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Monthly Report
Klamath Watershed District
Roger Smith and William Tinniswood
September 2004

Fish Inventory

Klamath River Redband Trout Project

A draft Sport Fish Restoration Annual Report was completed during the month.

Radio tracking of redband trout occurred until 13 September. No further tracking of redband trout occurred during the month.

Wood River

A telemetry flight was conducted by USGS during September. Redband trout were not located until late September. In late September redband trout 151.700 was found in lower Agency Lake near the strait. Redband trout were tracked by vehicle on 14 September and none were located.

151.972-

1) 11-20-03- Crooked Creek below Agency Creek confluence. Location of redband trout was above the Jim Root Ranch irrigation ditch.
2) 12-09-03 Wood River, ca. RM 0.7 (just below Wood River wetland bridge).
3) 1-15-04 Not at prior location
4) 6-4-04 Agency Lake, mortality near prior Wood River mouth.

150.294-

1) 11-20-03- Agency Lake, approximately 100m southwest of new mouth.
2) 6-4-04 Agency Lake, near mouth of Wood River
3) 6-18-04 Agency Lake, near mouth of Wood River.
4) 7-2-04 Agency Lake, near mouth of Wood River.
5) 7-13-04 Agency Lake, near mouth of Wood River.
6) August- near same location as July

151.935-

1) 11-20-03-Wood River near confluence of Crooked Creek.
2) 12-09-03 Wood River- downstream of old riprap at original tagging location.
3) 1-15-04 Appears to be at same location as 12-9-03
4) 6-4-04 Not found
5) 6-18-04 Not found
6) 7-2-04 Near mouth of Wood River
7) 7-13-04 Near mouth of Wood River
8) August near Mouth of Wood River

151.793-

1) Not found.

151.034-

1) 11-20-03 Mortality at tagging location at old mouth channel downstream of riprap.
2) 12-09-03 Did not locate tag at previous location

151.014-

1) 11-20-03 Wood River near Petric Park Channel
2) 12-9-03 Not found
3) 1-15-04 Not found
4) 4-21-04 Caught and harvested by angler at Eagle Ridge, tag still functional.

151.700

1) 4-2-04 Captured in Agency Lake and tagged in Wood River
2) 6-4-04 Agency Lake, NE corner ca 1km from mouth of Wood River
3) 6-18-04 Agency Lake, NE corner near mouth
4) 7-2-04 Agency Lake, NE corner near mouth
5) 7-13-04 Agency Lake, NE corner near mouth
6) August 04- near same location as July.
7) September 04-located in South Agency Lake near strait.

151.944-

1) 11-20-03 Agency Creek (Jim Root Property)
2) 12-05-03 Agency Creek, mortality.

Jenny Creek(Klamath River)

Collection of Jenny Creek suckers for SOU occurred on 22 September. SOU will be aging Jenny Creek suckers using opercles. Two sites were electroshocked. A total of 26 suckers were euthanized and length and weight taken. One adult and three larval suckers were collected from 42.16359 latitude 122.32601 longitude to 42.16292 latitude 122.32847 longitude. Redband trout and speckled dace were also captured at this site.
Twenty-seven adult and juvenile suckers were captured at the lower Jenny Creek crossing at 42.02346 latitude 122.35809 longitude upstream to 42.02529 latitude 122.35621 longitude. Jenny Creek suckers appeared to be most abundant in fast water habitats with depth and large substrate such as boulder and large cobble. Redband trout up to 350 mm were captured along with speckled dace.

Williamson River

The annual Williamson River redd count from the mouth of Spring Creek to Pine Ridge Mill Site occurred on 14 September. A total of 224 redds and 360 redband trout were enumerated. The 2004 redd count is the highest on record (Figure 1). Redd counts have high variability between

years due to visibility, observer and weather. Redd and redband trout visibility was excellent due to low flows. No flow was coming from the Klamath Marsh during the survey.

Crooked Creek

Redband/rainbow trout were observed spawning in Crooked Creek at Klamath Hatchery on 23 September.

Klamath Watershed Streams

Craig Bienz (Nature Conservancy) sent data on two-pass depletion estimates on Upper Williamson River (at Deep Creek, Bull pasture, Royce Tract), Larkin Creek, Fivemile Creek, Sycan River, Crooked Creek, Jackson Creek, Sand Creek, and Trout Creek (Appendix A Table 2). Nature Conservancy data on Upper Williamson suggest good water years result in higher redband trout abundance. Higher redband trout abundance is apparrant at the Deep Creek, Bull Pasture, and Royce Tract site on the Upper Williamson in good water years of 1997 and 1998. In 1997 at bull pasture redband trout 1+ abundance was high while in the year 1999 and 2000 no redband trout were captured (Appendix A Table 2). The trend where redband trout abundance increases and decreases due to water year also occurs at the Deep Creek and Royce Tract on the Upper Williamson River.

Redband Trout Index Streams

ODFW Klamath Watershed District identified four redband trout index streams in Klamath County. Streams chosen were Long Creek, Spencer Creek, Brownsworth Creek and Cherry Creek. Abundance for redband 1+(greater than 79 mm) per square meter will be calculated and put into three categories of abundance; low (0-0.059 fish/m^2 or 0-2.0 grams/m^2) , medium (0.060-0.19 fish/m^2 or 2.1-4.9 grams/m^2) and high (>0.19 fish/m^2 or >5.0 grams/m^2) (Dambacher 1995) . The Klamath Watershed District objectives were to:

1) Start a long term data set that displays variations in redband trout population abundance due to water year.
2) Determine abundance of harvestable (8”or greater) redband trout in streams.
3) Document presence and absence of fish species.
4) Compare fish densities and species presence with data summarized by Dambacher (ODFW Aquatic Inventory Project 1995).

Spencer Creek(Klamath River)

Two-pass depletion electrofishing with depletion of 50% for 1+ (greater than or equal to 80 mm) redband trout was conducted on Spencer Creek on 31 August beginning at mouth of Miners Creek and proceeding upstream. The Spencer Creek sample site was the same as Jeff Dambacher’s (ODFW 1995) index reach SPN 25. With the assistance of Medford BLM two more habtitat units were electroshocked on 22 September at the 2005 large woody debris site

project implemented by BLM and Timber Resources LLC. All Sites were just downstream of the Spencer Creek hookup road culvert and upstream of the confluence of Miners Creek. A total of six habitat units were shocked for a total of 174 m of stream sampled. Redband trout (0+) dominated catch and relative abundance was high. Redband trout 1+ abundance was higher than in 1995 (Table 1). Smallscale sucker were found as high as last habitat unit sampled. Six smallscale suckers were euthanized and taken by Medford BLM to be aged using opercles. An SOU student will age Jenny Creek, Spencer Creek, and Klamath River smallscale suckers. A mature male smallscale sucker (fork length 139 mm) with a slight redstripe and tubercles on anal fin was observed. Crayfish, belostomatidae, *Pteronarcys californica*, lamprey ammocetes, lamprey adults, speckled dace and pacific giant salamanders were observed. No speckled dace were observed in the two habitat units where large woody debris will be placed in 2005. One redband trout greater than eight inches was captured (Figure 1.). Total species catch is summarized in Table 2.

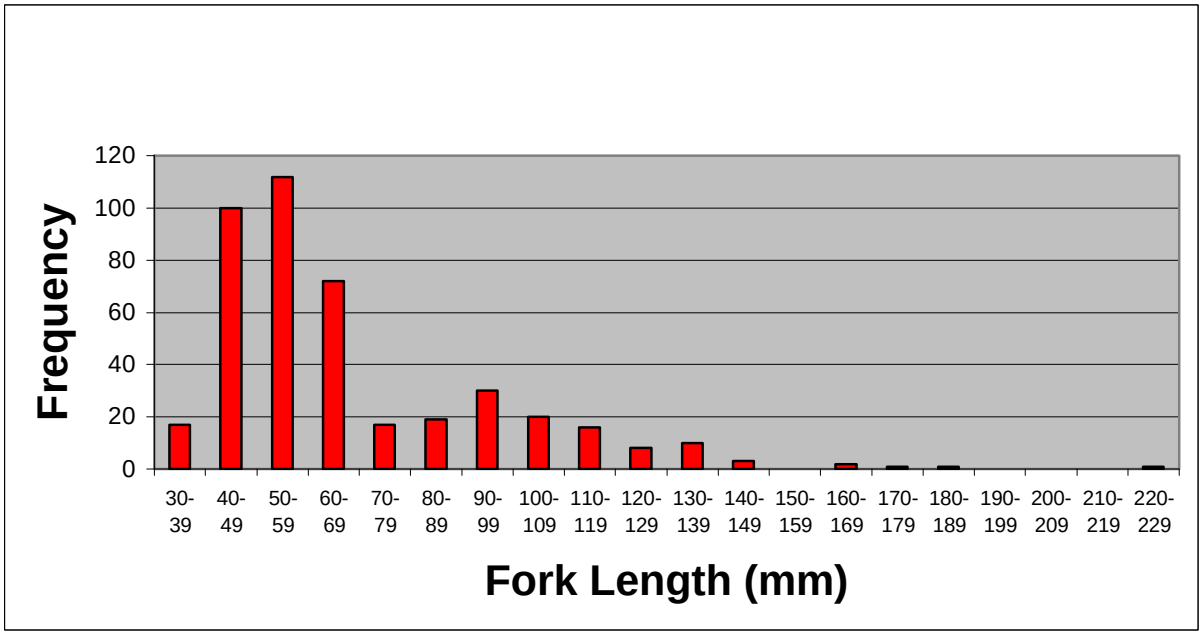

Figure 1. Length-frequency of redband trout captured by two-pass electrofishing on Spencer Creek (RM 4) in summer of 2004.

Long Creek (Sycan River West)

Two pass electrofishing with depletion of 70% for redband trout 1+ (greater than or equal to 80 mm) occurred on Long Creek on 2 September. Water temperature was 48° F at 1000 hrs. The Long Creek sample site was the same as Jeff Dambacher's (ODFW 1995) index reach (LNG 41) and was located at the Jeld Wen and Nature Conservancy boundary. Sampling consisted of six habitat units at a total distance of 136 m and proceeded upstream. Craig Bienz (Nature Conservancy) has completed depletion electrofishing since 1999 on Long Creek. Comparisons to Nature Conservancy two-pass electrofishing shows most redband trout 1+ densities are low in Long Creek (Appendix A Table 1). Age 0+ redband trout densities are low. Brook trout dominated catch (Appendix A Table 3). Speckled dace,

lamprey ammocetes, crayfish, and *Pteronarcys californica* were observed. No redband trout greater than 8 inches were captured (Figure 2).

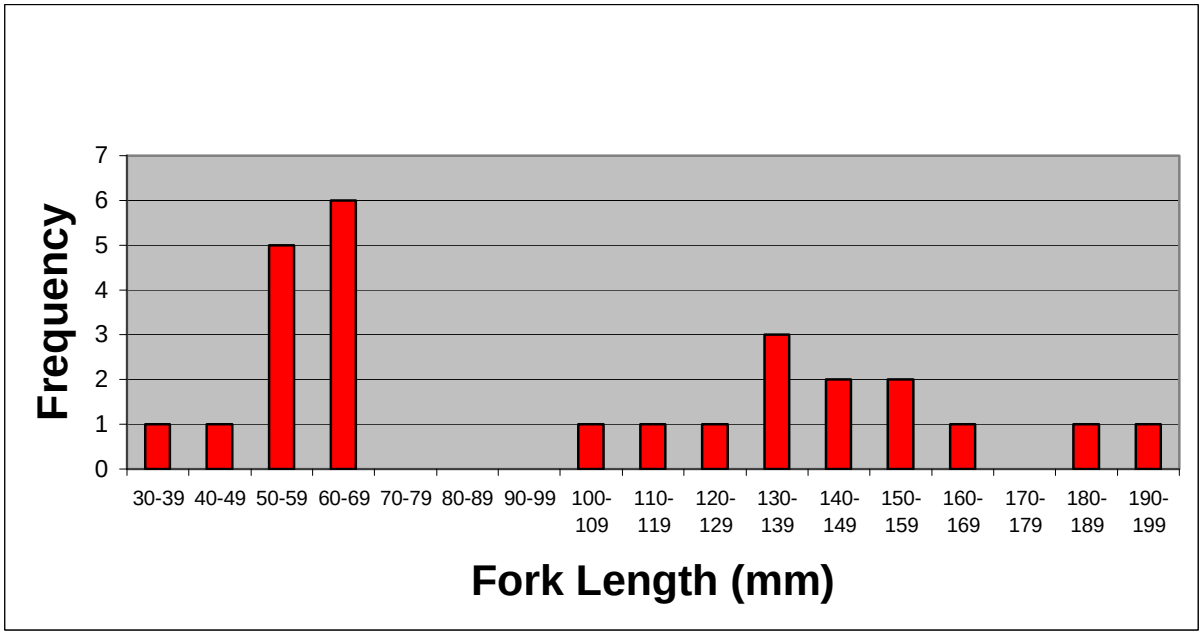

Figure 2. Length frequency of redband trout in Long Creek captured by two-pass electrofishing in the summer of 2004.

Brownsworth Creek (SF Sprague)

Two-pass electrofishing occurred on Brownsworth Creek on 8 September at the index reach (BRN 23) identified by Jeff Dambacher (ODFW) in 1995 just above confluence of Hammond Creek (42.41981,120.85767 start and 42.42090, -12085701 end). Depletion of 70% for redband trout (1+) (greater than or equal to 80 mm) was obtained. Fish estimates for redband trout (0+) less than 80 mm were made but 70% depletion did not occur. Eight mixed habitat untis were sampled for a total of 164 m of stream. Brownsworth Creek had the highest redband trout relative abundance of any of the four streams sampled in 2004 (Appendix A Table 1 and 3). No redband trout greater than eight inches were captured (Figure 3). A total of seven bull trout and three brown trout were captured. No bull trout were captured by ODFW in 1995. All bull trout were of the same age class ranging in size from 90-110 mm. Bull trout densities for lower Brownsworth Creek were higher in 2004 than 2000 (Appendix A Table 1). However, more habitat was sampled in the year 2000 thus reducing variance. Three brown trout were captured. One brown trout was a mature male. Density of brown trout was lower in 2004 than in 1995.

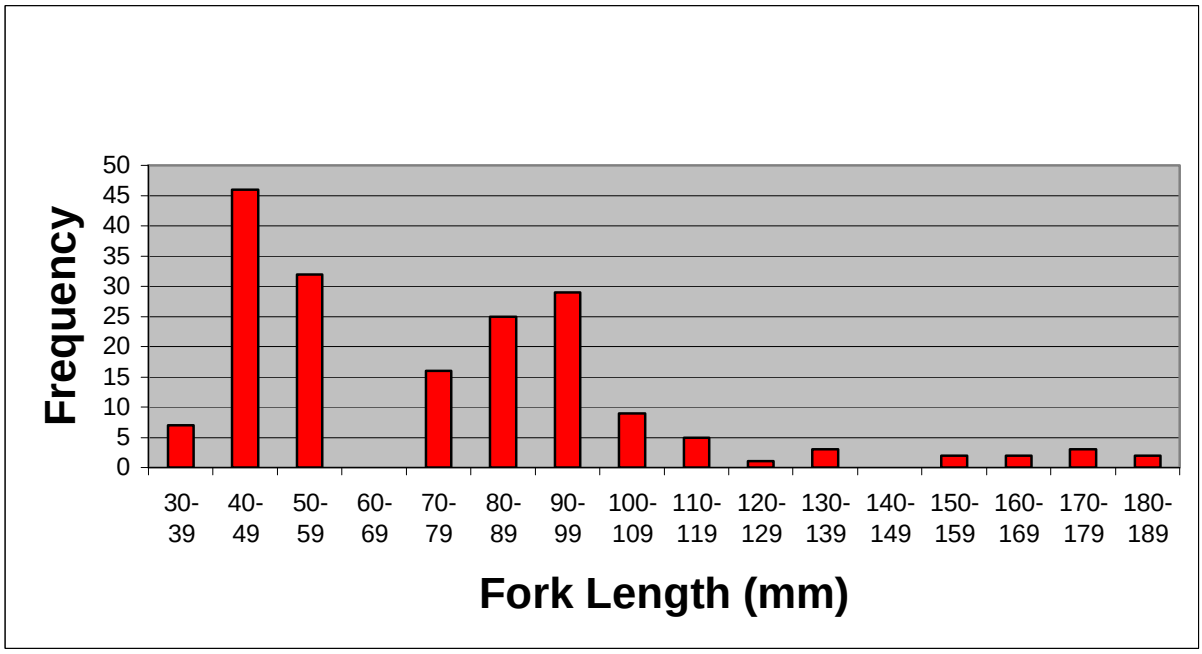

Figure 3. Length frequency of redband trout in Brownsworth Creek captured by two-pass electrofishing in the summer of 2004.

Cherry Creek (Fourmile Creek)

Two pass electrofishing with depletion of 70% for redband trout 1+ (greater than or equal to 80 mm) occurred on Cherry Creek on 7 September. Eight habitat units were shocked from snowmobile crossing (42.59981, -122.09361) to just above headgate at diversion (42.59822,-122.094312). A total of 175 m of Cherry Creek was electrofished. Redband trout 1+ density was moderate (Table 1). Total abundance of redband trout was greater than brook trout by a ratio of 1.5:1 (Appendix A Table 3). No redband trout greater than 8 inches were captured (Figure 4). A depletion estimate for brook trout could not be calculated due to lack of depletion. No other fish species were captured. Water temperature was 48° F at 1030. *Pteronarcys californica* were observed.

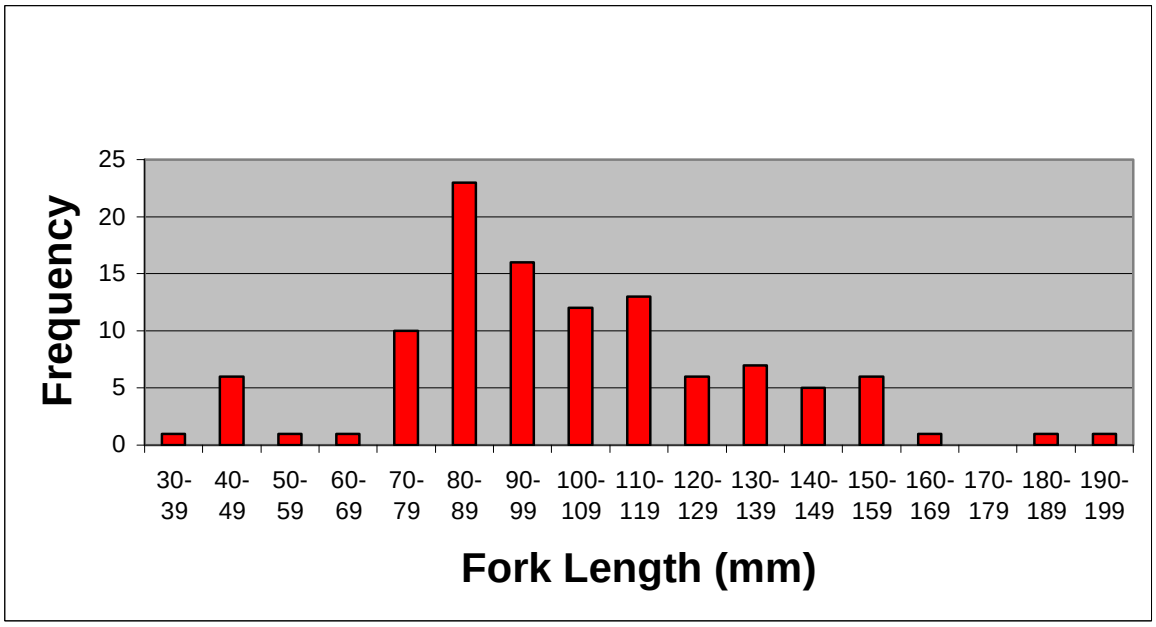

Figure 4. Length frequency of redband trout in Cherry Creek captured by two-pass electrofishing in the summer of 2004.

Meetings/ Public Outreach

District staff attended the hatchery production meeting on 23 September.

District staff attended the bimonthly water quality conference call on the Klamath River basin on 9 September.

District staff attended the Upper Williamson Watershed Assessment meeting on 21 September.

District staff attended the Watershed Manager meeting and the sucker telemetry meeting on the 20 September.

District staff toured Nature Conservancy property on Long Creek and managed property on the Sycan River. An impassable weir on the Sycan River was discussed.

District staff prepared for and attended the R and E board tour on 24 and 25 September.

Personnel

William Tinniswood took one week of vacation.

Trent Hartill completed his last day of work on 17 September.

Appendix A

Table 1. Fish density in streams in the Klamath Watershed District using two pass electrofishing. Estimates using gram/m^2 are Craig Bienz data (Nature Conservancy)

Date	Stream	Fish species	g/meter^2	Fish/m^2	Abundance (Low, moderate, high)
2000	Brownsworth Creek	Redband 1+		0.112	Moderate
2000	Brownsworth Creek	Redband 0+			
1995	Brownsworth Creek Lower	Redband 1+		0.3	High
1995	Brownsworth Creek Lower	Redband 0+		0.051	Low
1995	Brownsworth Creek Lower	Brown Trout		0.014	
2000	Brownsworth Creek Lower	Bull trout		0.0018	
2000	Brownsworth Creek Lower	Redband 1+		0.101	Moderate
2004	Brownsworth Creek Lower	Redband 1+		0.246	High
2004	Brownsworth Creek Lower	Bull trout 1+		0.02	
2004	Brownsworth Creek Lower	Redband 0+		0.295	
2004	Brownsworth Creek Lower	Brown Trout		0.0081	
2004	Cherry Creek	Redband 1+		0.1072	Moderate
2004	Cherry Creek	Redband 0+		0.0272	
2004	Long Creek	Redband 1+		0.0248	Low
2004	Long Creek	Redband 0+		0.0248	
2000	Long Creek B	Redband 1+	1.014		Low
2003	Long Creek B	Redband 1+	1.210		Low
2003	Long Creek C	Redband 1+	0.110		Low
2000	Long Creek D	Redband 1+	0.607		Low
2003	Long Creek E	Redband 1+	0.330		Low
2000	Long Creek F	Brook 1+	2.781		Moderate
1998	Long Creek Lower	Redband 1+	2.216		Moderate
1998	Long Creek Upper	Redband 1+	0.151		Low
1999	Long Creek Upper	Redband 1+	1.408		Low
1995	Long Creek(LNG 41)	Brook 1+		0.043	Low
1995	Long Creek(LNG 41)	Redband 1+		0.016	Low
1995	Long Creek(LNG 41)	Brook 0+		0.1	
1995	Long Creek(LNG 41)	Redband 0+		0.01	
1995	Spencer Creek	Redband 1+		0.038	Low
1995	Spencer Creek	Redband 0+		0.25	
1995	Spencer Creek	Sucker		0.0027	
2004	Spencer Creek	Redband 1+		0.1477	Moderate
2004	Spencer Creek	Redband 0+		0.4461	
2004	Spencer Creek	Sucker		0.0134	

Table 2. Relative abundance g/m^2 of redband trout 1+ in streams of the Klamath watershed (Craig Bienz Nature Conservancy)

Date	Stream	Fish species	g/meter^2	Fish/m^2	Abundance (Low, moderate, high)
1998	Crooked Creek	Redband 1+	3.095		Low
1999	Crooked Creek	Redband 1+	5.232		High
2000	Fivemile Creek Lower	Redband 1+	0.000		Low
1999	Jackson Creek	Redband 1+	0.000		Low
2000	Larkin Creek Lower	Redband 1+	0.480		Low
2000	Larkin Creek Upper	Redband 1+	0.000		Low
2000	Sand Creek	Redband 1+	0.000		Low
2000	Sycan River EF	Redband 1+	3.137		Moderate
2000	Sycan River SF	Redband 1+	0.312		Low
2000	Sycan River TP	Redband 1+	0.441		Low
1999	Trout Creek LM	Redband 1+	17.060		High
2000	Trout Creek LM	Redband 1+	4.097		Moderate
2000	Trout Creek MS	Redband 1+	4.432		Moderate
1999	Trout Creek NF	Redband 1+	6.538		High
1999	Trout Creek SF	Redband 1+	8.567		High
2000	Trout Creek SF	Redband 1+	4.506		Moderate
1999	Trout Creek UM	Redband 1+	13.640		High
2000	Trout Creek UM	Redband 1+	5.593		High
1997	Upper Williamson(Bull)	Redband 1+	5.759		High
1998	Upper Williamson(Bull)	Redband 1+	2.741		Moderate
1999	Upper Williamson (Bull)	Redband 1+	0.0000		Low
2000	Upper Williamson (Bull)	Redband 1+	0.0000		Low
1995	Upper Williamson (Deep)	Redband 1+	0.4890		Low
1997	Upper Williamson (Deep)	Redband 1+	2.0090		Moderate
1998	Upper Williamson (Deep)	Redband 1+	1.0368		Low
1999	Upper Williamson (Deep)	Redband 1+	0.4004		Low
2000	Upper Williamson (Deep)	Redband 1+	0.0000		Low
1995	Upper Williamson(Royce)	Redband 1+	0.986		Low
1997	Upper Williamson(Royce)	Redband 1+	1.768		Low
1998	Upper Williamson(Royce)	Redband 1+	0.919		Low
1999	Upper Williamson(Royce)	Redband 1+	0.868		Low
2000	Upper Williamson(Royce)	Redband 1+	0.448		Low

Table 3. Summary of species captured by two pass electrofishing during the summer of 2004

Stream	Species	Total captured
Brownsworth Creek	Redband 0+	101
Brownsworth Creek	Redband 1+	81
Brownsworth Creek	Bull Trout 1+	7
Brownsworth Creek	Brown Trout 0+	1
Brownsworth Creek	Brown Trout 1+	2
Cherry Creek	Redband 0+	19
Cherry Creek	Redband 1+	91
Cherry Creek	Brook Trout 0+	49
Cherry Creek	Brook Trout 1+	22
Long Creek	Redband 0+	13
Long Creek	Redband 1+	13
Long Creek	Brook Trout 0+	158
Long Creek	Brook Trout 1+	43
Long Creek	Speckled dace	201
Long Creek	Lamprey	9
Spencer Creek	Redband 0+	318
Spencer Creek	Redband 1+	111
Spencer Creek	Small scale sucker	13
Spencer Creek	Speckled dace	47
Spencer Creek	Lamprey	8