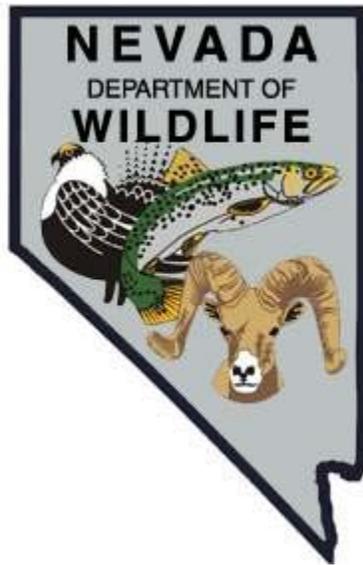


NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS

F-20-52
2016

REDBAND TROUT
EASTERN REGION



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

Table of Contents

<u>Contents</u>	<u>Page</u>
SUMMARY	1
OBJECTIVES and APPROACHES	2
PROCEDURES	2
FINDINGS	2
BLM and private portions of Canyon Creek.....	2
Deep and Riffe Creek	3
Flat and Caudal Creek.....	5
Mason Creek Reservoir	5
Bear, Shack, Shell, Wilson, and Lime Creeks	5
West Fork Deer Creek.....	9
East Fork Owyhee River.....	11
Camp and Sun Creek	13
Inland redband trout Conservation Agreement and Conservation Strategies	13
Nevada Department of Wildlife Redband Trout Species Management Plan.	13
MANAGEMENT REVIEW	13
RECOMMENDATIONS	14
APPENDICES	15

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

List of Figures

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Length Frequency of Redband Trout From Deep Creek Drainage on June 13 - 22, 2016	4
2	Length Frequency of Redband Trout from the N.F. Salmon Falls Creek Drainage on June 28 - 29, 2016 and July 12 - 19, 2016.....	7
3	Length Frequency of Redband Trout from W.F. Deer Creek on July 5 - 6, 2016 and July 21, 2016	10
4	Length Frequency of Rainbow Trout from the East Fork Owyhee River on September 6-8, 2016.....	12
5	Length Frequency of Brown Trout from the East Fork Owyhee River on September 6-8, 2016.....	12

List of Tables

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	2016 Redband Trout Survey Summaries.....	3
2	Date, UTM, water temperature and number of Redband Trout present at each station on Deep Cr., M.F. Deep Cr., N.F. Deep Cr., and S.F. Deep Cr. on June 13 - 22, 2016.....	3
3	Station, station length, number of Redband Trout first pass, number Redband Trout second pass, station population estimate (N), and estimated fish per mile for Deep Cr., M.F. Deep Cr., N.F. Deep Cr., and S.F. Deep Creek on June 13 - 22, 2016	4
4	Estimated population for Deep Cr., M.F. Deep Creek, N.F. Deep Creek S.F. Deep Creek and the entire Deep Creek drainage on June 13 – 22, 2016	5
5	Date, UTM, water temperature and number of Redband Trout present at each station on Wilson Cr., Shack Cr., N.F. Salmon Falls Cr., Bear Cr., Shell Cr., Chimney Cr., and Chimney Tributaries on June 28 - 29, 2016 and July 12 - 19, 2016.....	6

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

List of Tables (Continued)

<u>Number</u>	<u>Title</u>	<u>Page</u>
6	Station, station length, number of Redband Trout first pas, number Redband Trout second pass, station population estimate (N), and estimated fish per mile for Wilson Creek, Shack Creek, N.F. Salmon Falls Creek, Bear Creek, Shell Creek, Chimney Creek, and Chimney Tributaries on June 28 - 29, 2016 and July 12 - 19, 2016	8
7	Estimated population for Wilson Creek, Shack Creek, N.F Salmon Falls Creek, Bear Creek, Shell Creek, Chimney Creek, Chimney Tributaries and the entire N.F. Salmon Falls Creek drainage on June 28 - 29, 2016 and July 12 - 19, 2016.....	8
8	Endemic fish species in the N.F. Salmon Falls Creek drainage, the X signifies the species presence on June 28 - 29, 2016 and July 12 - 19, 2016	10
9	Date, UTM, water temperature and number of Redband Trout present at each station on W.F. Deer Creek on July 5 - 6, 2016 and July 21, 2016	10
10	Station, station length, number of Redband Trout first pass, number Redband Trout second pass, station population estimate (N), and estimated fish per mile for W.F. Deer Creek on July 5 - 6, 2016 and July 21, 2016	12
11	Date, UTM, Water temperature, Number of Rainbow Trout, Number of Brown Trout, in the East Fork Owyhee River on September 6-8, 2016	12

List of Photos

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Riparian conditions at Shell 1 on June 28 - 29, 2016 and July 12 - 19, 2016	9
2	Degraded habitat on W.F. Deer Creek caused by cattle overgrazing on July 5 - 6, 2016 and July 21, 2016.....	11

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

List of Maps

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Station locations on Deep Creek, North Fork Deep Creek, Middle Fork Creek and South Fork Deep Creek on June 13 – 22, 2016	15
2	Station location on Chimney Creek, Chimney Tributaries and Wilson Creek on June 28 – 29, 2016 and July 12 – 19, 2016.....	15
3	Station location on North Fork Salmon Falls Creek, Bear Creek Shack Creek and Shell Creek on June 28 -19, 2016 and July 12-19, 2016	16
4	Station location on West Fork Deer Creek on July 5-6, 2016 and July 21, 2016.....	16
5	Station locations on East Fork Owyhee River on September 6-8, 2016	17

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

State: *Nevada*
Project Title: *Statewide Fisheries Program*
Job Title: *Redband Trout*
Period Covered: *January 1, 2016 through December 31, 2016*

SUMMARY

The Redband Trout Species Management Plan provided direction for activities completed during 2016.

The Deep Creek drainage was surveyed to determine the status of redband trout populations. A large self-sustaining redband trout population was documented with numerous age classes present. Deep Creek had the largest population present, followed by the Middle Fork and the South Fork of Deep Creek.

A hook-and-line survey was conducted on Mason Creek Reservoir to check the status of the introduced redband trout population, with a single adult trout being caught. During a conversation with the reservoir owner, he indicated that he routinely catches redband trout that vary in size, indicating a reproducing population.

The North Fork Salmon Falls drainage was surveyed to determine the status of redband trout populations. A large self-sustaining redband trout population was documented, with numerous age classes present. Bear Creek had the largest population present and redband trout were found in six of the eight tributaries surveyed.

The West Fork of Deer Creek was surveyed to check the status of the reintroduced redband trout population following a successful piscicide treatment. The reintroduction appears to have been successful, with several age classes indicating a self-sustaining population is now present.

The East Fork of the Owyhee River downstream of Wildhorse Reservoir was surveyed to check the status of the fisheries. The trout fishery was depressed following several years of drought and poor water management. Following two successive good water years, the trout fishery is expected to rebuild to pre-drought conditions.

Due to time constraints and a significant amount of time spent on other grants, Flat, Caudal, Riffe, Lime, Camp, and Sun creeks and the private and BLM portions of Canyon Creek were not surveyed in 2016.

OBJECTIVES and APPROACHES

Objective: Native Sport Fish Management

Approaches:

- Survey BLM and private portions of Canyon Creek in the Salmon Falls drainage to determine redband trout status and current fish assemblage.
- Survey Deep Creek and Riffe Creek in the East Fork Owyhee River drainage above Wildhorse Reservoir to determine redband trout status and current fish assemblage.
- Survey Flat and Caudal Creek in the East Fork Bruneau River drainage to determine Redband status and to document the extent of Brook Trout invasion.
- Survey Mason Creek Reservoir to determine status of the introduced redband trout population.
- Survey Bear, Shack, Shell, Wilson, Lime Creek, and the North Fork Salmon Falls River in the Salmon Falls drainage to determine redband trout status and current fish assemblage.
- Survey West Fork Deer Creek in the Salmon Falls Drainage to determine status of the introduced redband trout population.
- Survey the East Fork Owyhee River below Wildhorse Reservoir to assess status of the trout fishery.
- Perform a GAWS survey on Camp and Sun Creek in the Salmon Falls River drainage to determine redband trout status, current fish assemblage, and current habitat condition.
- Continue to participate in the Inland redband trout Conservation Agreement with Conservation Strategies writing process.
- Revise the Nevada Department of Wildlife Redband Trout Species Management Plan.

PROCEDURES

A Smith Root LR-20B backpack electroshocker was used to collect fish during all surveys. All fish population sampling included multiple upstream passes through the sample area. After electroshocking at sample sites, all game fish were identified and measured (mm, TL). Additionally, the presence of all endemic non-game fish was recorded. Table 1 is a summary of 2017 redband trout surveys.

FINDINGS

BLM and private portions of Canyon Creek

Due to time constraints and weather conditions, the BLM and private portions of Canyon Creek were not surveyed in 2016.

Table 1. 2016 Redband Trout Survey Summaries.

Stream	Number of Sample Sites	Length of Sample Sites (m)
Deep Creek	8	50
M.F. Deep Creek	3	50
N.F. Deep Creek	3	50
S.F Deep Creek	5	50
Wilson Creek	3	50
Shack Creek	3	50
N.F. Salmon Falls Creek	2	50
Bear Creek	3	50
Shell Creek	2	50
Chimney Creek	3	50
Chimney Tributaries	3	50
W.F. Deer Creek	9	100
East Fork Owyhee River	6	Varied

Deep and Riffe Creeks

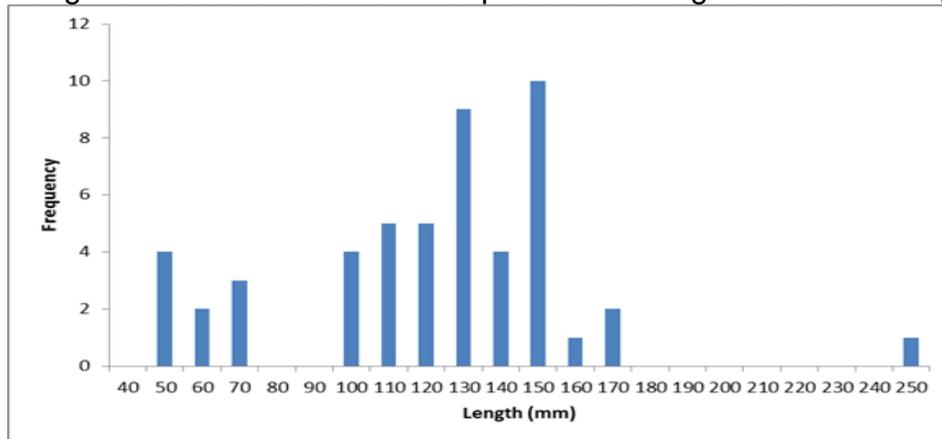
Overall, the riparian conditions during the survey were noted as being in fair to good condition. A total of 50 redband trout were sampled during the survey with the majority being present in Deep Creek. Redband trout were also present in M.F. Deep Creek and S.F. Deep Creek, while no trout were sampled in N.F. Deep Creek (Table 2; Map 1).

Table 2. Date, UTM, water temperature, and number of redband trout present at each station on Deep Cr., M.F. Deep Cr., N.F. Deep Cr., and S.F. Deep Cr. on June 13 - 22, 2016.

Station	Date	# RB Present	UTM E	UTM N	H2O Temp
Deep 1	6/13/2016	0	597151	4609969	65
Deep 2	6/14/2016	0	595945	4608962	56
Deep 3	6/14/2016	0	594835	4607900	54
Deep 4	6/14/2016	0	593901	4606825	53
Deep 5	6/14/2016	14	592525	4606137	58
Deep 6	6/14/2016	5	591709	4606151	58
Deep 7	6/14/2016	6	5911689	4606480	58
Deep 8	6/14/2016	2	590135	4607062	51
MF Deep 1	6/15/2016	1	589071	4607338	50
MF Deep 2	6/20/2016	4	588021	4607439	59
MF Deep 3	6/22/2016	0	587065	4607729	50
NF Deep 1	6/15/2016	0	588877	4607501	58
NF Deep 2	6/22/2016	0	588331	4608247	N/A
NF Deep 3	6/22/2016	0	588607	4608982	DRY
SF Deep 1	6/15/2016	4	589121	4606755	50
SF Deep 2	6/21/2016	0	588240	4606120	58
SF Deep 3	6/21/2016	0	587439	4606122	58
SF Deep 4	6/21/2016	3	596948	4606561	52
SF Deep 5	6/21/2016	9	586039	4606900	44

There were approximately three age classes of redband trout present in the Deep Creek drainage, with the middle age class making up the bulk of the population. The smallest fish sampled was 46 mm in length, with the largest being 242 mm in length. Figure 1 illustrates the length frequency of the redband trout sampled from Deep Creek, S.F. Deep Creek, and M.F. Deep Creek.

Figure 1. Length of redband trout from Deep Creek drainage on June 13-22, 2016.



Only a single pass survey was completed at Deep Creek Stations 1 – 4, M.F. Deep Creek 1 and 3, N.F. Deep Creek 1 - 3, and S.F. Deep Creek 2 - 4 as no redband trout were sampled during the first pass, so a second pass was not completed. A second pass with depletion was performed at the remainder of the stations. Table 3 shows the results of the survey at each station.

Table 3. Station, station length, number of redband trout first pass, number redband trout second pass, station population estimate (N), and estimated fish per mile for Deep Cr., M.F. Deep Cr., N.F. Deep Cr., and S.F. Deep Cr. on June 13 - 22, 2016.

Station	Length (m)	# First Pass	# Second Pass	N	Fish/Mile
Deep 1	50	0	N/A	0	0
Deep 2	50	0	N/A	0	0
Deep 3	50	0	N/A	0	0
Deep 4	50	0	N/A	0	0
Deep 5	50	7	6	49	1578
Deep 6	50	3	2	9	290
Deep 7	50	5	1	6	201
Deep 8	50	1	N/A	1	32
M.F. Deep 1	50	1	N/A	1	32
M.F. Deep 2	50	3	1	5	145
M.F. Deep 3	50	0	N/A	0	0
N.F. Deep 1	50	0	N/A	0	0
N.F. Deep 2	50	0	N/A	0	0
N.F. Deep 3	50	0	N/A	0	0
S.F. Deep 1	50	3	2	9	290
S.F. Deep 2	50	0	N/A	0	0
S.F. Deep 3	50	0	N/A	0	0
S.F. Deep 4	50	3	N/A	3	97
S.F. Deep 5	50	7	2	0	0

Deep Creek station 5 had the highest estimated population abundance of redband trout at 49 and an estimated fish per mile of 1,578. Additionally, the main stem of Deep Creek had the highest estimated population density of 259 fish per mile. Table 4 show the average fish per mile estimate for Deep Creek and each of the three forks, as well as the entire drainage.

Table 4. Estimated population for Deep Creek., M.F. Deep Creek, N.F. Deep Creek S.F. Deep Creek, and the entire Deep Creek drainage on June 13 - 22, 2016.

Stream	Average fish per mile
Deep Cr.	259
M.F. Deep Cr	59
N.F. Deep Cr.	0
S.F. Deep Cr.	77
Deep Cr. Drainage	139

A single hatchery rainbow trout that came up from Wildhorse Reservoir was sampled at Deep Creek station 3. It was noted that the trout had extreme fin wear and was in poor condition. During the survey, fin clips were collected from fifteen redband trout, with samples being taken from Deep Creek as well as M.F. Deep Creek and S.F. Deep Creek. The fin clips need to be analyzed to determine what level of introgression with hatchery origin rainbow trout is present in the Deep Creek redband trout population.

Due to time constraints and weather conditions, Riffe Creek was not surveyed in 2016.

Flat and Caudal Creek

Due to time constraints and weather conditions, Flat and Caudal creeks were not surveyed in 2016.

Mason Creek Reservoir

A single 335 mm redband trout was sampled during the survey, however, fishing was slow and the survey was largely unsuccessful. A follow-up conversation with the owner of the reservoir revealed that he routinely fishes the reservoir and is very successful. He stated that he routinely catches his limit and they all vary in size. Although anecdotal in nature, this indicates the redband trout are successfully spawning in Mason Creek and that recruitment into the reservoir is occurring.

Bear, Shack, Shell, Wilson, and Lime Creeks

A total of 127 redband trout were sampled during the survey, with the majority being present in Bear, Shack, and Chimney creeks. Redband trout were also present in Wilson Creek and tributaries to Chimney Creek, while no trout were sampled in N.F. Salmon Falls Creek and Shell Creek (Table 5; Map 2; Map 3). Table 1 shows the results of the survey.

Table 5. Date, UTM, water temperature, and number of redband trout present at each station on Wilson Cr., Shack Cr., N.F. Salmon Falls Cr., Bear Cr., Shell Cr., and Chimney Cr. and tributaries on June 28 - 29, 2016 and July 12 - 19, 2016.

Station	Date	# RB Present	UTM E	UTM N	H2O Temp
Wilson 5	6/29/2016	2	665699	4648943	50
Wilson 6	6/28/2016	4	665981	4650073	50
Wilson 7	6/30/2016	Dry	665711	4651310	Dry
Shack 1	7/12/2016	Dry	670781	4647652	54
Shack 2	7/12/2016	17	669873	4648859	59
Shack 3	7/12/2016	2	669689	4650472	57
N.F. Salmon Falls 1	7/19/2016	0	672471	4644162	65
N.F. Salmon Falls 2	7/19/2016	0	673158	4648494	65
Bear 1	7/13/2016	16	671698	4648455	46
Bear 2	7/12/2016	16	672094	4650114	55
Bear 3	7/12/2016	36	671577	4651375	45
Shell 1	7/13/2016	0	671385	4641542	68
Shell 6	7/13/2016	0	674194	4641548	63
Chimney 1	6/29/2016	6	665555	4649355	52
Chimney 2	6/28/2016	15	665131	4650304	53
Chimney 3	6/28/2016	0	664516	4651219	55
Chimney Trib 1	6/28/2016	6	665011	4649800	49
Chimney Trib 2	6/28/2016	7	664578	4650869	51
Chimney Trib 3	6/28/2016	0	663673	4650659	49

There were approximately four age classes of redband trout present in the N.F. Salmon Falls Creek drainage, with the middle age class making up the bulk of the population. The smallest fish sampled was 56 mm in length, with the largest being 215 mm in length. Figure 2 illustrates the length frequency of the redband trout sampled from Wilson Creek, Shack Creek, N.F. Salmon Falls Creek, Bear Creek, Shell Creek, and Chimney Creek and tributaries.

Only a single pass was completed at Wilson Creek Station 7, Shack Creek 1, N.F. Salmon Falls River 1 and 2, Shell Creek 1 and 6, Chimney Creek 3, and Chimney Creek Trib. 3, as no redband trout were sampled during the first pass. A second pass with depletion was performed at the remainder of the stations. Table 6 shows the results of the survey.

Bear Creek Station 3 had the highest estimated population of redband trout at 39 and an estimated fish per mile of 1,262. Additionally, Bear Creek had the highest estimated population density of 830 fish per mile. Table 7 shows the average fish per mile estimate for each of the individual tributaries in the N.F. Salmon Falls drainage as well as the entire drainage

Due to time constraints, a complete survey of Wilson Creek was not completed. Four stations in the downstream portion of the creek were not completed and will be surveyed in the future.

Figure 2. Length frequency of redband trout from the N.F. Salmon Falls Creek drainage on June 28 - 29, 2016 and July 12 - 19, 2016.

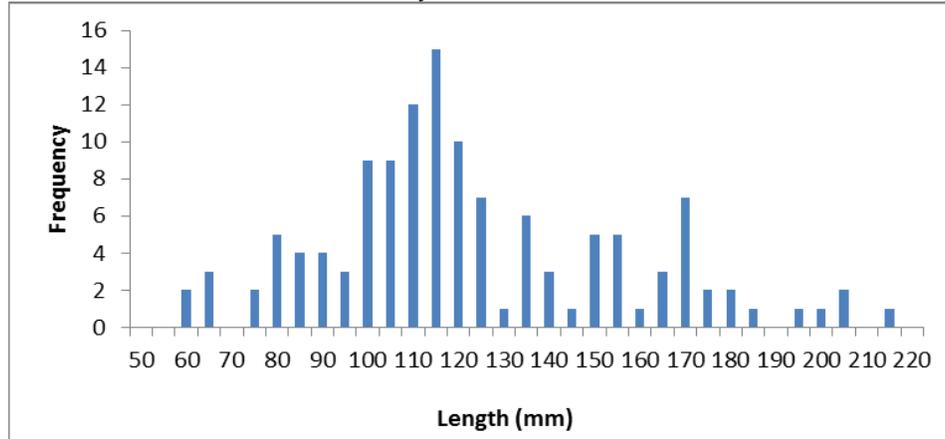


Table 6. Station, station length, number of redband trout first pass, number redband trout second pass, station population estimate (N), and estimated fish per mile for Wilson Creek, Shack Creek, N.F. Salmon Falls Creek, Bear Creek, Shell Creek, and Chimney Creek and tributaries on June 28 - 29, 2016 and July 12 - 19, 2016.

Station	Length (m)	# First Pass	# Second Pass	N	Fish/Mile
Wilson 5	50	1	0	1	32
Wilson 6	50	4	0	4	129
Wilson 7	50	0	N/A	0	0
Shack 1	50	0	N/A	0	0
Shack 2	50	12	5	21	662
Shack 3	50	1	0	1	32
N.F. Salmon Falls 1	50	0	N/A	0	0
N.F. Salmon Falls 2	50	0	N/A	0	0
Bear 1	50	11	5	20	649
Bear 2	50	12	4	18	580
Bear 3	50	28	8	39	1262
Shell 1	50	0	N/A	0	0
Shell 6	50	0	N/A	0	0
Chimney 1	50	3	2	9	290
Chimney 2	50	11	4	17	557
Chimney 3	50	0	N/A	0	0
Chimney Trib 1	50	4	2	8	258
Chimney Trib 2	50	4	3	16	515
Chimney Trib 3	50	0	N/A	0	0

Findings of the survey were similar to previous results, with the largest populations of redband trout in the N.F. Salmon Falls drainage being present in Chimney Creek and its tributaries, Bear Creek, and Shack Creek. Redband trout that were previously found in the N.F. Salmon Falls Creek in small numbers are now absent, likely a result of the recent prolonged drought and land management practices.

Table 7. Estimated population abundance for Wilson Creek, Shack Creek, N.F. Salmon Falls Creek, Bear Creek, Shell Creek, Chimney Creek and tributaries, and the entire N.F. Salmon Falls Creek drainage on June 28 - 29, 2016 and July 12 - 19, 2016.

Stream	Average fish per mile
Wilson	54
Shack	231
N.F. Salmon Falls	0
Bear	830
Shell	0
Chimney	282
Chimney Trib	258
N.F. Salmon Falls Drainage	236

During the survey, fin clips were collected from 42 redband trout. Samples were taken from Chimney Creek and tributaries, Wilson Creek, and Shack Creek. The fin clips need to be analyzed to determine what level of introgression with hatchery origin trout is present in the N.F. Salmon Falls drainage redband trout population.

Other endemic fish species present include Paiute sculpin, speckled dace, redband shiner, longnose dace, and mountain sucker. Table 8 shows the station locations where each respective species was found.

Table 8. Endemic fish species in the N.F. Salmon Falls Creek drainage, the X signifies the species presence on June 28 - 29, 2016 and July 12 - 19, 2016.

Station	P. Sculpin	S. Dace	Redside Shiner	Longnose Dace	Mountain Sucker
Wilson 5	X				
Wilson 6	X			X	
Wilson 7					
Shack 1					
Shack 2	X				
Shack 3					
N.F. Salmon Falls 1		X	X		X
N.F. Salmon Falls 2		X	X		X
Bear 1					
Bear 2					
Bear 3					
Shell 1		X			
Shell 6					
Chimney 1	X				
Chimney 2					
Chimney 3					
Chimney Trib 1				X	
Chimney Trib 2					
Chimney Trib 3					

Overall, the riparian conditions found during the survey were noted as being in fair to good condition throughout the drainage, with the exception of Shell Creek Station 1. Shell Creek Station 1 was overgrazed in 2016, with little to no riparian vegetation present (Photo 1).

Photo 1. Riparian conditions at Shell Creek Station 1 on June 28 - 29, 2016 and July 12 - 19, 2016.



Only two stations were completed on Shell Creek. The farthest downstream station and the farthest upstream station were sampled. Habitat conditions were extremely poor at both locations due to cattle grazing and natural factors. Several portions of the remainder of the stream were walked and it was determined that no redband trout habitat was available in Shell Creek. Shell Creek is a low elevation stream with very limited flows. During the survey, the water temperature at one of the stations was 68°F; summer water temperatures likely exceed the tolerable limit for redband trout.

Due to time constraints, Lime Creek was not surveyed and will be surveyed in the future.

West Fork Deer Creek

A total of 26 redband trout were sampled during the survey, with the majority being present at the farthest upstream stations (Table 9; Map 4).

There were approximately three age classes of redband trout present in W.F. Deer Creek, with the middle age class making up the bulk of the population. The smallest fish sampled was 119 mm in length and the largest was 227 mm in length. Figure 3 illustrates the length frequency of the redband trout sampled from W.F. Deer Creek.

Only a single pass was completed at W.F. Deer Creek Stations 1 – 4 as no redband trout were sampled during the first pass. A second pass with depletion was performed on W.F. Deer Creek Stations 5 - 9. Table 10 shows the results of the survey.

Table 9. Date, UTM, water temperature, and number of redband trout present at each station on W.F. Deer Creek on July 5 - 6, 2016 and July 21, 2016.

Station	Date	# RB Present	UTM E	UTM N	H2O Temp
W.F. Deer 1	7/5/2016	0	659181	4611903	68
W.F. Deer 2	7/5/2016	0	658831	4611419	71
W.F. Deer 3	7/5/2016	0	658389	4610584	66
W.F. Deer 4	7/5/2016	0	658019	4610132	60
W.F. Deer 5	7/21/2016	1	657574	4609279	52
W.F. Deer 6	7/21/2016	4	657325	4608660	51
W.F. Deer 7	7/7/2016	4	657055	4607737	68
W.F. Deer 8	7/6/2016	13	657011	4607056	69
W.F. Deer 9	7/6/2016	4	657033	4606239	N/A

Figure 3. Length frequency of redband trout from W.F. Deer Creek on July 5 - 6, 2016 and July 21, 2016.

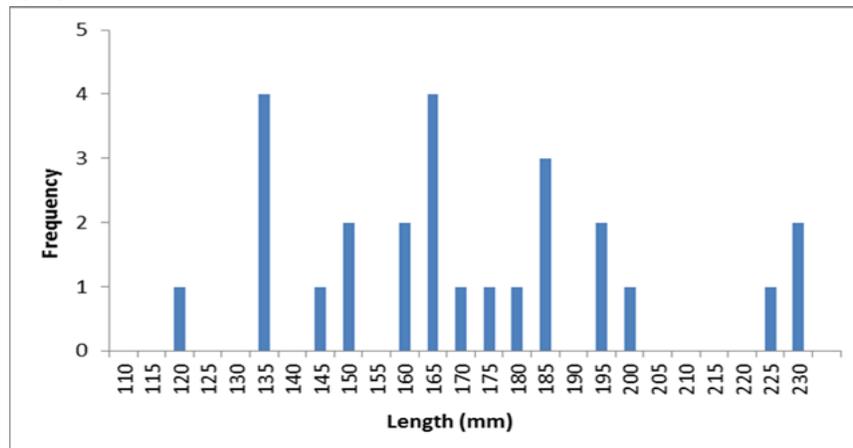


Table 10. Station, station length, number of redband trout first pass, number redband trout second pass, station population estimate (N), and estimated fish per mile for W.F. Deer Creek on July 5 - 6, 2016 and July 21, 2016.

Station	Length (m)	# First Pass	# Second Pass	N	Fish/Mile
W.F. Deer 1	100	0	N/A	0	0
W.F. Deer 2	100	0	N/A	0	0
W.F. Deer 3	100	0	N/A	0	0
W.F. Deer 4	100	0	N/A	0	0
W.F. Deer 5	100	1	0	1	16
W.F. Deer 6	100	3	1	4	72
W.F. Deer 7	100	2	1	4	64
W.F. Deer 8	100	8	5	21	343
W.F. Deer 9	100	3	1	4	72

W.F. Deer Creek Station 8 had the highest estimated population of redband trout at 21 and an estimated fish per mile of 343. The average density for the redband trout occupied reach of W.F. Deer Creek was 114 trout per mile. The average density for the entire stream length of W.F. Deer Creek was 63 trout per mile.

The reintroduction and subsequent augmentation of redband trout into W.F. Deer Creek appears to have been successful. There is an estimated population of nearly 114 trout per mile, with several age classes present indicating that a self-sustaining population of redband trout is now present.

The distribution of redband trout is currently restricted by grazing practices limiting available habitat. The lower reach of W.F. Deer Creek was extremely overgrazed in 2016 (Photo 2). The appropriate BLM personnel were made aware of the situation and on July 21, 2016, BLM personnel were observed in the field investigating the damage.

Photo 2. Degraded habitat on W.F. Deer Creek caused by cattle overgrazing on July 5 - 6, 2016 and July 21, 2016.



East Fork Owyhee River

Six stations that varied in length were sampled on the East Fork of the Owyhee River (Table 11; Map 5). Trout were present at five of the six stations sampled with various densities and composition.

A total of 21 rainbow trout were present at three of the six stations, with multiple age classes represented (Table 11; Figure 4). Twenty-eight brown trout were present at four of the six stations and were dominated by one age class (Table 11; Figure 5).

Figure 4. Length frequency of rainbow trout from the East Fork of the Owyhee River on September 6-8, 2016.

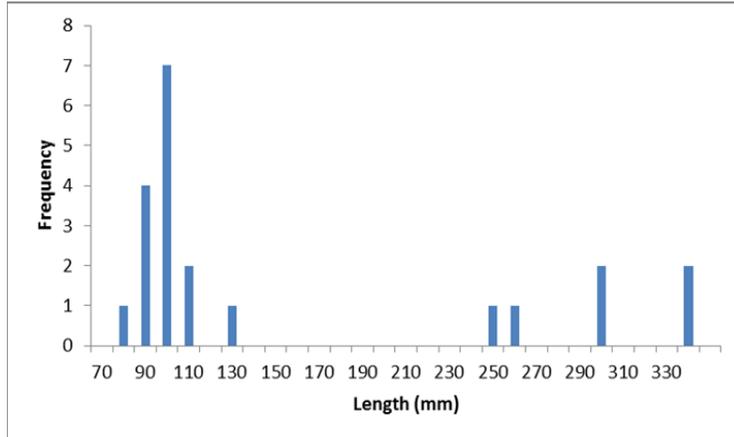


Figure 5. Length frequency of brown trout from the East Fork of the Owyhee River on September 6-8, 2016.

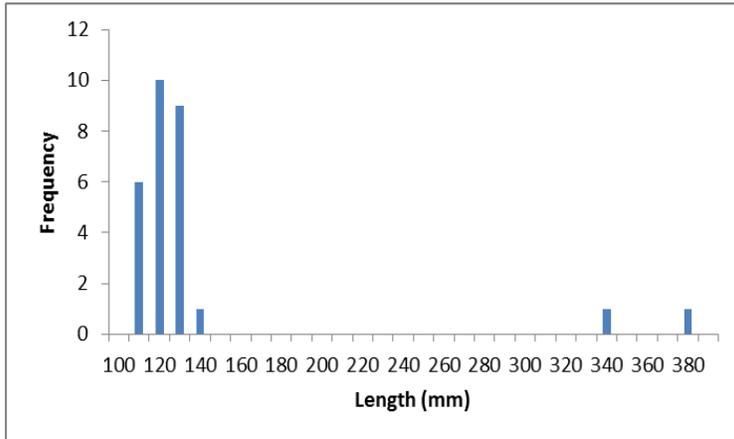


Table 11. Date, UTM, water temperature, number of rainbow trout, and number of brown trout from the East Fork Owyhee River on September 6-8, 2016.

Station	Date	UTM E	UTM N	H2O °F	# RB Present	# BN Present	Length
EFOR 1	7/6/2016	596282	4616199	55	1	0	530 m
EFOR 2	7/8/2016	594721	4616540	58	0	1	100 m
EFOR 3	7/6/2016	593421	4617857	55	0	16	60 m
EFOR 4	7/8/2016	582712	4619354	57	6	10	100 m
EFOR 5	7/7/2016	591272	4620112	56	14	1	100 m
EFOR 6	7/7/2016	589239	4622280	60	0	0	100 m

There were approximately three age classes of rainbow trout present, with the youngest cohort making up the bulk of the population. Approximately 32,000 rainbow trout were stocked into Wildhorse Reservoir in April of 2016 at an average size of 2.0 inches. It is unknown if the stocked trout represent the youngest cohort present in the river or if they were naturally recruited in the East Fork Owyhee River and its tributaries. Several larger rainbow trout were documented and it was noted that they had very little to no fin wear and appeared to be wild trout.

Two age classes of brown trout were present, with the youngest cohort making up the majority of the population. The youngest cohort was represented by 26 individuals that varied in length from 102 mm to 133 mm. Approximately 16,000 brown trout were stocked into Wildhorse Reservoir in early June that had an average length of 4.5 inches. The similar size of the youngest cohort and a very small adult population suggest that the majority of brown trout now present in the East Fork of the Owyhee River likely originated from Wildhorse Reservoir stocking events.

The population of trout in the East Fork of the Owyhee River is currently depressed due to the drought conditions and water management that the river has seen in the last few years. A large population of young brown trout and rainbow trout is currently present in the river, with multiple years of stable flows the river is expected to return to pre-drought conditions

Redside shiner, speckled dace, Paiute sculpin, longnose dace, and bridgelip sucker were documented during the survey. Speckled dace and redside shiner were the most common species, with the remainders at lesser abundances.

Camp and Sun Creek

Due to time constraints and weather conditions, Camp and Sun creeks were not surveyed in 2016.

Inland Redband Trout Conservation Agreement with Conservation Strategies

An Inland Redband Trout Conservation Agreement with Conservation Strategies meeting was attended by Elko personnel in Boise, ID on March 29 – 30, 2017. The Inland Redband Trout Conservation Agreement with Conservation Strategies was finalized and made available on November 17, 2016.

Nevada Department of Wildlife Redband Trout Species Management Plan

The Nevada Department of Wildlife Redband Trout Species Management Plan is currently being revised with the hopes of a draft being available in the fall of 2017. Work will continue until the Species Management Plan is finalized.

MANAGEMENT REVIEW

Northern Nevada experienced normal to above stream flows in 2016. Stable populations of redband trout were documented in the Deep Creek and the N.F Salmon Falls drainages, with the majority of the suitable habitat currently occupied.

The reintroduction and subsequent augmentation of redband trout into W.F. Deer Creek appears to have been successful. There is an estimated population of nearly 114 trout per mile, with several age classes present indicating that a self-sustaining population of redband trout is now present.

The population of trout in the East Fork of the Owyhee River is currently depressed due to the drought conditions and water management that the river has seen in the last few years. A very large population of young brown trout and rainbow trout is currently present in the river, and with multiple years of stable flows, the river is expected to return to pre-drought conditions.

Due to time, constraints and a significant amount of time spent on other grants, Flat, Caudal, Riffe, Lime, Camp, and Sun creeks and the private and BLM portion of Canyon Creek were not surveyed in 2016.

The Nevada Department of Wildlife Redband Trout Species Management Plan is currently being revised with the hopes of a draft being available in the fall of 2017.

The Inland Redband Trout Conservation Agreement with Conservation Strategies was finalized in November 2016, and in conjunction with the Nevada Department of Wildlife Redband Trout Species Management Plan, will provide guidance for management of redband trout in Nevada.

Future surveys will continue to monitor the status of Nevada's redband trout, concentrating on populations that have not been surveyed in recent years.

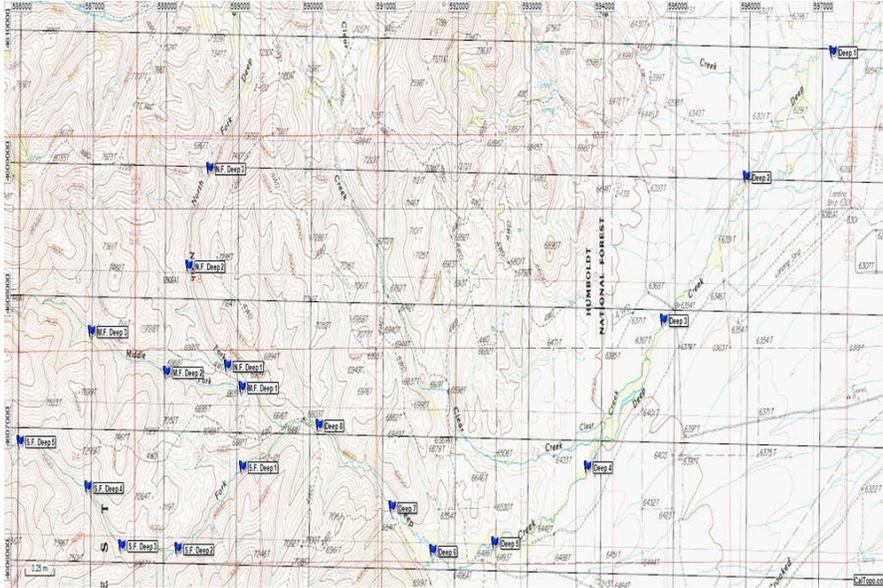
RECOMMENDATIONS

- Survey both Flat and Caudal creeks to document the extent of brook trout invasion in the drainage.
- Survey the BLM portion of Canyon Creek to determine the extent of brook trout invasion and begin to study the possibility of a piscicide treatment
- Continue surveying redband trout streams that have not been surveyed in recent years.
- Finalize the Nevada Department of Wildlife, Redband Trout Species Management Plan.

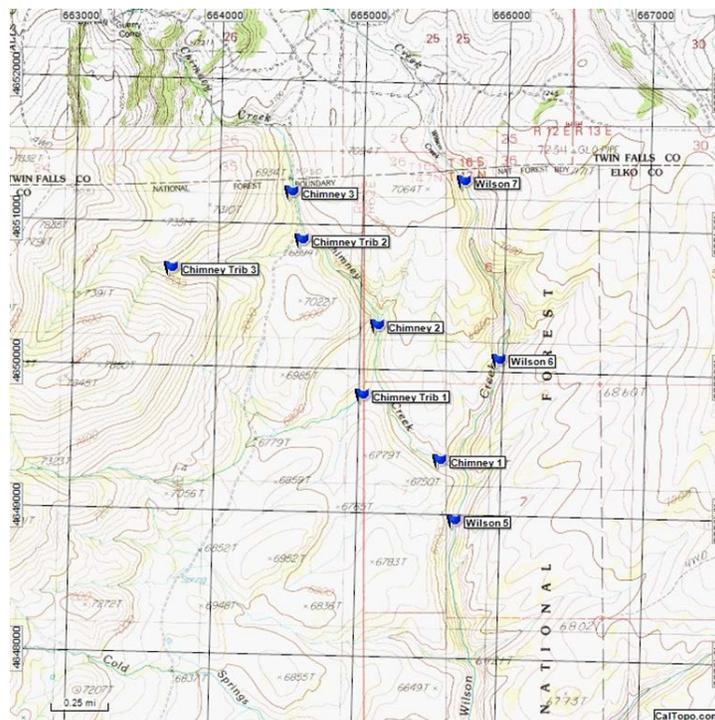
Prepared by: Kevin Netcher
Fisheries Biologist
March 13, 2016

APPENDICES

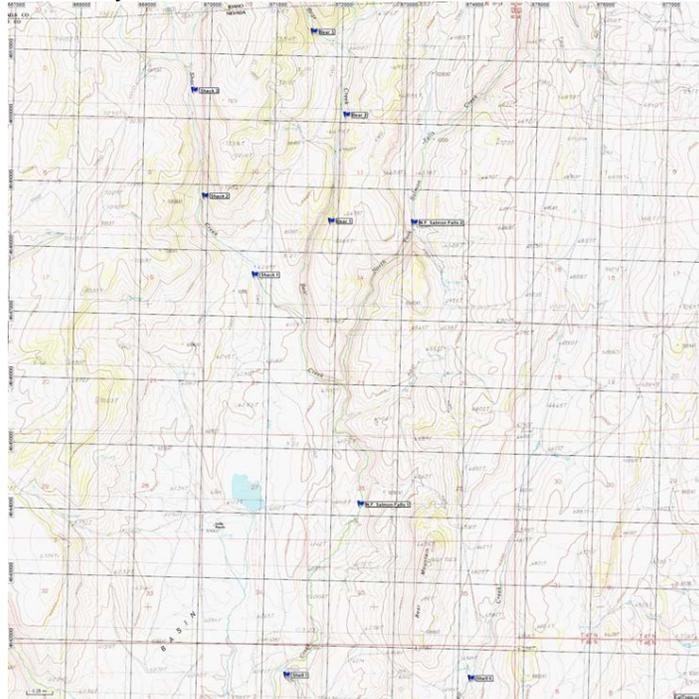
Map 1. Station locations on Deep Cr., N.F. Deep Cr., M.F. Deep Cr., and S.F. Deep Cr. on June 13 – 22, 2016.



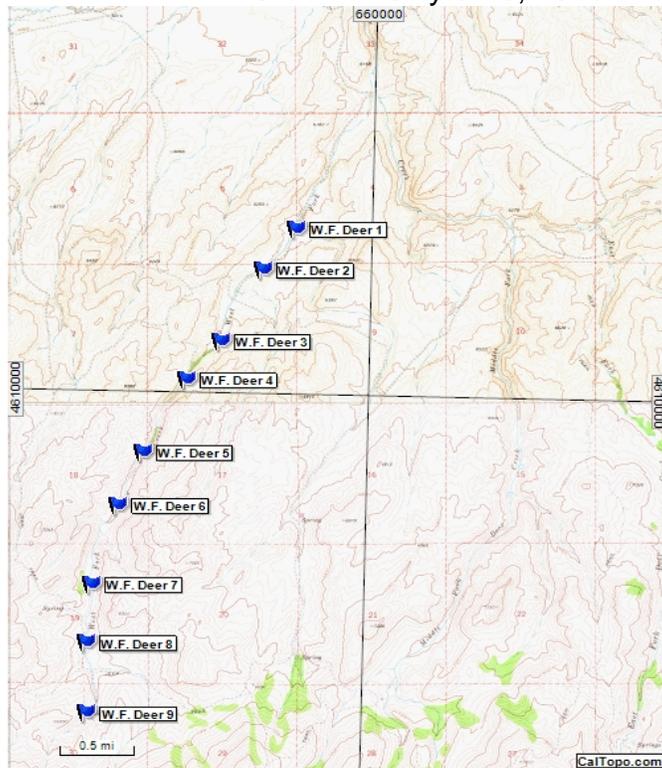
Map 2. Station location on Chimney Cr. and tribs. and Wilson Cr. on June 28 - 29, 2016 and July 12 - 19, 2016.



Map 3. Station location on N.F. Salmon Falls Cr., Bear Cr., Shack Cr., and Shell Cr. on June 28 - 29, 2016 and July 12 - 19, 2016.



Map 4. Station location on W.F. Deer Creek on July 5 - 6, 2016 and July 21, 2016.



Map 5. Station location on the East Fork of the Owyhee River on September 6-8, 2016.

