed and staff gauges were installed on the reservoir. Preliminary results of the map indicated that the capacity of the reservoir is 1,915 acre-ft. A final map and a

capacity curve related to the staff gauge are expected to be completed by engineering staff in 2014. This will help NDOW and Alder Creek Ranch better monitor water releases from Onion Valley Reservoir.

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. On July 1–3, 24 minnow traps were set in Knott Creek Reservoir to monitor specked dace population and distribution. A mark/recapture population estimate was intended to be generation, but no speckled dace were recaptured during the second and third capture events, so a population estimate could not be generated. A total of 806 speckled dace were captured during this three-day survey. Speckled dace averaged 74 mm TL and ranged from 66 mm to 102 mm TL. Speckled dace are well distributed throughout the reservoir and appeared to be very abundant due to the lack of recapture. In order to obtain a reliable population estimate of speckled dace in Knott Creek Reservoir, the effort would involve several hundred minnow traps.

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 in 2013 due very low stream and spring flows.

Spend 10 days visually observing for spawning rainbows within Knott Creek upstream of the reservoir. Only one day of visual observation took place in May 2013 for spawning rainbows.

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 in 2013 due to very low water flow in Knott Creek.

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 collected from trout greater than 14 inches on October 22, 2013 to examine the use of speckled dace as a forage fish. Fish included five bowcutt trout and three rainbow trout. Two of the bowcutt trout stomachs exclusively contained speckled dace; one ate four speckled dace and the other three. The other three bowcutt and three rainbow trout contained approximately 50% snails, 15% damsels, 15% midges, and 10% scuds.

GENERAL MANAGEMENT REVIEW

General Management Objective

Blue Lakes

Data from the mail-in angler questionnaire and opportunistic angler contacts exceeded the standards of a Quality Fishery Management Concept. Angler satisfaction also exceeded the standards of a Quality Fishery Management Concept for 2013.

The water level in Blue Lakes dropped continually throughout the season, and was below 50% capacity in October 2013. There was sufficient water in Blue Lakes at the end of the season for trout to survive the 2013/2014 winter

Onion Valley Reservoir

Onion Valley Reservoir did not have sufficient water for trout to survive the upcoming 2013/2014 winter. The below average snowpack during the 2012/2013 winter for the Pine Forest Range was detrimental to Onion Valley Reservoir as runoff was very minimal throughout the year. The water level was not sufficient after irrigation season to support trout in 2013.

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 on the angler drop-box surveys were positive. Angler success reported during the 2013-fishing season also exceeded the standards of a Put-and-Take Fishery Management Concept.

Knott Creek Reservoir

Angler success reported for the angler drop-box, mail-in angler questionnaire, and opportunistic angler contacts exceeded the standards of the Trophy Fisheries Management Concept with the majority of trout caught being over 20 inches in length. Despite the remote location, anglers continued to visit Knott Creek Reservoir throughout the 2013-fishing season and reported catching fish. The algae bloom that occurred in June, July, and August did decrease the number of anglers that visited the reservoir during those months.

The water level at Knott Creek Reservoir continued to drop throughout the season and declined to the 1,000 acre-ft minimum pool by the end of the irrigation season.

STUDY REVIEW

Onion Valley Reservoir Water Rights Investigation

Water releases began in July 2013 at Onion Valley Reservoir and continued through the irrigation season. It was completely drained on August 17, 2013. A total of 542 acre-ft of water was 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.
- Conduct a general habitat assessment through visual observations of water quantity (lake level) and water quality (clarity) when on site.
- Conduct up to 5 days of visual observations surveys along Knott Creek upstream of the reservoir during the spring for spawning rainbow trout and reds.

- Monitor Knott Creek upstream of Knott Creek Reservoir in the summer and fall using visual observations and 2 days of spot electroshocking for juvenile trout.

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:

- In coordination with Trout Unlimited and other NGO's, explore alternative solutions for maintaining the Onion Valley Reservoir fishery while meeting agricultural irrigation needs with Alder Creek Ranch.

Knott Creek Reservoir Sport Fish Forage Base Study

Objective: Determine trout use of speckled dace as a forage fish in Knott Creek Reservoir.

Approaches:

- Determine if the trout species in Knott Creek Reservoir are utilizing specked dace as a forage fish by collecting ten stomach samples from rainbow trout, bowcutt trout, and tiger trout (all greater than 14 inches) using hook-and-line methods in order to determine if any of the fish species are foraging on speckled dace.

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Attachment 1

Stocking Data 2009-2013

Table 1. Blue Lakes Stocking Data 2002-Present

Year	Species	Strain	Number of Fish	Pounds of Fish	Average Size (inches)	Annual Total	
						Number	Pounds
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
2013	Rainbow	Triploid	1,501	22	3.3	4,004	35
	Bowcutt		2,503	13	2.3		

* No fish stocking occurred in 2011

Table 2. Onion Valley Reservoir Stocking Data 2009-2013

Year	Species	Strain	Number of Fish	Pounds of Fish	Average Size (inches)	Annual Total	
						Number	Pounds
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		
2012	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		
2013	Rainbow	Mt. Shasta	5,434	1,900	9.6	5,434	1,900

Table 3. Knott Creek Reservoir Stocking Data 2009-2013

Year	Species	Strain	Number of Fish	Pounds of Fish	Average Size (inches)	Annual Total	
						Number	Pounds
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
2013	Rainbow	Triploid	4,357	2,010	10.5	7,743	3,135
	Bowcutt		2,522	1,025	10.1		
	Tiger		864	100	6.6		

Attachment 2

Angler Questionnaire Data 2008-2012

Table 1. Blue Lakes Angler Questionnaire Data 2008-2012

Year	Anglers	Days	Fish	Fish/Day	Fish/Angler	Days/Angler
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
2012	227	392	1,349	3.44	5.94	1.73
Average	273.6	462	1,885.2	4.18	7.27	1.73

Table 2. Onion Valley Reservoir Angler Questionnaire Data 2008-2012

Year	Anglers	Days	Fish	Fish/Day	Fish/Angler	Days/Angler
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
2012	529	786	12,275	15.62	23.2	1.49
Average	497.4	827.6	6,241.6	6.54	10.44	1.34

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

Table 3. Knott Creek Reservoir Angler Questionnaire Data 2008-2012

Year	Anglers	Days	Fish	Fish/Day	Fish/Angler	Days/Angler
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
2012	728	2,599	24,077	9.26	33.07	2.92
Average	697	2,215.2	18,936.4	8.48	27.02	3.06

Attachment 3

Angler Drop-Box Data

Table 1. Blue Lakes Angler Use and Success Data 2013

# of Anglers	# of Angler Hours	Angler Satisfaction			# of Fish Caught	# of Fish Harvested	Fish/ Angler	Fish/ Hour
		Angling Experience	Size of Fish	# of Fish				
64	252	1.4	1.0	1.1	664	145	9.35	2.62

Table 2. Onion Valley Reservoir Angler Use and Success Data 2013

# of Anglers	# of Angler Hours	Angler Satisfaction			# of Fish Caught	# of Fish Harvested	Fish/ Angler	Fish/ Hour
		Angling Experience	Size of Fish	# of Fish				
12	70	1.2	1.1	1.3	100	34	4.76	1.43

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

# of Anglers	# of Angler Hours	Angler Satisfaction			# of Fish Caught	# of Fish Harvested	Fish/ Angler	Fish/ Hour
		Angling Experience	Size of Fish	# of Fish				
16	125	1.4	1.6	1.3	222	5	12.33	1.78

Attachment 4

Opportunistic Angler Contact Surveys

Table 1. 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	6	0	0	5	1	0	0	0	0
Rainbow trout	9	3	0	3	3	5	2	0	0
Brook Trout	1	1	0	0	0	0	0	0	0
Bowcutt	10	1	10	6	2	1	0	0	0

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"
Rainbow trout	56	36	19	1	0	0	0	0	0

Table 3. 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	84	0	0	0	23	20	6	35	0
Tiger Trout	32	0	0	0	15	10	7	0	0
Bowcutt	34	0	0	0	6	4	8	14	2